

The Book: the spiritual individual in quest of the
living organization – Codec for the Infinite Game

This is not *The Book*.
It is only a book about *The Book*.

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Cover blurb

Four technocrats armed with a mysterious manuscript, a secret formula and a radically new computer program battle a conspiracy of entrenched reactionary forces in a global struggle to determine humanity's future.

An idealistic Indian marketing wizard, a timid but brilliant Jewish idealist from Boston, a strikingly beautiful Russian mathematician and a monk-like Irish American philosopher-engineer embark on a mission to change the world. A book without author or title roams the earth for decades, silently unleashing revolutionary change, until it finds these four failed but aspiring entrepreneurs and inspires them to create a radical artificial intelligence program, AIS, an instrument for unfailing accomplishment. Their personal struggle to decipher the book's contents and discover the secret formula for its application lead them on a profound spiritual exploration of knowledge that is power—until they stumble upon the occult process of creation and the formula for infinite self-multiplication. Pitted against them is an alliance of forces seeking to maintain their grip on the world's power—a government that perceives AIS as a threat to its pre-eminent strength and status, a syndicate of hedge fund traders that will stop at nothing to obtain the program's formula for infinite wealth, a scientific community outraged by the challenge the book poses to its monopolistic hold on truth, a church bent on suppressing the book's revelatory knowledge, and fanatical fundamentalists seeking unrivalled power for destruction. Two titanic personalities battling for the mind and soul of humanity alone understand what others have barely glimpsed. The book and the program hold the key to humanity's future. And behind them stands Life, the whimsical goddess of fate and grace, composing her symphony out of irreconcilable contradictions, raging conflict, unbridled passions, lofty aspirations and binding values to work out her own destiny according to her own evolutionary laws.

- **Four technocrats in quest of the formula for unfailing accomplishment embark on a remarkable voyage of self-discovery.**
- **A clash of titans vying for the world's soul.**
- **A mysterious manuscript without author or origin containing the ultimate secret to infinite power.**
- **The world's first artificial intelligence system that is conscious and evolves.**
- **A hundred year old sect springs to life amidst rumors of a perpetual money machine.**
- **Governments, organized religion, science and fanaticism allied in a global conspiracy to stop the flow of time.**
- **The laws of scarcity are annulled by a technology for self-multiplication.**
- **A secret society tries to monopolize the knowledge that is power.**
- **Truths of a forgotten science reveal hidden patterns in chance events.**
- **Money and mysticism battle to control the future of humankind.**
- **A Game played by adepts invokes a Descent of power.**
- **A mathematician pursues the elusive formula for eternal romance.**
- **An aging professor silently orchestrates a global revolution.**

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PROLOGUE

She sat in a courtyard surrounded by hundreds of people, motionless in her chair, eyes closed, self-absorbed within herself, unaware of the occasional rustle or cough among those around her. She was looking for something, thirsting, calling silently within her being. Concentrating with all the power of her prodigious will, she saw in her vision a huge and massive golden door blocking the way. Lifting an enormous golden mallet, with one blow she shattered the door into pieces. A huge flood of golden light poured down from the heavens upon the earth and was absorbed into the dark, impenetrable substance of the world's unconsciousness. No one present had any idea what had occurred, but the future was inextricably altered that day. Revolutions should not be judged by the number of heads guillotined or lives otherwise sacrificed for a noble cause, but rather by the subsequent impact of the turmoil on human history. By that standard, the forces put into play on February 29, 1956 were the most potent and revolutionary in history.

The world has known many kinds of revolutions—peaceful and bloody, glorious and profane, red, white and green—but never one quite like this. Some years have been made immortal by the onset of a revolution—1517 in Germany, 1688 in England, 1776 in America, 1789, 1830 and 1848 in France, 1917 in Russia, 1947 in India, 1949 in China, and a very long list of less remembered tumultuous events. Revolutions have small beginnings: a protest against the sale of indulgences, a tea party of angry tax payers, the storming of a Bastille, a shortage of bread, a naval mutiny, a student demonstration. Sometimes the response is immediate and dramatic, a sudden explosion of energy, an outburst of popular descent, or war in the city streets. At other times, the beginning goes unnoticed or the initial eruption quickly subsides, the movement goes beneath the surface and works there to undermine the foundations of a decaying social edifice that still has the power to resist change. But regardless of whether the impact is swift or slow, whether it comes as a mighty blow or a gentle breeze, the world is never the same afterwards.

The revolution of 1964 is not marked for remembrance on any national calendar. It all began on September 30, with a peaceful student protest demanding free speech on the steps of Sproul Hall at the University of California at Berkeley. Inflamed by a clumsy administration and overzealous police force, a local brush fire soon blazed into a national conflagration and crossed the oceans to ignite flames of protest among students around the world. Initially focused on the right of students to express their opposition to the War in Vietnam, it quickly spread to embrace the rights of black Americans, Hispanic farm workers, feminists, the environment, prophets of the Aquarian Age, drug and free love advocates, and virtually every other cause challenging the Establishment and conventional social values. Termed by scholars as a counter-culture social revolution, at its heart was one word, one value—freedom. From North America it moved south and east where it ignited the hearts of youth in Buenos Aires, La Paz, Paris, Naples and countless other cities and university towns. Its influence seeped under the impenetrable barrier dividing East and West into the minds and hearts of youth behind the Iron Curtain, where it fired the brief glorious outburst known as the Prague Spring, until it was violently quelled by invading Soviet tanks in August 1968.

Since 1956 history has recorded many remarkable events that have irreversibly altered and are still altering the course of human history. Many others have gone unobserved and unrecorded, seeds of the future which have long gestated beneath the surface and are only now beginning to reveal their existence and significance. Such are the events recorded in this book.

On October 2, 1964, a tall, handsome Indian youth strolled down Telegraph Avenue in Berkeley and walked into Moe's Books. A poorly dressed engineering graduate with a glowing complexion and soft melodious voice, he browsed the shelves looking enviously at the rich hoard of intriguing titles. Occasionally he stopped to remove a volume and browse through its pages, but invariably he replaced them when he saw the price scribbled in pencil on the inside cover. However good the bargains, they were not good enough for one living with his young bride on a teaching assistant's stipend. Still he persisted in this vicarious pastime which he loved so well. His curiosity was attracted to a brown leather-bound volume without any title on the cover. Reaching for the book, he opened it at random and read the first lines that came within his view.

All problems in life are problems of harmony.

Obviously written by a diplomat or a married man, he laughed to himself, but certainly not by a poor engineer struggling to make ends meet. Reflecting further on the statement, he realized it aptly described the structural engineer's challenge of harmonizing form and function. As for the economics of a graduate student... Suddenly his musings were interrupted by the sounds of shouting in the distance. Through the store window, he could see dozens of people running towards the campus with agitated

expressions. As the young man left the store, he heard police sirens in the distance. He joined the hurrying crowd and was carried along with hundreds of others into a massive spontaneous gathering of what looked liked at least one thousand students. The streets were blocked on all sides by police cars as rows of troopers armed with clubs and tear gas encircled the steps of Sproul Hall.

A vibration of tension blanketed the atmosphere. The very air breathed fear and outrage. Standing like an invisible observer in the very midst of the turmoil—quite literally, a stranger in a strange land—a thought pressed insistently on his mind but could not gain entry. Then he remembered. It was something he had just read in that book about harmony. A few years later he recalled that moment, that thought and that book as he watched thousands of protestors rushing past his apartment on Dwight Way to escape from the onrush of police firing tear gas canisters. How ironic, he mused, that a freedom movement suppressed by violence should have been born on Mahatma Gandhi’s birthday.

Four years later on August 20, 1968, an American freelance journalist was driving through Prague in a VW bus to report on the peaceful flower revolution engendered by Alexander Dubček. Passing down the narrow lanes of the old city, he saw young people in blue jeans playing music on the sidewalks, reminiscent of a scene from Berkeley, but hardly what he had expected to find behind the Iron Curtain in communist Czechoslovakia. The following morning he took a walking tour of the city, stopping every hour at a different café to sit and watch the myriad smiling faces of people whose lightly skipping steps called to his mind a celebration of freedom.

Late in the afternoon, he passed a small bookshop with a cardboard sign hanging in the window, “Foreign Books for Sale”. Entering the shop, he quickly found the small table laden with myriad titles in French, English and Italian. He reached down to pick up a brown leather volume without any title on the cover. Opening the book carelessly, he read to himself the following sentence:

Freedom is the final law and the last consummation.

Curious as to the title and author, he flipped back through the pages to the title page. Just then he heard a rumbling sound in the distance and voices shouting in panic on the street outside the shop. He put down the book and rushed to the front door. Following the eyes and fingers that were pointing down the road toward the outskirts of the city, he saw what they saw—a long procession of Soviet tanks and army trucks streaming into the city and heading his way. The Prague Spring ended at that very moment. Little could the young journalist imagine that he was witness to the first tiny fissure that would ultimately lead to the collapse of the Berlin Wall twenty-one years later.

On February 21, 1971, a strikingly attractive young woman wandered into a tiny bookstore near Nevsky Prospekt in St. Petersburg, Russia and browsed through its narrow aisles and ceiling high dusty shelves thinking of nothing in particular, except the meeting an hour later with her boyfriend Andrei at a small café across from the marketplace where students and lovers gathered to whisper things that should not be heard by others. She passed quickly through the rows of books on physics and mathematics, many of which she had read or mastered in the course of her studies. But her mind was not on theorems and equations today. It was on love. A bearded old shopkeeper named Grigorio sat behind the counter, leaning back in his chair with eyes closed in a pose of utter exhaustion, as if he had just completed the monumental task of reading every book in the shop. But she knew better. In all her visits, she had never once found him with a book in his hands. His exhaustion stemmed from something other than reading. Perhaps from the Herculean effort not to speak the thoughts that were in his mind.

Without disturbing the old man, she passed to a small shelf in the rear of the shop where used books on a variety of subjects were stuffed in haphazard fashion. Trained as a physicist to believe in uncertainty as an article of faith, Sonya loved surprises and always gravitated to this corner to see what new or old tome might suddenly show up. This morning her eye was caught by a brown leather volume without any title on the binding or front cover. She knew it must be old, for nothing was bound in leather these days, except Politburo reports. Opening the book at random, she discovered the text was in English. Although study of English had been mandatory for physicists, her knowledge of the language was confined to scientific jargon. Concentrating, she read

The whole secret of life lies in the unity of opposites and the complementarity of contradictions which are the spiritual essence of romance.

Huh, she smiled to herself, how very appropriate. The author sounds like a physicist in love. Then glancing at the opposite page

Love is a passion and it seeks for two things, eternity and intensity. Love is a yearning for beauty...

Just then Grigorio coughed loudly, opened his eyes and sat up. Startled by the sound and movement, she glanced down at her watch and realized it was time for her rendezvous with Andrei. She replaced the book on the shelf and hurried from the shop to the café across the street with a sense of joyous anticipation. As she approached the table where Andrei was intensely engrossed in conversation with another student, he raised his head momentarily and smiled broadly, then immediately returned to what he was saying. Is this how lovers greet their eternal complements, she wondered? Where is the passion and yearning? Where is the eternity and intensity? Pouting slightly, she sat down next to him and he extended his arm around her shoulder to draw her closer without turning his head away from his friend. “What is so very important that you are discussing, Andrei?” she asked, more in an effort to attract his attention than to discover any secrets that might separate them.

Andrei turned to her and handed her a student newspaper. “Politics, my sweet, as usual. Just some news about a party apparatchik from Stavropol named Gorbachev who has been elected to represent party youth in the Party Central Committee.”

“From Stavropol? Sonya asked. “Why, he is one of your own countrymen. Have you ever heard of him before?”

“Yes, he has done much to improve agricultural production and worker conditions in my region. It’s a huge promotion for one so young in that august gathering of octogenarians. Why, he’ll be the only one who wasn’t born when Comrade Lenin led our glorious revolution. Do you think he could possibly be wise enough to deserve this remarkable distinction?” Sonya knew very well the disdain with which Andrei regarded the whole Communist Party, so she easily detected the implied sarcasm concealed by his apparently patriotic demeanor. She fervently hoped that no one else could.

Three days later the same young woman entered the same bookshop, passed Grigorio as he leaned back with eyes closed in the same position as before. She walked to the small shelf in the back of the shop and looked for the leather-bound book she had read from earlier in the week. It was nowhere to be seen. She thought of rousing Grigorio to ask what had happened to it, but suddenly realized she did not even know the book’s title. She quickly resigned herself to the disappointment and told herself it was only a foolish impulse that had carried her back in the first place. In a span of three days, she had been offered a post at Moscow’s most prestigious scientific institute and the heart of her lover in marriage. Why was she thinking of a silly book at a time like this?

In early September 1989, a young Israeli intelligence officer specialized in computational analysis arrived in Berlin to gather intelligence regarding the political turmoil in East Germany and other Eastern bloc countries. On Sunday, September 10, he strolled around the city examining remnants of pre-war architecture and lush green gardens. In a small park a few blocks from the Brandenburg Gate, he came upon a Sunday market consisting of two dozen wooden carts covered with a variety of miscellaneous products—delicious looking pastries, tourist trinkets, maps and picture postcards, handicrafts, fake Rolexes and the like. He passed them by and came upon a bearded old vendor with a meager assortment of used books in English, French and German. The young man spoke all three languages fluently, so he paused to spend a few minutes in the shade of the vendor’s canopy browsing the titles. There he came upon a brown leather-covered book with no discernable printing on the spine or cover. Curious, he picked it up, opened it and read the following lines:

Knowledge is power. Complete knowledge is power to accomplish without negative consequences or side-effects. Such knowledge is unfailing.

Whoever heard of accomplishments that had no negative side-effects, he thought. His entire job was to anticipate the negative fallout and collateral damage arising from every act of his government. This passage seemed to imply that side-effects were the result of incomplete knowledge. But he knew that Israeli intelligence was among the best in the world and that had never been good enough to escape untoward consequences of every new initiative. He read a little further and was even more intrigued by what he read, so he reached into his jacket pocket for his wallet. It was only then that he realized he had left the wallet and his cell phone in his other jacket at the hotel. He looked at his watch and saw that it was just past three. There was plenty of time to walk back to the hotel, get his wallet and return to purchase the book. He told

the book vendor that he would return within an hour and walked off toward the hotel. When he got to the hotel, he found an urgent message waiting. It instructed him to meet his CIA counterpart immediately. He hurried over to the US military complex and was handed a copy of the latest intelligence report. What he read left him speechless. It predicted the imminent collapse of the East German government and the possible disintegration of the entire Eastern bloc behind the Iron Curtain. As he studied the report, breaking news announced that Hungary had opened up its borders to East German refugees. Thousands of Germans began fleeing through Hungary to Austria. The impenetrable fortress of the East German communist orthodoxy was shaken at its roots.

On a cold wintry day in early February 2004, a twenty-five year old Hispanic man with a clean-shaven, intelligent face walked into Shakespeare Books at the corner of Telegraph Ave. and Dwight Way in Berkeley. He spent an hour browsing the shelves systematically from one end of the store to the other. It was difficult to imagine what he might be looking for. The movement of his eyes over the titles was so swift, that he could not possibly have read them each in turn. A sales girl had noticed the man walking up and down the aisles. When she approached to offer him assistance, he held up a colored sketch of a book in an old brown-leather cover. She asked him the title of the book and he merely shook his head. Then she asked him the subject matter and he replied in similar fashion. Eventually the store manager came over and tried to engage the young man in conversation, but he quickly discerned that the man spoke little or no English. The manager shifted to Spanish and learned that the man was looking for a book that had been lost by his employer and he had hoped that it might turn up for sale at a used bookstore. The book had sentimental value and the employer was eager to get it back. The manager promised to call the man if a book of this description was brought into the shop. The man left his phone number and departed.

The young man walked across the street to Moe's Books. He knew them all. This was the third time he had been through Berkeley in the past six months. Previously he had remained inconspicuous by walking very slowly through the aisles, but he found it took much too long to complete a store that way. Now he was learning to do it quickly and gain the cooperation of the store staff without raising their suspicions. Why should they be suspicious? All he wanted to do was recover a lost book for that beak-nosed man named Simon who refused to tell him anything about the book except a description of its appearance and the fact that it had no title or author.

Diego, for that was the young man's name, had wondered at first why Simon would choose a person like him for this job. After all, he could not read a word of English, except for the street and shop signs. He was glad for the work. It was better than gardening or picking grapes in the vineyards. The hundred dollars a day Simon paid him had sounded very good at first, until he realized how much he had to spend on travel moving up and down the West Coast. It was the prize that made it worthwhile—twenty-five thousand dollars in cash when he finds the book. That was worth working and waiting for. Simon had assured him it was around here somewhere and that sooner or later it would come up for sale. If so, Diego intended to be there when it did. He often wondered what could be so special about the book that Simon would pay twenty-five thousand dollars to get it back. The man must be much richer than he looks, he thought. These gringos squander their money on so many useless things.

Twenty minutes later Diego rushed out of Moe's in a high state of agitation. He was elated. His faith and perseverance had paid off. He pulled out his cell phone and called Simon. Yes, he was positive. The book had been seen here a few days earlier. It was found by a white male with sandy hair around thirty-five years old of medium height in a Cal sweatshirt. The sales girl said she had seen the customer several times earlier, so he probably lived in or around Berkeley. That was all they could tell him. The manager had promised to call Diego if he saw the man again. Diego asked Simon what he should do next. Simon simply replied, "Find that man." Diego put away his phone and wondered how in the world he was supposed to do that.

Simon put down the phone. At last, a concrete lead. It had been four full years since the last one at a conference marking the dawn of the new millennium. Reflecting back on it now, he had lost count of how many conferences he had attended, books he had read, and articles he had scanned looking for a clue since then. Now he could call off the others, those dozens of people who like Diego were roaming bookstores in the major cities of the world with absolutely no idea of what they were looking for or why. He had employed a desperate and costly strategy. But it was a mere trifle compared with the value of the prize and it had finally proven its worth. A feeling of self-satisfaction came over him at his own sound instincts. *The Book* could have surfaced anywhere, but he had studied the patterns and concluded that California was the most likely. Yet, who could imagine it would surface in the very same place—the very same bookstore—twice in exactly forty years? He laughed at Diego's bewilderment when he had told him to find the man who bought

it. It was Simon's private joke. He did not need Diego for that. He had other ways and he was confident that sooner or later they would lead him to it.

Simon reached for the phone. Finally, he had something substantial to report. His boss would be very pleased with him.

PART 1: THE QUEST

There is only one process of accomplishment, one process governing all creation—individual, collective and universal. It is the process by which the finite reveals the Infinite.

The Book

1. The New Religion

Each of us interprets events from the perspective of our own consciousness. For those who worship or idealize the past, the millennium marked the end of history or was viewed as a herald of Armageddon. For those who regard history as a series of ascending steps from darkness to greater light, it announced a new beginning. The futurists constituted the majority. Having survived two world wars, a Great Depression, and a forty year cold war presided over by sixty thousand nuclear warheads, most people considered the year 2000 as an occasion for ecstatic celebration.

This was especially true in the USA, the self-declared victor in the Cold War, the sole superpower and world's economic engine. Eight unprecedented years of rapid growth and employment generation proclaimed America's supremacy. Europe was still struggling to adjust to the fall of the Berlin Wall and the reunification of Germany. Unemployment was still high there. The threat of massive immigration from the East generated alarm. The European Union, which was to become the rallying point for the future Europe, had not yet become fully conscious of its strength and its destiny. China and India were awakening, but it would be three or four years before the real speed and magnitude of their ascent to wealth and future power became fully apparent. In fact, perceptions were going to change radically over the next decade as the true significance of the European experiment and the resurgence of Asia advanced.

There was still another year to go before September 11 would rudely awaken Americans to their own vulnerability. It would be another seven years before environmental campaigners such as Al Gore finally got their message across that climate change was a meteor headed for earth, like the one in the Bruce Willis movie, only one that all the fire power in the US arsenal could not destroy or divert. The second Gulf War had not yet entangled the USA in an inextricable quagmire, where the future fought with the past for the right to exist. Crude oil prices had not yet rocketed from twenty five dollars to hundred dollars, as they would following the collapse of Saddam Hussein's dominion. The subprime mortgage crisis had not yet reached the US financial system and sent shock-waves of human fallibility and vulnerability around the world. The iPod had not yet been invented. And, of course, that was before anyone had ever heard of AIS⁹ or *UNIAC*.

The new millennium commenced with a euphoric explosion of new ideas, expansive energy and unshakeable faith in the future. Never before had the prophets of optimism and visionaries of utopia had such strong and rational grounds for hope. The brightness of a millennium supernova relegated everything else to the shadows. At the moment when the clock struck midnight, all eyes were on America and all American eyes were on the Market. The US economy was enjoying an unprecedented expansion. On January 14, the DOW reached a new historic peak of 11,722, more than hundred times higher than on this same day a century ago. America was in the midst of the greatest stock market boom since the 1920s. The Dow had risen 370 percent since the end of the Cold War, roughly equivalent to its rise from the end of WWI until the Great Crash. But crashes were a thing of the past. Economists were smarter now. After the humiliating defeat of Communism, no one could any longer lack faith in the power of the Market and the financial geniuses at the Fed. Wall Street visionaries predicted that this was only the beginning. Unable to tell a boom from a bubble, in 1999, *Dow 36,000* and *Dow 40,000* were published and acclaimed, financial analysts eager for business, only to be followed two years later by a more accurate pinpoint forecasting model predicting *Dow, 30,000 by 2008*. Obviously, the science of computer prediction had made great strides in those two years.

Technology stood at the heart of the American dream. There was a revolutionary spirit in the air as challenging to social convention as those that had ever played out in parliaments or on city streets, university campuses or hallowed battlefields. But this was a revolution of a different sort that performed in a different world, a virtual battle in the world of cyberspace. The dot.com boom began as a slow ascent in the mid 1990s. Over the next five years the technology-heavy NASDAQ composite index doubled and confidence in the future of technology soared. Quickened by enthusiastic anticipation of the new millennium, the NASDAQ rose by 250 percent in 1999 to reach a peak on March 10, 2000. On January 11, America Online, an internet pioneer, acquired Time Warner, the world's largest media company. If any further proof were needed of what the future held in store, the Super Bowl XXXIV in January 2000 featured seventeen dot-com companies that each paid over two million dollars for a thirty-second spot. In 2000 alone, venture investors poured nearly ninety five billion dollars into technology start-ups. The new economy was born with a roar.

From this cauldron of excitement and anticipation many things were born—new ideas, new products, and even new religions. Ever since Leonardo da Vinci drew his sketches of submarines and flying machines, ever since Jules Verne's *Journey to the Center of the Earth* and *20,000 Leagues Under the Sea*, there had always been visionary prophets like Steve Jobs who passionately proclaimed the liberating power of

technology. The doomsday prophets who predicted that the world would stop at the stroke of midnight on January 1, 2000 looked ridiculous when stock exchanges, hospitals, airlines, power grids, governments—even television shows—continued functioning as normal. Didn't that mean they were wrong about everything else as well? Never before had the growing number of electro-mechanical geniuses been heralded as they were when everything worked normally after the clocks struck midnight ushering in the new millennium. Surely this was sufficient proof that God is really a great Mechanic and the universe a glorious Machine. The insidious monster, Y2K, had been vanquished by a new breed of heroes, the chipmakers and code writers. The last fortress of Satan, a tiny segment of defective computer code, had been driven from the world.

Technology had always been worshipped in America, a land that was too big for its modest population to manage without assistance. What better help could there be than machines that would do precisely what they were told to and never make a demand for higher wages or better working conditions? Europe had invented modern science. America put technology at the service of humanity. Until recently, that technology had been the servant of capital and the technologist served at the will of the industrialist. No more. Finally, the engineer could assume his rightful place at the pinnacle of power. A new breed of young, techno-savvy entrepreneurs were remaking the world and the world was working better for it.

The evangelical religion of technology had many different kinds of advocates, each peddling his own miracles to mesmerize the masses—a religion of the machine replacing the religion of man. Atomic physicists promised to unravel the strings of energy that bind everything together and foray into the unknown zero point field, while astrophysicists laid bare the entire course of history from the Big Bang to Eternity and finally revealed the Creator's grand design. Geneticists promised to clone better versions of ourselves, while biotechnologists offered to conquer disease, aging and, perhaps, death itself. Networking engineers were in the process of wiring the earth for human unity. Nanorobots were at work fashioning new materials and eliminating the need for labor.

Crowning them all, at the pinnacle of the highest peak looking out into the most distant future, were the AI visionaries—the magicians of Artificial Intelligence. Stanley Kubrick revealed the coming dawn forty years ago in: *2001: A Space Odyssey*, when he portrayed a computer in the process of evolving into a human being. So what if Hal was a bit neurotic? Then before he died, Kubrick inspired Steven Spielberg to improve on that vision by giving us the perfect child, a machine who dreams and loves. The release of Larry and Andy Wachowski's *The Matrix* in 1999 presented a very different vision in which conquering machines created an artificial world for human beings, but regardless of whether man or machine won the war, the advocates of AI were positioned as the visionary leaders of the future. These were indeed heady times.

A host of visionary events celebrated the dawn and spirit of the new millennium. Some were widely publicized, glamorous extravaganzas, others more sober affairs known only to a bare few whose thoughts and acts so profoundly influence our lives without our being aware of it. From January 5 to 7, the world's best minds in the field of artificial intelligence gathered in Fort Lauderdale, Florida to attend the Sixth International Symposium on Artificial Intelligence and Mathematics. The world-at-large took little notice of what was said. There was too much to celebrate just then to think seriously about the future. But events that occurred behind the scenes during those three days were to change the course of human history—and much sooner than anyone could imagine. The conference attracted a motley assortment of techies, hackers, math wizards, bio-technologists, neurologists, psychologists, actual and would-be philosophers, and new age true-believers of every description. Among them were a handful that were destined to shape humanity's future. Further revolutions were in the making.

2. The Generals & the Battlefield

Every movement has its spokesman. Every new religion has its prophet. What would the American Revolution have been without Thomas Paine, or the French Revolution without Rousseau and Voltaire? AI visionaries were nearly unanimous in proclaiming Benjamin Dent as their self-appointed spokesman and leader. Dent was a towering figure, both physically and intellectually. His students at MIT sometimes joked that having a discussion with Dent was like playing chess with Deep Blue, IBM's chess playing computer. The professor always seemed to be ten moves ahead and instantly ready to respond to any and all possibilities. Dent was a dominant figure on campus, as Professor of Philosophy and head of the Department of Brain and Cognitive Sciences. He held a double PhD in philosophy and psychology with minors in biology and neuroscience. While many thought this combination of disciplines an anomaly, Dent considered all three as dimensions of a single subject, the science of Reality. And like the dedicated scientist that he was, he was determined to consider the object of his study from all possible sides. Due to his prodigious learning, clarity of mind and power of expression, few academics were willing to face him either in a conference hall or on national television. A discussion with Dent was best restricted to a quiet exchange in his office or over lunch. For in addition to his intellectual capacities, he had a strong predilection for publicly humiliating those who dared disagree with him. But that rarely occurred now. His reputation always preceded him. And if it did not, a quick glance into his intense, confident eyes was usually enough to deter all but the boldest from venturing to joust with him.

Over the past two decades Dent had constructed a formidable theory of AI founded on the most recent developments in the biology of life, cognitive neuron theory, computer science, neural networks, and chaos theory. Few of his peers had sufficient breadth of knowledge to speak intelligibly in all these disciplines, so Dent was always at an advantage. Wherever he encountered strong opposition in one field, he would switch with facility to another and surround his opponent with concepts and terms with which he was not sufficiently familiar to debate. Dent was the leading advocate of what is known as Strong AI—the view that the human brain is nothing but a sophisticated computer and that in a short time electronic computing devices will be able to replicate, replace and exceed all the properties and capabilities of human consciousness. The cinematography of Kubrick, Spielberg and the Wachowskis embodied that view, whether they agreed with it or not.

Dent was a dominating figure, but he was not alone. There were a few who dared and had the capacity to meet him head on and remain standing at the end of the encounter. Of these, the foremost was Joseph Stearne, the distinguished Professor of Philosophy at UC Berkeley. The two men were as different as the world views they held. Stearne had a doctorate in Philosophy from Cambridge University, the other Cambridge across the Atlantic. But it was more than water that separated them. Where Dent was aggressive and emphatic, Stearne was receptive and empathetic. Dent was an eclectic renaissance man who studied and knew about developments in every related field of science and could weave together facts from multiple disciplines into a seamless fabric within seconds. Stearne was thoughtful and slow to respond and his response always had more depth than breadth to it. Dent tried to extend the scope of his purview to encompass the entire surface of existence. Stearne plunged deep into a problem searching for the first principles which he believed related and united all knowledge and all fields of existence. Dent had the mentality, though not the personality, of Star Trek's Captain Jean-Luc Picard, ever eager to explore new uncharted regions of outer space; whereas Stearne's explorations were confined to the human sphere and the inner workings of his own mind. Dent was the universal wanderer in the far off galaxies of technology, but his thought and consciousness were founded and firmly rooted in modern American materialistic science and never strayed far from home. Stearne travelled widely and was honored wherever he went, but the purpose of his movements was more to learn than to speak. Whereas Dent was always hungry for new facts and new gadgets, Stearne was ever eager to encounter new people and discover more of his shared humanity. If to Dent, God was a mechanic and this universe a machine, to Stearne man was a God and this universe a spiritual marvel.

Stearne was as great an admirer and as strong an advocate of artificial intelligence as Dent, but their positions were in most ways diametrically opposed. Dent viewed AI as a reality in its own right, a outcome of natural evolution with its own destiny, almost independent of man. Stearne was a spokesman for Weak AI. He viewed AI as an instrument or a tool fashioned by human beings to extend the efficacy of their senses and their power. For him, AI could never exist for or by itself. He laughed heartily at the notion of machines conquering humanity. "If the machines come out on top," he often said, "it will be because human beings voluntarily submit to their own creation, not because the machines decide to take over. We human beings have a funny habit of becoming slaves to the things we invent for our use—money, government and

technology. Why should we fault our leaders for acting like demigods, when it is we who elect ordinary men to high position and then insist on attributing to them extraordinary capacities they have never exhibited in order to glorify our own collective self-image? Many accuse man of creating God in his own image, but a more just accusation would be that we elevate our own creations to the status of gods and proceed to worship and surrender to them.”

Dent was the champion of the youngest and most exciting of the sciences which promised to discover the mathematics of life and consciousness in matter. Stearne was a proponent of the oldest, least glamorous and least popular of scientific disciplines, rational thought. People who listened to Dent came away stimulated, fascinated and often mesmerized by the wonders he portrayed, though the more sensitive often left with an almost imperceptible feeling of discomfort or sadness which they were unable to describe or explain. Those who met Stearne almost always left with a smile on their faces and a feeling of indefinable warmth and expansiveness. The learned professor could be forceful and even overpowering, but the force was always delivered by a velvet covered hammer that quietly and gently penetrated into the depths. Stearne relied more on mental clarity, humaneness and humor than on a plethora of hard facts and mechanical devices. He was almost always patient, but he often admitted his intolerance for one thing—arrogance—and in characteristic fashion would add it was because he was so very arrogant himself.

The Fort Lauderdale conference organizers had worked for nearly a year planning this event. They were determined that no one in the field of AI would ever forget this week. The most eloquent exponent of Strong AI was to meet and battle with the most respected advocate of Weak AI. In fact, the two men had been battling for nigh on thirty years through distinguished academic journals, in conferences and across the vistas of cyberspace. But they had never before met in person and wrestled with one another from a common podium. How precisely the organizers had done it, they never revealed. When word spread, conference registration soared three fold and the organizers had to scramble to find a larger facility to accommodate the three thousand people who were expected to attend from all parts of the world. Never before had so much intellectual processing power in the field of AI been concentrated in one place on earth.

The organizers planned their campaign carefully. As a millennium event, they insisted in focusing on the big picture, a vision of things to come. They dedicated the first of the three days to the Strong AI view and billed Dent as the valedictory speaker in the late afternoon, to be preceded by leading advocates, primarily drawn from American universities. Day Two was allocated to their opponents, mostly from Europe and Asia, for finding them in the USA was getting almost as difficult as locating Jews in the Vatican hierarchy. They mainly came from France, Germany and Russia. Ironically, most scientists from India, where one might expect to find support for a more human, less mechanistic view of consciousness, seemed heavily biased towards the strong position. Joseph Stearne was an American anomaly in the midst of this group, but he stood out as its foremost and most formidable exponent, and was appropriately allotted the most prominent place on the agenda. The first two days were the warm-up. The battle was set for the third day. Dent and Stearne would meet each other face to face for a three hour debate, physically juxtaposed to one another on the stage as they were intellectually on the issues.

3. The Maestro

The first day of the conference went as expected. It was dazzling and euphoric. The average age of the audience could not have been more than twenty-seven. Five plenary presentations and a dozen parallel workshops charted out the gains made in the application of AI over the past decade in computer based trading and market modeling, genetic engineering, medical diagnosis, criminology, intelligence gathering and analysis, social profiling, industrial robotics, micro-computing, nuclear physics and astrophysics, imaging and mapping systems, environmental modeling, and scenario building for the spread of terrorism and nuclear weapons. Some speakers used stunning real-life photos, computer-generated video images and animated illustrations to drive home the fact that AI was very real, here-and-now technology that was rapidly transforming the way human beings work. Others methodically probed the outer boundaries of current science to show that eventually all the existing limitations would be overcome.

A presentation on Beauty was typical of this type. An Australian scientist demonstrated an AI facial recognition system that could reliably identify beautiful women on five different continents - as reliably as the people on those continents, at least. The computer went along with the majority 73 percent of the time, whereas ordinary citizens agree with one another only 68 percent of the time. The presenter conceded that his system was not yet able to predict beauty on a universal basis. When one hundred people from different nations were mixed into a common pool, the computer went along with the majority only 21 percent of the time, whereas a cross-section of people from different countries were in agreement 57 percent of the time. Perplexed, the scientist attributed this result to a methodological flaw. A tall, strikingly attractive black-haired woman in the audience suggested an alternative explanation. National standards of beauty may fall within certain stereotypes relating to physiognomic characteristics such as nose length, thickness of lips, shape of the face, height of the forehead, and skin color. Whereas, a universal standard of beauty would depend more on a perception of energy, vitality, brightness of mind and personality, gracefulness and mystery, i.e. attributes of human consciousness rather than physical characteristics. The woman so perfectly embodied the characteristics of universal beauty she enumerated, that few were prepared to disagree with her. The presenter discerned that he was being subtly challenged by a proponent of Weak AI, so he passed on to another question.

He was followed by a mathematical criminologist who sounded like he had served as a consultant to *Numb3rs*, the TV crime series. His presentation covered a vast landscape ranging from probability theory to personality profiling. Stearne sat unobserved among the audience whispering quietly with a young blond woman with her own claim to universal beauty. He was very familiar with the behaviorist school of psychology dominant at Berkeley and easily grasped the underlying philosophy of this speaker's approach—human personality is the product of physiological conditioning. Once you have identified all the inputs, projecting and modeling behavioral outcomes was a relatively simple matter for advanced AI systems. The speaker cited a long list of successful applications of AI for crime detection and prevention, though Stearne observed that none of his examples actually illustrated the successful modeling of human behavior. They were almost all based on probability theory. The argument and the evidence were both compelling, but they did not relate to one another.

Other plenary speakers focused on environmental scenario building and military security and intelligence. A CIA senior analyst deftly handled the intelligence topic, sketching the outlines of an AI system that could predict the behavior of rogue nations, anticipate terrorist attacks, and reduce the threat of nuclear attacks. We now possess the wisdom of hindsight to view these claims with skepticism following September 11, the erroneous reports on Iraq's nuclear program and the optimistic scenarios put forth by the Administration for a quick victory for democracy in that country. In January 2000, these claims met with wild approval. But there were dissenters. An Israeli intelligence office challenged the efficacy of AI systems to decipher the Middle East crisis. An American scenario planner working at a Washington think tank pointed out that not a single AI system had anticipated the sudden end of the Cold War eleven years earlier and none had come forth with a viable solution for ending violence in North Ireland or Kashmir, let alone in Palestine.

Towards the end of the day Edward Bennet, a hedge fund trader from Rothman & Lazurus, whose elegant attire and high tech presentation exuded wealth and success, spoke about financial modeling. The speaker defended computerized trading against the frequent accusations raised by opponents—none of whom were present—and largely credited America's robust economic growth and booming financial markets to the application of AI in this field. At the conclusion of his talk, a tall handsome thirty-something Asian Indian challenged the speaker's view and cited evidence that computerized trading systems had only served to disassociate financial markets from underlying economic fundamentals, with potentially disastrous results

down the line. Bennet merely pointed at the dot.com boom as compelling evidence in favor of his view and left the podium.

By 4:00 pm the mood of the conference was exhilarating, bordering on intoxication. When Benjamin Dent was introduced, expectation rose to a peak and the hall fell silent. Dent began in his characteristic fashion, weaving an intricate web of concepts, theories, facts, applications and examples drawn from a dozen different fields into a magnificent and harmonious symphony, exuding power and grandeur. And as he wove, his audience was spellbound and uplifted, as if inspired by the glory of God's word brought down and proclaimed by one of Christ's living apostles. Though his voice lacked the smooth, melodious undulations of a black Southern Methodist preacher who sang rather than spoke his sermon, Dent's speech resonated with clarity, strength, conviction and faith in what he spoke. His harmony was woven of thoughts more than of sounds, but the rapid oscillation of those thoughts between fact and possibility, past achievement and future prospect, science and science fiction created its own unique cadence, rhythm and melody in the minds of his listeners, perhaps not unlike the music of the spheres heard in meditation by the early astronomers.

Gradually the consummate maestro brought his presentation to a crescendo. He became for a moment the living embodiment of a glorious power, a power to conquer the mysteries of nature, a power to transcend even the greatest of limits, the limitations of our humanity. Nothing could stop the forward step of progress. If people were ignorant, weak and fallible, they were also imaginative and courageous enough to create something that transcended their own limitations. Then in a whirlwind closing argument, he tied everything together in the simplest of terms that left everyone feeling indeed that the highest truth is self-evident, that the greatest mystery can be reduced to a matter of commonsense. He drew on the most recent discoveries in the science of complexity to reveal the natural tendency for the evolution of emergent properties without any need for postulating a conscious creator working behind the scenes. Then he cited the latest developments in biology to support his view that life can best be regarded as an emergent property of material systems. He heralded the achievements of cognitive neuron theory and neural networks as incontestable evidence that consciousness has its roots in the electro-chemical properties of the brain—that thought, mind and soul itself are emergent systems of matter—the greatest manifestation yet of Nature's capacity for creative evolution. As a final culmination and close, he followed the vector lines of these three great discoveries far into the future to the point where they unite and become one.

“What lies at the center of the convergent focal point?” he asked. “Artificial Intelligence. AI is the ultimate science of synthesis and the final product of human endeavor. That point marks the end of human evolution as we know it and the beginning of a new phase in the endless unfolding of universal Nature. We are on the verge of the greatest of all scientific discoveries, the formulation of a Theory of Everything that unifies, synthesizes and integrates within a common framework and set of universal principles all the processes of nature. By this theory, the reality of matter, life and consciousness are revealed as various expressions of the same natural laws and the same principles of variation, a perfect marriage of Chance and Necessity. Those who fear the rise of a deterministic, all-determining science need have no fear. For we now know that behind the apparent order of the universe looms CHAOS. That chaos forever guarantees our freedom and our individuality, for it makes each object, each moment and each of us absolutely unique in space and time, a random variation on the general theme. *Freedom is the final law.*”

Dent raised his arms in front of him and bowed his head in an expression of humility, signifying the conclusion of his presentation. After a moment of utter silence, a pandemonium of violent applause filled the hall. Hundreds of people rose from the audience and flocked to the podium to intercept Dent before he could depart from the hall. The very air was vibrant with intensity.

Stearne sat motionless in the back of the auditorium anonymous and unrecognized as yet by all but a few. He had listened intently to Dent's presentation and could not help admiring the awe-inspiring intellect and masterful skill of its author. He waited patiently with his lovely companion for the crowd to pass out before him, so he could return to his hotel room and ponder what, he wondered to himself, he would say the following afternoon. What could he say to reach beneath the splendor of Dent's magnificent façade and call to mind among these people the deeper realities of their own existence and experience?

As he rose he noticed a moderately tall, sandy haired young man in his mid thirties—anyone less than sixty had come to look young in Stearne's eyes. The man hesitated at the end of the aisle, looking in his direction, apparently wanting to speak with the professor as he walked to the end of the row. Then he turned and left the hall.

4. A Worthy Opposition

After the euphoria of the first day, there was bound to be a let down. Indeed, the enthusiastic expansiveness was noticeably muted on Day Two, for this was the day dedicated to those with a more modest vision of AI. In the eyes of the Strong AI force, this was the day for people who lacked the vision and lacked the faith to see what was coming. That description was quite apt. Most of the speakers were apologists trying to justify a more skeptical or conservative view or pleading for common sense as an alternative to techno-religious zeal. Their presentations were bound to evoke indifference, disappointment, impatience or even hostility from those who had come for the revelation of a new millennial vision.

Stearne remained in anonymity at the back of the hall quietly listening, looking and waiting. The Indian who had challenged the Rothman & Lazurus trader the day before took the podium. He introduced himself as Vinay Menon, an MBA from Columbia University. When he revealed that he too worked at Rothman & Lazurus but he and his colleague did not know each other, there were peals of laughter in the room. He explained that even within the company there were advocates of both Strong and Weak AI. Yesterday, the hedge fund trader had taken one position. Today he would argue the other. Menon explained that his work was to develop new AI systems that could maximize returns for clients. His presentation lacked the glitz and absolute surety that had made his colleagues' presentation so entrancing. He excused himself by explaining that only certified professional Wall Street Traders like his colleague were gifted with infallible foreknowledge of events. Again the audience laughed and began to warm to him. Then he came to his central thesis. "The Strong AI view holds that successful trading only depends on keeping one step ahead of the competition in a ruthless zero sum game, where one person's gain is someone else's loss and vice versa. According to this view, successful trading is based on probability analysis or lucky guessing. My own view is that financial systems have been developed as a means to promote economic growth. Successful trading is that which enhances the value of the market and supports the development of the underlying economy, rather than robbing it of its value and blindly rewarding speculative fever. In my work I have been testing an alternative hypothesis, the hypothesis that maximum gains accrue to each participant in the system by taking decisions that provide maximum benefit to all. I realize that probably sounds like textbook pabulum or naivety of the real world. It is extremely difficult for human beings to think from someone else's point of view, no less from the perspective of the whole. My objective is to develop an AI system that goes beyond even that and views each individual decision from the perspective of every other participant in the system. I base myself on the premise that this will generate maximum returns for all."

Stearne sat up and listened intently from his anonymous seat at the rear of the hall. Few people in the audience seemed to comprehend or appreciate the speaker's viewpoint. They were accustomed to dealing with technological acronyms, not real ideas. Finally, someone was trying to *think*. The speaker closed his presentation with a statement that left most of the audience bewildered. "The crucial challenge in building effective AI financial systems," he said, "is the problem of monetizing trust. Trust is the foundation and fundamental resource on which our money and financial systems, as well as our economic and political systems, are based. If AI is to make a positive and constructive contribution to the country's financial strength, it must be capable of identifying and developing untapped pockets of trust in society. Personally, I am yet to meet a computer that even understands what trust means, so forgive me if I do not share the enthusiasm of those who believe that we have arrived at humanity's final destination." His words fell like a wet blanket on the exuberance of the uninformed, but there were a few in the audience who recognized their value, endorsed his views and applauded loudly.

There were some other interesting speakers on the morning of Day Two. An Israeli named Kurt Levin came from Technion, the highly distinguished Israeli Institute of Technology in Haifa, source of seventy percent of Israel's high tech entrepreneurs. Levin discussed the application of AI for profiling terrorists. He challenged the confident views presented by the Pentagon security analyst the previous day, who maintained that they were in the process of developing a system capable of accurately identifying probable terrorists so that precautionary, preemptive action could be taken, as Tom Cruise did in *Minority Report*. Levin argued that the whole approach is flawed. "This approach assumes that terrorists are a particular type of individual that exist independent of the world in which they find themselves. It repeats the Cartesian error of regarding the object of study as separate from its environment, like the lovers on a reality show who are asked to behave spontaneously before a national audience." Levin went on to explain that terrorism is a social rather than merely a psychological phenomenon. Terrorists are a product of the social circumstances in which they live. Beyond even that, they are products of the world in which they live. Terrorism in Pakistan and New York is linked to the fact that Palestinians do not have a homeland. It is part of a wider *gestalt*, as surely as the murder of Jews in Nazi Germany was a reflection of German society as a whole at that time. "Ultimately, if we are going to build a dream machine that can profile terrorists, it will

have to include the profile of those to whom the terrorists are reacting and responding. Terrorism is a mirror reflection of the world in general. An effective AI system against terrorism must profile that wider world.”

Again the applause was limited, but those who appreciated did so enthusiastically. Stearne was among them. Rarely had he attended a conference where people thought so profoundly. A clear pattern was emerging in all these presentations that set apart the advocates of the Strong and the Weak. The Strong believed in the power of technology; given the right hardware, anything is possible. The Weak believed in the power of intelligence and the power of humanity; at the heart of AI was an understanding of human consciousness, rather than an understanding of machines. For the first time Stearne was glad he had accepted the conference invitation. He was beginning to enjoy himself.

Next came a scenario planner and futurist named Raymond Berger from the Arlington Institute in Washington DC. He spoke about AI systems for conflict avoidance and resolution. Like Levin who preceded him, Berger was highly skeptical and critical of the Pentagon approach to forecasting conflicts. Like Levin, he focused on ideas rather than technology, theory rather than mechanism. “The capacity to prevent or resolve conflicts presupposes knowledge of how conflicts are created and why. It also presupposes an understanding of peace, for conflict is only a temporary interruption in a normal state of peace, just as speech is an interruption of silence. Without a theory of peace, we cannot have a valid theory of conflict. Without a theory of conflict, we cannot fashion an AI system to forecast or resolve conflicts. Like my colleagues from Technion and Rothman & Lazurus, I too believe that the context is as important as the thing we are studying. Whether it is financial markets or terrorists or conflict, our systems must be based on knowledge of the whole, not merely a minute dissection and statistical stratification of the part.” Then he summed up with a statement that seemed only slimly connected with the theme of his speech but obviously arose from deep personal conviction. “The present evolutionary crisis we are facing arises from a disparity between our limited faculties—mental, ethical, and spiritual—and the technical and economical means at our disposal. Without an inner change, we can no longer cope with the gigantic development of the outer life.” Apart from Stearne and the two previous speakers, only a few people applauded. But that was natural, Stearne told himself, profound thought is not for everyone.

Stearne recognized the next speaker as the sandy-haired young man who had stopped at the end of the aisle and appeared to be waiting for him the previous day, before he thought better of it and left the room without speaking. Daniel O’Hara was a researcher at Xerox Parc in Palo Alto. He spoke on the nature of intelligence and rationality, a subject of deep interest to the professor. “The key to AI lies in the word intelligence, not in the word artificial,” he began. “How can we create something we know so little about? How can we create artificial systems of intelligence when we understand so little about the nature of human intelligence? In response, others here have argued that computers are more rational than people. A plausible and obvious truth, no doubt, to those who pronounce it. But, I would like to ask them, what do they mean by rationality? I believe they are confusing it with the word logic. The essence of rationality is to judge things impartially, not from the perspective of our personal interest, motives, limited experience or inherent prejudices. Obviously computers are not susceptible to the subjectivity and prejudices of human beings, but does that mean they are rational? Logic is a linear system of argument which is internally consistent, but may be totally divorced from the reality of the world around it. It is logical for an AI system to conclude that participants in this conference have come because of interest in the subject matter. But rationality requires us to factor in the beautiful Florida weather, the proximity to Disney World and this Saturday’s bowl game for the National Championship. Rationality is more than an internally consistent feedback system. It requires comprehension and knowledge. It requires insight into life and human nature. It may be logical for a computer to conclude that a woman who tells you she is not hungry has already consumed sufficient food. But it is rational to consider that either she may be on a diet or may be angry with you for something you just said—or have not said.” Laughter broke out in the audience, especially among the women present. O’Hara concluded, “Logic is the ability to see things objectively, which means without taking into account human sensibilities, which are not logical. Rationality is the ability to see things from the view point of other people and from the perspective of the whole, which requires an intimate knowledge of human nature. Computers can be logical, but to expect them to be rational is not rational.”

A hushed silence filled the room. Those that understood O’Hara’s argument were of two minds. Some rejected it out of hand. Others felt disheartened, disappointed or even angry that they had been prematurely awakened from a techno-lovely dream. But whatever they thought or felt, it was soon forgotten as the next speaker was introduced. Anya Serova, a PhD in Mathematics from Moscow’s premier scientific institute, headed a special project at NASA trying to model human attitudes in order to improve the profiling of future astronauts. Stearne immediately recognized her as the attractive woman who had challenged yesterday’s presentation on facial beauty. Her own face was exquisitely alive with energy, vitality, intelligence and feminine grace. She had a kind of girlish Kiera Knightley smile combined with an

expression of maturity far beyond her years. Her presence captivated the audience more than her words. But those who looked beyond appearances found something more valuable than a lovely face. She spoke about the difficulty of converting the subjective experiences of human consciousness into objective mathematical algorithms that could be incorporated in AI systems—the difficulty but not necessarily the impossibility. “Numbers are only symbols,” she went on to explain. “Already we rely on a wide variety of numbers to reflect qualitative states. Health is a quality or property of the body, yet modern medicine has developed a wide range of measures to help us detect it or, at least, its opposite. Product quality is a subjective notion, yet we have evolved sophisticated systems to identify and improve it. This morning Mr. Menon aptly explained that trust forms the basis for our monetary system and the entire economy. Trust is an intangible quality, yet we have formulated elaborate systems to assess trust-worthiness for consumer credit. The key to building effective AI systems is to identify the underlying qualitative properties or values on which successful outcomes are based and to design scales to quantify those qualities before we try to program them.” She ended with an engaging smile that stirred many hearts and received resounding applause.

Stearne listened to Dan O’Hara and Anya Serova with a combination of admiration and delight. Perhaps he had become prematurely cynical about humanity’s future. Perhaps, after all, it had been worthwhile fighting all these years to free a few minds from the shackles of social conditioning that had encumbered the pursuit of knowledge by the scientific community, which had become much more of a social institution presided over by careerism, peer pressure and conformity, than an institution of knowledge seekers.

The time had finally come and whole room was expectant. As he walked to the podium, his step was lighter and more energetic than in years. He felt an inexplicable exhilaration very different from the scintillating vibration generated by his opponent. What he felt was hope. The atmosphere in the auditorium became quiet and concentrated in sharp contrast to the excitement of the previous afternoon. This is a natural result when thought replaces sensation, but it was not entirely welcome to many self-proclaimed intellectuals who preferred things to ideas, doing to thinking and technology to human beings. At the same time Stearne could sense the audience’s mental fatigue. They had already been subjected to too many profound thoughts for one day. He could not hope to win them by arguments. He needed another tact.

Stearne’s reputation preceded him. Even the greatest admirers of Benjamin Dent had a healthy respect for the don from Berkeley, as they referred to him in private. Even those who violently disagreed with his views on artificial intelligence found other reasons to admire him, most notably his role in the Free Speech Movement of 1964. Stearne had been the first among the faculty members at Cal with the courage and conviction to cross the line and stand with the students against the administration, to side with freedom against authority.

Just then Dent entered the hall, walked up to the podium, smiled broadly and offered his hand in greeting to Stearne, then sat down in the front row along with the rest of the audience.

There could be no greater contrast imaginable than that which distinguished the presentation styles of Dent and Stearne. The professor from Berkeley was incapable of showmanship similar to that in which Dent excelled. But he had other tricks in his bag. Dent was at his best when he performed like a symphonic composer conducting an orchestra of one with sufficient energy to direct a hundred musicians. Stearne was at his best when he simply told stories. So that is what he did.

He began by narrating tales about the Freemasons, a secret society born in the seventeenth century and soon taken over by intellectuals seeking a safe place to discuss ideas that might be considered blasphemy by the reigning religion of the day. Steeped in mystical traditions dating back to King Solomon’s Temple in Jerusalem and from the persecuted sect of Templar Knights, these societies were derived from the guilds of masons who moved freely through Europe during the Middle Ages crafting the great cathedrals which we see today. Talk of secret societies and Templar Knights had been enough to capture the attention of the whole audience. As soon as he had accomplished that much, Stearne materialized an impenetrable wall smack in front of everyone’s eyes and made the audience sit up straight. “As my distinguished colleague so eloquently put it yesterday, freedom was the ultimate law of freemasonry as it is of all true science—freedom to think differently and believe what others do not believe. So I ask you, is the theoretical basis of Strong AI based on the doctrine of freedom?”

Stearne paused for effect, as if waiting for someone to respond. He doubted very much anyone would try. Having caught their attention, he tried to win their hearts. “No, it is not. Let us not confuse chance and chaos with freedom. Freedom means freedom of choice. If all is determined by a combination of chance and necessity working out an unpredictable future, where is the room for freedom? Where is the room for Freemasons? Where is the room for science? Everything depends on the answer to a single question. What is consciousness? If consciousness is a product of electro-chemical properties and reactions in the human

nervous system, then the world may be founded on chaos, but it is certainly not founded on freedom. If there is only iron law of nature combined with freak happenstance, we have no freedom, only conditioning and blind chance.”

He stood and looked out at the audience, like a sorcerer incanting a silent spell over the crowd, only this spell was intended to awaken rather than to induce a trance, to create clarity rather than spread obscurity, and to eliminate fear rather than induce conformity. This sorcerer’s only motive was to make people look within themselves for the truth, rather than to look to those around them for something to believe in. “Consult your own mind. Examine your own heart. Dive into the depths of your being to your own soul. Are these simple electro-chemical programmed responses to software written by the blind, stumbling chance force of material nature in her random journey from the Big Bang to AI? If that is so, then the Indian sage Shankara was right when he said the whole world is *maya*, illusion. But if he really believed that, why did he walk across the length and breadth of India establishing religious centers to propagate his teaching? If the world is an illusion, then surely his religious centers and teachings, even his walking, are too. If he was right, why did he perform the rituals at his mother’s funeral? For his mother, her death and the rituals could be no more real than the world. If he was right, or if you believe he was right, kindly explain to me what you are doing here in this room. For if chance, necessity and chaos are the ultimate truth of things, science and the pursuit of knowledge, and all notions of intelligence are only various expressions of *maya*.”

This time when he paused there was a spontaneous burst of applause which began in one corner of the auditorium and gradually spread out in waves until it encompassed the whole room. Stearne doubted very much that anyone knew precisely what they were applauding about. But *he* knew. They were applauding because he had just told them they really matter, that they as human beings are more real than the machines they invent, that they are free!

Having won their hearts, he tried to win their minds as well. That would be more difficult. But he knew that unless he succeeded there, the impact of his words would be short-lived. Soon enough they would go back to seeing and feeling as before. He had to change their thinking. “Let me tell you a story,” he said, fully aware that his whole presentation was a story. “It is a story that begins at the time of Copernicus, Galileo, Leonardo and Newton and ends here today. Imagine for a moment life in the Middle Ages, before the Renaissance, the Reformation and the Enlightenment, before the printing press, newspapers and scientific societies, a time when what was true and what you believed was dictated by church doctrine and interpreted by priests, a time when to question the scriptures was considered a sin and the telescope an instrument of the devil. Now imagine the predicament of those great minds who were also men of faith. They believed in God, but they also believed in what their senses reported and their reason endorsed as true. They were not determined to denounce the church or reject religion. They were determined to find out the truth and they demanded freedom to discover that truth.”

In the midst of the rising crescendo of his argument, Stearne’s eyes happened to meet those of Dent and there was a brief exchange of fire. The professor could not be sure, but he thought he discerned anger and hatred in those eyes. “What would you do under those circumstances? Like them, you would look for some place and some way to start a movement of Enlightenment with like-minded men. Having rejected Biblical or Papal authority, how would you establish an alternative means for discerning truth? You would agree upon objective means of determining what is true. And what truth would you seek by this means? Why, you would seek the only possible truth that can be known by observation through the senses and experienced similarly by many people—the truths of the objective physical world. In doing so, would you conclude that everything that cannot be known by external observation is an illusion or superstition? Clearly you are too rational for that. Would you conclude that sensory data and measurement are the only ways of knowing and all else mere imagination? Not if you were one of these great thinkers who had discerned the mystery of the universe and sensed a greater mystery lying behind it. Why else would the greatest intellects, the greatest rational minds of their age also seek for truth through alchemy, numerology and Cabbalistic lore? Because they knew that all their sense perceptions, all their measures, were only valid for dealing with the grossest material plane of reality.

“Now finally I ask you. Would you reject as unreal everything you cannot see and measure—your own minds, love, aspirations, values—and proclaim that matter and matter alone exists? I hope, that as the representatives of Leonardo and Newton today, you would not make that tragic error, that you will not make it. Just because material forms can be experienced with the senses, just because material processes such as electricity and chemistry can be observed and measured physically, does not mean that matter is all or that everything else is only a creation or extension of matter. It does not mean that life is only a physiological process. It does not mean that consciousness is only an electro-chemical sensory illusion. It does not mean that beauty, love and truth are merely vibrations of nervous impulse. For if it did, then Shakespeare’s

Hamlet, Plato's *Symposium* and Beethoven's *Ninth* are less real than a mud puddle, a stone wall or plum pudding."

Stearne stopped abruptly, smiled modestly and thanked the audience for their patient listening. While resounding applause filled the room, again their eyes met briefly, but this time the shades were down and nothing could be read on either face but the formal politeness which courtesy demanded. The professor had no doubt that he would find out what thoughts lurked in Dent's mind when they met to debate the following morning.

5. Titans Clash

On the evening of the second day, intellectual pandemonium broke out in Fort Lauderdale. In place of blind exhilaration, thought was born. A chorus of opposing viewpoints rose up and clashed like the sound of competing choirs in a music festival, each struggling to outdo the other in power and beauty. The debate spread from the presenters to the audience, from the audience to the hotel staff and casual visitors who had come for the sun. Raging controversy could be overheard in the lobby, the lounges, the restaurants, by the poolside, in the health club, the sauna and the bar, in the elevators and in the halls, keeping people awake that night, not because they were disturbed by the loud sounds of other people's argument, but because they were provoked by the intensity of their own thoughts.

Daniel O'Hara was among those who slept very little that night. Ripples of energy coursed through his body. Streaking comets of light soared across his mind. He tried to think through what he felt, then he thought better of it and tried not to think of anything at all. When neither strategy worked, he tried meditation. What was the sense of meditating when he already felt so full, so rich, so high? Failing all this he went for a brisk walk along the beach and returned to the restaurant for an early buffet breakfast. It was just 6 am. As he walked in, his eye fell simultaneously on two things. Sitting at a table on one side of the restaurant, Joseph Stearne was eating his breakfast and reading a newspaper, alone. Diagonally across the room some fifty feet away, Anya Serova sat down at another table with a plate of fresh fruit and cottage cheese in her hand. If only a person could be in two places at once, he joked to himself. Now if this is the result of blind chance, I'd like to see more of it! Choices. choices. Whoever said we do not get to make choices? Dan quickly gathered a plate of food and turned in Stearne's direction. He was surprised and disappointed to see someone else had already taken advantage of the professor's vulnerability. Dan noted that it was the lovely blond woman who had accompanied him in the auditorium.

Turning in the other direction, he saw Anya still alone preoccupied with a piece of papaya. He walked in her direction and approached her. Just as he was about to ask if he could sit down, that Indian fellow from Rothman & Lazurus, Vinay Menon, approached her from the other side and said something Dan could not hear. She looked up from her melon with laughing eyes and nodded her head, signifying he could sit down. Then she noticed Dan standing slightly to the side and beamed a warm smile of invitation. He too made his request and a moment later they were plunged in an adventure of mutual self-discovery. Dan found himself on the horns of a dilemma as he sat exchanging compliments with his two talented acquaintances. He felt such an intense attraction to this Russian mathematician that thoughts were driven right out of his mind. Yet, at the same time he felt a genuine admiration for the clarity of her mind and a reverence for the naïve sweetness, the native goodness, of the values and intentions she expressed. That was confounded by the presence of Vinay. Polite, charming and humorous, Dan was drawn to this strange combination of sophisticated Wall Street analyst and unassuming Indian boy. Vinay reminded him of Arjuna, Krishna's disciple in the epic *Mahabharata*. Dan could not honestly say whether he was more eager for Vinay to leave or to hear more about his ideas on AI.

Dan glanced over several times at Stearne's table and observed him intently listening to something the woman had to say. He observed the bright Israeli from Technion, Kurt Levin, approach Stearne. Levin was another person worth getting to know. Resolving to look for another opportunity to approach the professor, he concentrated on the conversation with Anya which focused on her work developing algorithms for subjective human experiences. He knew without need of explanation the potential value of that breakthrough, if it could ever be achieved. Many had attempted, but thus far they had all settled for a clumsy attempt to impersonate human consciousness, somewhat like awarding college degrees to raise the level of education in a country without establishing more colleges and admitting more students. In the midst of her explanation, Ray Berger from the Arlington Institute came over and asked if he could join them. Dan had been equally impressed with Ray's thoughtful presentation on peace and security and had a number of questions he wanted to ask. Ray beat him to it, expressing his appreciation of Dan's insights into the limits of rationality in AI systems. No one dominated the discussion because each of the four seemed equally eager to ask questions and learn more from the other three. Glancing down at his watch, Dan suddenly noticed it was nearing 8 am. The others readily accepted his suggestion that they meet together for lunch after the morning debate and continue their discussion.

As the four of them walked together into the conference hall, they could feel the atmosphere bristling with energy and tension. Many had come to Fort Lauderdale in anticipation of today's event. But the feeling this morning went far beyond that. Those who lived and breathed AI as an occupation, a preoccupation and an article of faith came this morning for the ultimate debate. Their meeting today called to Dan's mind the grand confrontation between the greatest English parliamentarians of the nineteenth

century, William Gladstone and Benjamin Disraeli, over the repeal of the Corn Laws in 1846. Like Gladstone, Dent's style of delivery was torrential, eloquent, evangelical and vehement. Like Disraeli, Stearne was urbane, witty and worldly, with a streak of romance and cynicism. It reminded him also of a book he had read about the seven debates between Lincoln and Douglas in 1858 for a seat in the US Senate. There, too, freedom had been a recurring theme, but in that case it was the freedom of black slaves. His imagination stimulated by the lack of sleep, Dan closed his eyes for a moment and thought he could imagine the famed defense attorney, Clarence Darrow, examining William Jennings Bryant, in the infamous Scopes trial reenacted by Spencer Tracy in *Inherit the Wind*. Only in this modern version, it was fundamentalist science that was placed in the docks to defend its superstitious views of the future, rather than a religious fundamentalist defending a Biblical view of creation as Bryant had done in 1925. Dent had a way of impersonalizing every question and issue and elevating it to the plane of cosmic principle or universal truth. Stearne had a way of personalizing every issue and bringing it down to earth to examine its relevance to real life.

There were many different kinds of people gathered in the auditorium that morning for many different reasons. Some believed that AI offered untold opportunities to make money. Others were looking for a career move to a better paying job in a larger company or a more prestigious research institution. Some were marketing AI special application software. Others had come as they would to a revivalists meeting house to preach to the converted or reaffirm their faith in the cause. And then there were an inexplicable few who had another agenda and were after something else. They came to all gatherings of this kind, knowing the chances were miniscule that they would discover the trail they were looking for. One person in particular, unknown to anyone else in the room, scanned the list of speakers and participants and the faces in the audience without exchanging a single word with other conference participants. He was a short, thin man in his fifties, with a frail build, and a lean, angular face. His high forehead denoted intelligence, his square jaw, strength and persistence, his small, dark eyes unreliability. His most distinguishing characteristic was a beak-like nose. He wore the requisite conference registration tag under his suit jacket so it was barely visible to those he encountered. On it was printed his name, Albert Simon. He maintained a mask of dull insignificance that made people forget him immediately, but the perceptive might discern from his rapid eye movements a mind that was ever-alert, always searching. He had not come to talk. He was looking for something.

The conference moderator called the meeting to order, briefly reintroduced the two speakers and explained the rules of the debate. Each speaker would begin with a brief introductory statement. Following that they would address three questions to each other, each responding to the questions put to them in an alternating sequence. Finally, both speakers would accept questions from the audience until time ran out.

Dent had observed his opponent closely the day before and knew not to underestimate Stearne's capabilities. He was one who thrilled to new challenges and was eager for an all-out brawl. Stearne was more circumspect. He had nothing to gain from debate with Dent. He knew well enough he could never convince Dent of his views or vice versa. His interest was in the audience. What he did today might influence the thought and action of many in this room. That was the real challenge facing him today.

In his opening statement, Dent came out shooting from both hips, unmindful of anything Stearne had said the previous day. Like the televised US presidential debates, he knew very well that this type of forum was better suited for sound bytes than for serious thought. Confidence, conviction, emphatic insistence on a viewpoint, a sense of humor and humaneness were far more important than rational argument. Dent was a master of sound bytes. He was in his element. "As I explained at length on Day 1, we are all fortunate to be alive at this moment in history, to be participants in the greatest of all discoveries, the ultimate scientific Theory of Everything. It is not I alone who proclaim it. Look at the roster of Nobel Laureates in Physics and Biology that confirm the same thing. We are on the verge of uncovering the ultimate secrets of life and consciousness encrypted in matter. Complexity Theory has unearthed the secret of emergent properties from which all else arises. Three singularities of Nature explain all else—the Big Bang, the first emergence of Life and the first emergence of Mind. From these three all else follows."

Stearne faced a critical choice. In the limited time available, he could ignore Dent's statement and present a contrary view, which meant reaffirming much he had said the day before, or he could seek to unravel one thread of Dent's opening argument and hope that he could keep pulling that thread for the rest of the morning until the whole fabric of Dent's illusion was in tatters. He chose the latter course. "Professor Dent's words are like a meteorite shower shooting through our imagination. Traditional wisdom says that if you can recall an intense aspiration at the very instant you witness a falling star, that aspiration will be fulfilled within 12 months. For those of you familiar with that belief and hoping to bank on it, I regret to disappoint you. That wisdom applies only to natural meteor showers. Dr. Dent's meteorites are strictly man-made. The one year rule does not apply." Ripples of laughter emanated from the audience.

“Let us look at this miracle of emergent properties which my worthy colleague proclaims is the key to the ultimate answer to everything. What does it say? It says that in the course of their evolution, physical systems exhibit higher level properties previously concealed and unmanifest due to the action of complexity. He cites this marvelous principle to explain how stones begin to grow, trees begin to walk and animals begin to talk as we do. I grant you that these things are certainly marvelous. I wish to ask a simple question. How can something evolve out of something else unless it is already involved within it? From where does it come? By what principle do the higher laws governing biological life forms suddenly spring up from the lower laws of thermodynamics and motion? By what principle do the higher laws of mind and consciousness spontaneously self-constitute themselves from the lower laws governing plant physiology and animal instinct? I maintain that the principle of emergent properties is not an explanation at all, it is simply a description—a description of something we do not understand and cannot explain. Like the primitives who name as gods the primal forces of nature in order to gain mastery over them, we assign names to the unknown and claim we have conquered it. Who or what created or determined the principle of emergence in the first place? I fully concur with Dr. Dent in the need for a universal, all-embracing theory of creation, a theory freed from superstition of all varieties, scientific as well as religious. But I maintain that the final solution to the ultimate basis for that theory cannot be the all-knowing creative power of an inconscient, material force that happens to be lucky enough to hit the jackpot once every thirteen billion years. To insist on that approach is like judging the value of the Mona Lisa by its weight or the beauty of Shakespeare’s sonnets by their length and word frequency.”

Dan could almost see the sparks flying across the stage between the speakers. He could certainly feel them. The moderator turned to Dent and invited him to ask his first question. Dent resorted to his normal tactic of shifting the debate to ground that would be unfamiliar to his opponent. His knowledge of physics, biology and psychology enabled him to do it with great facility. Listening to Stearne, he had been probing for a weak spot and thought he had found one. “I am sure you realize, Professor Stearne, that we now have conclusive evidence that organic molecules can form spontaneously out of their inorganic components, that amino acids constitute themselves from these primordial organic compounds, and that more complex proteins can replicate themselves under certain conditions. Is this not compelling evidence that the principle of emergence explains the evolution of life from matter?”

Stearne understood Dent’s strategy and thought he could parry his first thrust. “Professor Dent. Give me thirteen billion computers and thirteen billion monkeys to type on them for thirteen billion years. I am confident that at least once, one of these monkeys will come up with a sequence of letters that closely resembles *To be or not to be*. Does that warrant the conclusion that Shakespeare was a monkey who lived for 13 billion years or that he was the thirteen billionth generation of a distinguished line of typing monkeys that finally discovered its emergent genius for poetry?” Laughter rippled through the audience.

The moderator invited Stearne to ask his first question. “Some thirty years ago, I was asked to take over as head of the Berkeley campus for one year. That was during a time of intense confrontation between the students, the faculty and the Board of Regents. During my inaugural press conference, a reporter asked me a question. ‘Who will be making the decisions around here?’ I replied, ‘Who makes decisions in your family?’ Of course, I meant by my question that the answer to his question will depend very much upon which decision he is talking about. Matters of campus discipline are within my authority. The decision to sell off Sproul Hall to the highest bidder is not. Can you please refer me to any AI system in the world that is capable of understanding the significance of his question or my reply to it?”

They both knew the answer to that question, so there would be no purpose in Dent answering it. He needed to somehow turn the tables on Stearne by shifting the battleground to areas where AI systems were clearly superior to human brain power. “Speaking of decisions, I have a question for you also which you can take as a rhetorical response to your own question. The AI system on Air Force 1 can identify approaching objects from forty miles away, distinguish the type of object, assess the threat level, release counter measures and initiate evasive maneuvers within a few milliseconds without the intervention of human intelligence. Can you please refer me to any human intellect in the world that is capable of that type of decision-making?” Laughter and resounding applause broke out from among the Strong AI advocates in the audience as their leader and spokesman gave blow for blow.

Stearne broke protocol by responding, “No doubt, computers make excellent automatic pilots and electronic defense systems—both purely physical functions which computers perform at incredible speed. But I’d hate to have a computer deciding for me where I should fly to, who I should shoot at, whether or not the President of the United States should push the doomsday button in retaliation for an enemy act of aggression, how to propose to my girlfriend, or which candidate to vote for in the 2000 elections—though I grant that an AI system may very well choose better than the American electorate is going to choose.” More

laughter. “We human beings have a perverse tendency to want to spoil a good thing. My basic point is that computers can help us make better decisions but they cannot make the really important decisions for us.”

The opponents sparred in this manner through two more rounds of mutual intimidation and then the moderator opened it up to questions from the audience. Ray Berger stood and asked the first question, “You have both mentioned the theme of freedom in your presentations earlier in the conference. In fact, both of you have quoted the very same words. ‘*Freedom is the final law.*’ Yet, you seem to have very different conceptions of what the word freedom really means. Can you please clarify your conceptions for us now?”

Dent was asked by the moderator to respond first. “By freedom I mean that we are not bound by the fixed laws of nature and prevented from changing. The whole universe is evolving. Nothing will be the same in the future as it has been in the past. There are no fixed, unchangeable types. Even the laws of nature are evolving and revealing hidden properties. The whole universe is a marvel unfolding before our very eyes. Chaos is not a principle of randomness as my colleague would have you believe. It is a principle of liberation from limitation. It is a principle of freedom.”

The moderator turned to Stearne from his response. “In September 1964, I was at Cal when the Free Speech Movement broke out. Students demanded the right to express their views on the Vietnam War and other matters. That is freedom. In August 1968 I was in Prague when the Soviet tanks rolled in, crushing the nascent movement for free speech, social liberties and political democracy. That is freedom. In October 1989 I was in Berlin at the time when the Berlin Wall was torn down and thousands of people rushed across the border to embrace fellow Germans from the other side. That is freedom. Now I stand before you at a revolutionary moment when humanity has the opportunity to liberate itself from the superstitions of scientific materialism that resolutely brainwashes us day in and day out to make us believe we are only machines fashioned by a blind inanimate force of Nature. Only if we do that will we be truly free to discover and embrace all of our own humanity. Today the metaphor of modern science is the presiding myth of our age that robs us of the freedom to think rationally and freely, as surely as Biblical metaphor dominated and deprived humanity of freedom in earlier centuries. Artificial Intelligence and now Artificial Life are only the most recent chapters in the book of lore. In humanizing the machine, we dehumanize man and obscure the essential difference between us.” A burst of applause filled the room.

Two dozen hands flew up simultaneously vying for the opportunity to ask a question. Their queries ranged from philosophy and metaphysics to quantum theory and dark matter, from computer profiling of potential marriage partners to picking winners at the track. The contestants handled them all with facility, returning the jibe at those who tried to knock them down or deflecting the force of the attack to their opponent wherever possible. The audience knew they were in the presence of two consummate masters and acknowledged the capabilities on both sides.

Nothing was decided that day, but much was prepared. It is doubtful whether anyone returned from that event converted or enlightened or liberated from entrenched ignorance. But many seeds were sown, many small cracks chipped into the edifice of the present, so that the future could seep through to the light of day. These two giants would each in their own way play a crucial role in that future. And so would the man who rose to ask the last question of the conference, Daniel O’Hara. “What is science?”

“Science” Dent replied with the facility of a tradesman explaining the efficacy of a love potion or an elixir for immortality, “Science is the quest for knowledge of reality. Science is the quest for Truth with a capital ‘T’. Science is knowledge that has power.”

It was amazing to Stearne as he listened to Dent’s reply how similar were the words they used and how different the meaning they intended to convey with those words. He attempted in his last response to convey both his own meaning and how it differed from that of the remarkable Dr. Dent. “Yes, science is knowledge,” he agreed, “and knowledge is power. But by knowledge and power I mean a knowledge that is complete and a power that generates only positive outcomes, not the knowledge of modern science which creates new problems every time it uncovers new opportunities, which destroys the environment in order to elevate human life. Science is knowledge of the essential processes that govern reality. It does not consist of boat loads of data or terabytes of information, it is not found by digging in the sand or searching the proverbial haystack. According to the testimony of our greatest scientists, scientific discoveries are the result of intuition, not experimentation. You do not happen upon the formula for $E=mc^2$ by digging into any number of sand piles or conducting any number of experiments. You discover that formula by opening your mind to a higher way of knowing. Discovery is an act of consciousness, not a lucky stroke of the shovel or pitch fork. It is a power that resides in the human mind and consciousness, not in the machine which is our instrument.”

Again the hall was filled with resounding applause for both speakers. No one could decide who had won the debate. No one could say for sure why it even mattered. But some of them sensed that it did matter very much. Daniel O'Hara sat for sometime recalling to mind Stearne's closing words about a knowledge that is power to generate only positive outcomes. Now that would be a discovery, he thought to himself. Then he rose and followed his companions out the door to their pre-appointed meeting over lunch.

Simon remained in his seat until the auditorium was nearly empty, recalling what he had heard, making mental notes for future reference. There was something about Daniel O'Hara that particularly caught his attention, but he could not identify precisely what it was. Whether or not he found what he was searching for that day, he could not say. Nevertheless, it was there right before his eyes and he would realize its significance soon enough. The long wait would soon be over. The time was approaching, the time for action.

6. The Plan

Years later they would recall this afternoon fondly on many occasions—sometimes to remind themselves of what they had decided that afternoon or to reaffirm their commitment to that decision when its consequences rose up starkly to confront them. Often they reminisced just to make fun of their own impulsiveness and laugh at their own naiveté. But in spite of all the unexpected consequences that were to come, none of them ever voiced a single regret for having decided as they did. If they had felt it at times, they had kept it to themselves.

“Do you really believe, Dan, that an AI system can be used to successfully predict initial social events for which no previous data exists for analysis?” Vinay asked.

“Yes. The analysis would be based on principles, rather than on statistical analysis. Take, for example, a simple commercial event—the launch of a new book. In 1984 Tom Peters and Bob Waterman published their breakthrough bestseller, *In Search of Excellence*, based on research they conducted for McKinsey. Remember this was a time when even successful business books sold ten or twenty thousand copies. Neither the authors nor the publishers nor McKinsey expected it to sell even ten thousand. It has already sold over eight million and since then business books have become best sellers. Even in retrospect, no one has ever explained how it happened. No amount of statistical analysis based on past sale trends of business books could have ever predicted it. But I believe an AI system that viewed the event in its widest social context could have.”

“You mean to say you have an explanation for why Peters book achieved such phenomenal sales?”

“I do, Vinay. I believe it can be traced back to the hippy movement in the 1960s. Peters was a part of that generation. The spirit of 1960s was freedom for individual self-expression. That is what it was all about. A rejection of authority and pressure for social conformity. So many young people of that generation left college with high expectations but were eventually forced to compromise with the practical realities of life. They entered major corporations, swallowed their ideals, submitted to the anonymity and regimentation of the corporate establishment and gradually rose up to the ranks of middle management. Twenty years later, along comes Peters shouting the mantra of freedom. Break down the walls of bureaucracy! Release individual creativity. That was just about the time when Apple Computers and other Silicon Valley companies were experimenting with an alternative to the regimentation of IBM-type corporate cultures. Flex time, no dress codes, no pre-assigned parking places, no executive toilets and dining rooms. I believe Peters and Waterman touched the ideal and nerve cord of freedom that lay latent but not forgotten in people of that generation. One call was enough to rouse it from slumber and dramatically alter management thinking in America.”

Dan’s explanation intrigued Ray. It appealed deeply to his interest in social processes. Anya was captivated by the idea. “I just bought my daughter Katia, the third book in J.K. Rowling’s Harry Potter series. I read a few weeks ago that in three years her first three books have already sold thirty million copies, that is more than *Gone with the Wind* has sold since its release in 1936. You actually believe such a thing is predictable?”

Dan nodded and replied, “Not only predictable, but replicable, which is something no amount of statistics can ever achieve. I mean a system like this can not only predict what will happen, it can also make it happen. It could be used not only for commercial purposes but even to solve political problems such as North Ireland or Kashmir or resolve environmental issues such as international negotiations on climate change.”

A wrinkle of skepticism rolled like a wave across Ray’s forehead. “How is that possible? Prediction is one thing, but what you are saying goes way beyond that.”

“Yes, Ray, what I am talking about is an AI system to enhance human accomplishment. My premise is that all human achievements are based on certain fundamental principles. If you know the principles, you have the knowledge needed to enhance performance of any activity.”

“Do you mean something like good principles of business management?” Vinay asked.

“Something like that, but not restricted merely to business applications,” Dan replied.

“Well, I can tell you that even after a century of commercial success, there is absolutely no consensus about what those principles,” Vinay added. “Some people believe that technology is the key. Others insist it is money or organization or people or market. Where would you find those principles?”

“That’s a good question. I am not yet sure. My idea was to try to extract them from an analysis of successful human accomplishment in many different fields.”

“So you are thinking of different AI systems for each field?” Anya asked.

“No, I believe that there must be a common set of principles applicable to all human activities, because in each case the human being is the central element,” Dan explained.

They had chosen a quiet corner of the patio restaurant away from the animated debates and occasional quarrels around the pool, though few people were in a mood to fight this afternoon. The lust for conflict had been quenched by the morning’s contest. Most people concurred that the day was too beautiful to be serious. The four of them shared their own perspectives on the morning’s debate, on the two antagonists, on the events of the previous two days, on the underlying issues and the significance of those issues to the future of AI, America and the world. They were too engrossed in their conversation to notice the frail short man with the beak nose who sat down in lounge chair near their table and appeared to fall asleep in the lazy afternoon heat, but did not miss a single word of their conversation over the next few hours. Over lunch, they shared information about themselves, ideas and crucial learning experiences. Anya told them that on her mother’s side she was a proud descendant of the Romanov line from St. Petersburg—the ‘real’ St. Petersburg, she reminded them—then burst out laughing at her own pretense to royalty. Looking at her was enough to remove any doubts about the legitimacy of that claim.

“I thought notions of aristocracy were long dead in your country,” Vinay quipped.

Anya shook her head and laughed, “The only thing you can be sure about we Russians is that we will rush to change with the times. Aristocracy and class structure are back in vogue. Its comrades and communism that are dead.” She went on to explain that her father had managed a ten thousand acre state farm in Stavropol, the region from which Gorbachev came. Her mother had worked as a physicist at the elite Moscow Institute, Russia’s equivalent of MIT, where Anya herself was educated. In 1989 she married an engineer a month before the end of the Cold War—“bad timing” she called it. Two years later, her daughter, Katia was born. The old social structure and way of life began to disintegrate before her eyes. New people came to power—ambitious, greedy and ruthless. The old way—which had appeared cold and impersonal from outside—had had its own silver lining of humanity. “People knew they could not trust or rely on the system, only on each other. It created strong bonds of personal loyalty and friendship. We Russians learned how to love each other deeply, because we got so little nurturing from the system. Anyway, that all began to fall apart, so I decided to leave. I felt suffocated and could not bear it any more. But Alex, my husband, refused. He was an aerospace engineer designing fighter jets and he spoke no English. He felt comfortable in Moscow. We argued about it constantly. For a while, I relented. I took a job at the Institute developing genetic algorithms to analyze patterns of data and formulate multi-variable models. The work was exciting, but the work atmosphere was stifling. I got more and more depressed. Alex and I quarreled. He found a girl friend. I don’t blame him, because I had become miserable company. Then I decided to leave and take Katia with me. My mother urged me to go. She said she would love to come with me, but the Russian Government refused to issue her a passport. Her work was too important and too confidential to risk losing her. An American mathematician who frequently visited Moscow for scientific conferences wrote offering me a job with NASA. So I left everything—country, job, family—everything except Katia—and here I am.”

Vinay said that his own life story would sound insipid after listening to Anya’s, typical of the self-effacing, natural poise which exuded with his every word and gesture. He had a deep, sonorous voice, a bright, manly face and tall graceful build. His family originally came from a wealthy business community in Northern Kerala. His father had been educated as an engineer at Cal and then returned to India. Vinay had obtained an engineering degree from the Indian Institute of Technology in Madras and was directly recruited for a job with Rothman & Lazurus in New York. He refused the job but came to New York anyway to complete an MBA at Columbia, with a specialization in financial markets. The job was still waiting for him when he finished his education and he accepted it for a salary fifty percent higher than the original offer. He loved the pace and challenge of the work in New York, but he could never bring himself to appreciate the values and outlook of his co-workers. “They are all searching for a magic formula to make a big killing on Wall Street. That is the only thing that is important to them.”

Ray said he came from a liberal Jewish family in Boston. His father had been a freelance journalist in Europe during the 1960s. Like Stearne, his father had been in Prague at the time of the Soviet invasion. Then he had taken an assignment reporting on the Vietnam War for the *New York Times* and later on Watergate and Nixon’s impeachment for the *Washington Post*. Ray mentioned these things, he explained, because his father had been greatly disappointed when Ray decided to enroll in information systems at MIT and then went on to complete an MA in political science. He married Rana, an engineer from Bangalore working for HP, a few years later. His father was an idealist who could see no meaning or dignity in a career

in technology. Ray had accepted the job at the Arlington Institute in the hope of harnessing his technological capabilities for some public purpose. He was given wide latitude for creativity at the Institute, but found it difficult to market his ideas with the government departments which were their clients. He had become increasingly frustrated because the prevailing approach in the capital was so mechanistic and quantitative. “They think public opinion is a set of numbers to be somehow manipulated, rather than millions of people with their own aspirations, attitudes and perceptions. They regard government as simply a machinery to execute what they want done, not a system for giving expression to the aspirations of society.”

Dan introduced himself as the grandson of an impoverished Irish freedom fighter who had given his life to found the Irish Republic. Every family has its hero, he added, and the only hero in his family had died in Dublin long ago. Ray had already recognized the Irish sparkle in his eyes and liked Dan immediately. Vinay was attracted to his quiet, self-effacing manner. Anya was just attracted period—to his mind or what, she could not say. He was not nearly as good looking as Vinay—very few people were, she thought to herself. But she instinctively felt he was someone she could trust. And she was already convinced from his presentation the day before and his questions to the speakers this morning that he was a person with good values and a mind liberated from convention. That was what she liked most. She sensed and admired his values.

Dan’s father and four brothers had immigrated to America during the Great Depression. One had become a priest, another a policeman, a third a grocer, a fourth a local politician in true Irish fashion and his father an engineer. They married nurses, teachers and even a clerk at City Hall. His mother was an English teacher from the Bronx. “The family prided itself on its self-sufficiency. We covered all the bases. For every need and every profession, there was an O’Hara to help out the rest of the family. Everything but a banker, which we probably could have used more than all the others put together, but anyway it forced us to become self-sufficient.” Dan had done his undergrad in engineering at Caltech, then a double MA in economics and psychology, both on scholarships, at Cal. By then Silicon Valley was the ‘in place’ to be in the world and Xerox PARC was at the center of the digital revolution. This single lab had given birth to the graphical user interface popularized by Apple a decade before Windows 95, object-oriented programming, laser printers, distributed computing and Ethernet. It was an exciting place to work and he had learned a great deal, but he found the focus on technology rather than on social applications less than fulfilling. Dan said he was interested in social impact.

Gradually the discussion veered back to the conference topic and the conclusions each of them had drawn from the debate. As is often the case when AI enthusiasts come together, they eventually came around to the controversy regarding the Chinese Room. The Chinese Room is a thought experiment intended to support the Weak AI position. An English speaking man with no knowledge of the Chinese language is placed in a closed room with boxes full of Chinese characters before him and a set of instructions on how he should respond to specific events. Someone outside the room who is able to speak and read Chinese passes various other Chinese characters into the room that are as unintelligible to the person inside as the ones in the boxes. Following the rules, the man inside selects and passes out a character from one of the boxes in exchange for each one that is passed in. The person outside the room concludes that the man inside also knows Chinese, when in fact he has absolutely no idea whether he has responded to a diplomatic initiative, a military threat, a marriage proposal, an order for fast food or a joke. This example is used by advocates of Weak AI to demonstrate that computers do not think, they only appear to think because they follow a set of rules without having any idea of the significance of what they do. They behave exactly like the man in the room who carries out instructions in response to stimuli without any knowledge of what he is doing.

This apparently simple, straight-forward analogy has given rise to endless debate and controversy over the years, which has yet to be resolved to the satisfaction of either side. The four of them knew better than to spoil a beautiful afternoon by trying to address that insoluble riddle now. Nevertheless, they could not altogether restrain themselves from the temptation. “Personally, I tend to side with the Systems Reply to the Chinese Room,” Ray said. “We have to remember that the man inside is not functioning in isolation. There is another man in the room or overseeing the whole experiment who has given him the instructions in the first place, someone who knows Chinese. The difficulty arises when you want to look at the non-Chinese speaking man in isolation from his context, without considering the larger system within which he functions successfully. It is the same with the computer in an AI system. The computer is only one component of the system. Human intelligence is also there to design and program that system.”

“I fully agree with you, Ray,” Dan added. “The problem is that most people forget about the other man in the room. They forget that computers appear to be conscious, because human beings write instructions for them. They make the fatal error of attributing to the machine the properties of consciousness that rightfully belong to its human creator. My dream is to build an AI system that integrates man and machine, rather than regarding them as independent variables.”

“How would you do that?” Anya asked with a look of fascination in her eyes.

Dan’s face emanated light as he replied. “By developing a system in which the designer, the computer and the user all play essential roles. The designer programs the rules. The computer processes information according to the rules. The user makes decisions based on that processed information. Instead of creating an AI system to replace human beings, I would like to create one to enhance the capabilities of human beings. As Stearne repeatedly reminded us, the computer is just an instrument for the extension of human consciousness.”

The four of them fell into silence. No one spoke for several minutes, but there was no sense of discomfort, no need to fill in the gap. They were all too busy thinking, thinking the same thing. “I’d like to do that too,” Vinay was the first to express, but in doing so he gave expression to precisely what Anya and Ray were thinking as well.

Dan leaned back and looked around the table at each of them in succession. “Then let’s do it together. Let’s formulate a plan and put our minds together to make it happen. I know I do not possess all the knowledge and skills required to do it on my own. But listening to each of you speak yesterday, I could not help thinking that for the first time I was hearing people who thought as I did. What I am incapable of accomplishing on my own, I believe we can accomplish together.”

They all nodded their heads, at first slowly, then vigorously. Then they added words to vocalize their agreement, developed a concept and charted out a plan. It would require time and money to execute that plan. They set a goal of preparing themselves over the next twelve months and opening shop in January 2001. A sense of surprise and a feeling of exhilaration spread among the four of them and gradually increased in intensity. They kept looking at each other for confirmation and assurance that they had really made the decision they thought they had made. Each examined the other three and came to the same conclusion. “This is someone I can work with. This is someone I *want* to work with. Together we can do this.”

Finally as they were about to adjourn and get ready to head for the airport to return to their respective homes that evening, Anya turned to Dan and said. “When you stood up to ask that final question this morning, I was expecting something else. I had the strongest feeling that you were planning to ask a different question and changed your mind at the very last instant. Was I right?”

“Am I as transparent as that?” Dan asked, shaking his head in admiration with a broad smile, “There was another question I wanted very much to ask, but I knew in my heart that this was not the right time and place to ask it. I wanted to ask each of them to define and explain the difference between the brain and the mind. That, in my view, is the real difference that distinguishes the Strong AI position from the Weak. Advocates of Strong AI believe that the brain is everything. That thought, consciousness, imagination, intuition, even revelation begin and end with the brain, with the physical nervous system in the body. Once you accept that view—however little real evidence there is to support it—then the idea of a superior artificial intelligence makes sense and inevitably follows from that assumption. But if the brain and the mind are two distinct but interdependent things, then the basis for the Strong AI position is undermined at its source.”

“And what precisely is the difference between the brain and the mind according to you?” Vinay asked with genuine curiosity.

Dan replied with an enigmatic smile, “If I knew the answer to that, Vinay, I would have been up there debating with the two old men this morning.”

When they finally dispersed, Vinay headed back to his room to pick up his bag. As he entered the elevator he saw Edward Bennet, his colleague from Rothman & Lazurus already inside. They greeted each other politely and chatted as the elevator doors closed. Bennet asked Vinay how long he had been at Goldman. As he exited the elevator on the eight floor, Bennet turned back and said, “With the kind of ideas you have, I am surprised you have lasted this long. I wouldn’t be surprised if you don’t last much longer.”

Vinay smiled cheerfully and replied, “You know, Ed, I am impressed by your powers of foresight. You may very well be right.”

While the four of them were charting out a common future over lunch, Kurt Levin knocked on Stearne’s hotel room and was readily admitted. “Thank you for agreeing to see me, Professor. I am sure you must be fatigued after yesterday’s presentation and this morning’s debate, but I was very eager to continue the discussion we began over breakfast yesterday.”

“It’s a pleasure, Kurt. I found the story you told me quite fascinating. Rarely do I meet people who take this subject as seriously as I do. I am all too familiar with the prevailing attitude among AI specialists in Israeli to doubt the extraordinary efforts you must have taken to persuade your employers to fund your project. But I am really not sure I can be of very much help to you. As you know, I am merely a theoretician, not a practitioner like yourself and so many others here.”

“Quite frankly, professor, I was surprised when I saw your name on the conference program, especially alongside Professor Dent’s. It is the only reason I came all this way. I attend most of the major AI conferences, but this one is not ranked among the most important. I am sure you know that the organizers are well-known supporters of Strong AI.”

“All the more reason to accept their invitation, Kurt. You and I belong to a dying creed. I accepted on condition that they grant me selection rights for the speakers on the second day. I came in the hope that there might be one or two people out of all the participants who are able to relate to what I had to say. I must admit that I was deeply impressed by your presentation and three or four others that I heard that day. I am counting on you youngsters to keep the flame alive.”

Coming to the point of the meeting, Levin said, “My specific question relates to creation of a system of human accomplishment as I described yesterday. My difficulty concerns the knowledge base on which the system would be formulated. The Strong AI view assumes that it would be based on statistical analysis of case data, but I very much doubt such an analysis would reveal general principles of accomplishment that can be broadly applied to other situations.”

“I agree with you, Kurt. The key to the success of such a system lies in the knowledge base of fundamental principles. That is where you have to start. But it may not be quite as difficult as it sounds to identify them. After all, human accomplishment is as old as humanity itself. Throughout the ages there have been successful leaders, organizations and nations that have known and applied truths of accomplishment, though perhaps in most cases they were unable to verbalize their intuitive knowledge. Surely, they must have been codified at one time or another in general terms. Find that source and the rest will naturally follow.”

Levin could not bring himself to tell the professor that he knew that source existed, that he had held it in his hands eleven years earlier and let it slip from his grasp.

7. Black Boxes & Hot Air Balloons

Within weeks a regular flow of email traffic began traveling back and forth between the four of them, the Group, as they came to refer to themselves. With each passing month the flow increased. It began with an exchange of ideas and technology updates, an assessment of existing applications and possible approaches they could take. It sometimes slipped into a philosophical debate and on a few occasions into an ideological quarrel, but those were rare exceptions. Over time they got to know, like and trust each other even more, to share their problems at work, their aspirations and their anxieties.

They met only once during that year. Anya had suggested a weekend ski trip to Boulder, Colorado. An avid skier, she was eager to size up the future competition. Vinay had argued that he was qualified only on water, not snow, and would remain on the sidelines with the first aid kit, but Anya had insisted he come prepared for adventure. “If you cannot handle a little old ski slope with a 45 degree angle at 150 mph,” she wrote to him, “how do you expect to handle the travails of running your own company?” Genuinely alarmed until he found out from a co-worker that the world speed-skiing record was 157 mph, he then wrote back to her saying how relieved and reassured he was by her soothing words. The weekend worked out pretty much to Vinay’s advantage after all. The snowfall was too heavy for them to even venture outside and there were too many important issues to discuss around a cozy lodge fire for them to care. Anya would just have to wait a little longer to size up the competition.

Between the four of them, they possessed a strong and broad range of capabilities. Dan’s expertise in computing and mental processes was a perfect counterpart to Anya’s facility with equations. Ray possessed a comprehensive knowledge of AI application software and expert systems combined with a fund of historical and contemporary knowledge more common in a historian or a journalist. Vinay had a business and commercial savvy the others lacked, plus a natural facility for communicating and engaging other people.

Three issues occupied center-stage in these exchanges—product, technology and finance. They shared possible ideas and examined various market niches. From the vantage point of Wall Street, Vinay was strongly in favor of a product that would help people be more successful on the market—not that people required much help in a market that had risen so rapidly that almost everyone came out ahead. They were in the midst of an unprecedented technology-driven boom, he argued. Nearly half of all American households were investing in the market. There were few reliable products available to guide the casual investor. He shared his ideas on how they might differentiate themselves from existing products and from Wall Street trading philosophies. He estimated potential revenues of at least seventy-five million dollars over three years, without taking into account what they themselves could earn applying the product to manage their modest investment portfolio. Ray presented an alternative proposal for a product addressed to governments, but eventually conceded that there might be little market if the Republicans come to power, a possibility that was looking more plausible as the election approached. Finally the Group accepted Vinay’s proposal as a starting point from which to branch out into other fields. However, Vinay made it clear that if they succeeded here, they would not have to branch out. It would be an unparalleled accomplishment of inestimable value which would propel them to the summit of the global AI community.

Algorithm trading, algo or black box trading had become popular during the market boom of the 1980s and was believed to be at least partially responsible for the 1987 stock market crash. Reliance on automated computer based trading strategies increased dramatically during the 1990s as markets upgraded technology to support automated trading, enabling the NASDAQ to become the largest electronic stock market in the USA and fueling the dotcom boom in 1999. Taking full advantage of technological developments, Wall Street firms invested tens of millions of dollars a year in computerized pricing programs, which were undergoing continuous modification and upgrade, or in purchasing companies that possessed successful trading programs. These systems operated at such high speeds that it was impossible for manual trading to keep up with them. When connected to large databases of financial and economic data, they could respond in milliseconds, reversing the direction of the market or precipitating huge peaks and troughs. When the programs worked correctly, they could earn hundreds of millions of dollars for hedge fund in a single day. When they misinterpreted data or trends, they could wipe out an equal amount of wealth in hours. To mitigate the risks, futures traders and hedge funds usually spread their investment over a diverse portfolio of stocks and in multiple markets, just in case.

The Group had reason to believe they could do better. Vinay’s term of incarceration on Wall Street, as he liked to describe it, had given him an intimate knowledge of the market principles underlying algo trading systems. Although compelled to work on existing models, while at Rothman & Lazurus he had developed a prototype of an alternative approach that which had attracted supporters within the company,

but not the financial backing required to fully develop it. The goal of the Wall Street trader, like traders everywhere, was to anticipate what other traders were going to do and the impact that their behavior would have on market prices, then take investment decisions in anticipation of that impact. Although the original purpose of stock markets had been to generate capital for growth of firms with real economic potential, somewhere along the line the chain of causality had become reversed. Financial markets had become more and more divorced from the underlying economic realities. The behavior of markets came to reflect the market's own expectations about its own future performance, like the mystical Ouroboros of the alchemists, the serpent biting its own tail. Some economists went to the extent of claiming that economics and finance were almost independent spheres of human activity. Markets fluctuated according to what buyers and sellers thought other buyers and sellers were going to do, rather than on where real business potential justified further investment. Fueled by the ever growing global surplus of investable funds, this was the main reason for the speculative bubbles that periodically burst, raising calls for reform that were inevitably followed by fresh bursts of speculative enthusiasm.

Vinay argued for a shift in approach from the financial market to the underlying economic fundamentals. The basic idea was not new. Many algos factored the anticipated impact of economic variables into their equations. But the rationale for doing so was always the anticipated impact that the announcement of economic news would have on the behavior of markets. Whereas Vinay's approach was the reverse. He proposed making market decisions that would reinforce economic fundamentals and support companies with strong growth potential. His simulations showed that trading decisions based on this approach resulted in higher average returns to investors and also resulted in stronger economic performance of the underlying businesses. The approach had met with considerable skepticism by people within the financial community precisely because it seemed to reaffirm traditional economic concepts that had been discarded long ago in favor of a more pragmatic, statistical approach based on Heisenberg's uncertainty principle—which was precisely the theoretical perspective of Strong AI. Besides, most people he spoke to argued that the boom in the market associated with the expansion of automated trading was sufficient proof that the current approach had a sound theoretical basis and there was no need or justification for radical departures.

Ray's research on economic models supported the view that a close linkage between economic and financial markets would lead to more stable and consistent results than the approach now in vogue. The Japanese price bubble that began in 1986 and finally collapsed in 1990 was responsible for the destruction of twenty trillion dollars in real estate and share value and for making the 1990s a lost decade for the Japanese economy. No company, bank or trader had escaped unscathed from the debacle. The East Asian Crisis of 1997 had similar origins. Ray, too, believed there must be a better way.

Dan argued that there was nothing radically new about trying to relate economic performance with the behavior of markets. The key would be their capacity to model the psychological and sociological factors which determined that economic performance. While most economists viewed the economy in mechanistic terms of input and output, Dan's research had convinced him that economics was based as much on intangible social and psychological factors as markets were, but on a different and more fundamental set of aspirations, perceptions and attitudes than those that accounted for volatile swings in the behavior of financial markets. His main concern was whether they would be able to convert those intangibles into mathematical expressions. They would require new technology to support new theory.

Anya's background and her recent work at NASA provided crucial links that the other three had been missing until now. Although she had not been involved in the development of computerized pricing models up until then, her master's thesis in Moscow had focused on the Kolmogorov extension theorem used to determine probability densities and finite probability distributions, which formed the basis for the Black-Scholes models commonly used in computerized pricing and trading programs. Her work at the Institute had been on expert systems capable of modeling psychological behavior. Combining the two approaches, she prepared an elaborate document illustrating how a similar approach could be used in Vinay's economic-financial model. Once she translated higher mathematics into a language intelligible to engineers, the Group settled on the methodology she advocated.

Money was the other major concern. They had reason to believe that based on the technical strategy Anya outlined and by outsourcing a substantial portion of the work to Russia and India, they could develop their product with far less expenditure of time and money than was typically required for the development of trading algos. Nevertheless, they estimated a minimum development time of fifteen months to reach prototype stage and another six months before the product would be ready for marketing. Such an aggressive timeframe could only be achieved by involving at least sixty engineers and mathematicians in the project. Assuming half of those people were employed in the USA and the other half worked for subcontractors overseas, they would require a minimum of ten to twelve million dollars to reach the launch phase.

Each of the four had invested the bulk of their savings in NASDAQ companies over the past four years, starting at a time when the index was less than 1000. Two months after the AI Conference it reached 5000. By that reckoning, they calculated they could pool at least three million dollars between them. They would have to raise the rest. Initially Vinay ran into difficulties with potential investors when he tried to explain the underlying rationale for the new product. People were always skeptical of an idea that smacked of idealism. Then he discovered that he did not need to explain much about the theoretical basis for the new system. It was enough if he said the group had formulated a more accurate and powerful set of algorithms for predicting market behavior. Investors may not understand the terminology, but they could easily understand the result that he promised and how much it would be worth in the marketplace. With this refined approach, Vinay managed to obtain another two million in seed capital from a Cayman Islands hedge fund managed by Jake Talbott, a former trader at Rothman & Lazurus, in exchange for fifteen percent of the shares. Ray raised another million from a long-time friend and wealthy lawyer, Bill Gershwin. Given the buoyancy of venture capital markets at the time, they had little difficulty in tying up another five million dollars from two VC firms in exchange for thirty-three percent of the company. That would leave the partners with forty-six percent of the shares and a very tight project budget, but both Anya and Vinay were confident that could land outsourcing contracts from their former employers to generate additional cash during the time needed to bring their first product to market.

8. Millennium AI

The Group incorporated their company, Millennium AI (MAI), in Berkeley on December 27, 2000 with Dan as President, Vinay as Vice-President Marketing, Ray as Chief Technology Officer and Anya as Director of R&D. Vinay joked that it would be a company in which everyone led and nobody followed. But that was not true for very long. MAI rented one floor of office space in a four story building on University Avenue three blocks from the UC Berkeley campus. On the morning they moved into the vacant offices, a cheerful looking Hispanic woman in her mid-thirties with long black hair appeared at the door and addressed Anya in Spanish. Anya asked Dan to come over and translate what the woman was saying. After a brief exchange, Dan explained that the woman's name was Limpia Garcia, *limpia* meaning purity. She was asking if they were looking for any help. She used to work for the previous company that occupied this space, but had to give up her job when they moved to San Rafael, because it was too far for her to commute every day.

Anya asked Dan how he responded to Limpia's request. "I didn't. She addressed the question to you. Obviously she can tell who is in charge. But in anticipation, I did ask her what type of work she is qualified for. She replied that she is good at cleaning, running errands and cooking, provided you like spicy Mexican food."

"And did you ask her how much she is expecting to be paid for this wide range of services?" Anya asked, obviously enjoying her role as decision-maker.

"I didn't have to," Dan replied. "She said she can tell that you have an honest face and she will take whatever you decide to pay."

Vinay overheard the conversation and came over to introduce himself to Limpia, though he spoke no more Spanish than Anya. "I feel greatly relieved. Now there is at least one person that I can boss around!"

Anya pretended to be annoyed. "Look how you men take me for granted. I haven't even said if I have decided to hire her or not." To which Vinay replied that he could not help himself. He loves spicy food. As soon as Limpia understood she was getting the job, she pulled out a photo of her two young children and proudly passed it to Anya.

Later that day they hired employee number two, an attractive and shapely twenty-four year with long reddish brown hair and a warm smile named Lauren Lacrosse. Lauren had just completed a BA in psychology at Cal. She was a French Canadian from Montreal, who had heard from a friend in computer sciences that MAI was opening offices and had come looking for a job. The three men decided to hire her without consulting Anya and later explained that they had done it for the sake of harmony in the workplace. It was essential, Vinay explained while trying to maintain a straight face, that there be more than one very attractive woman in the office to prevent unseemly competition. "It's for you own good," he insisted. Anya was not sure he was joking and she could not make up her mind whether to feel flattered or jealous. By way of additional justification, Vinay added that Lauren's French Canadian background would further strengthen the cultural diversity of the team. Anya at least pretended that she wasn't so sure. Interviews for the first ten technical positions began on January 2. By the end of the January, all the technical positions had been filled.

None of them had reckoned on what would happen to the NASDAQ in the months following its peak in March 2001. By summer it had fallen from 5000 to 3200, but then recovered and rose to over 4000 during early Fall, before dropping to 3000 by the end of the year. By that time their personal pool of capital had shrunk to \$1.5 million. Within two months after they started, the NASDAQ fell below 2000 and never again crossed that level until early 2004, by which time all their shares had been sold long before. They finally realized only \$1.2 million for shares formerly valued at three million dollars. Rothman & Lazurus and Bill Gershwin put in an additional three million dollars as promised. One of the VCs backed out and the other cut his investment by 50 percent, leaving them with just \$5.5 million to launch the company. But it was too late by then to turn back. Resignations had already been submitted, homes had been sold, and new commitments had been made. In any case, none of them expressed a desire to reverse the course, even if they could. Dan pointed out the silver lining in apparent catastrophe. In spite of the partners' smaller investment, they would retain control of the company, with fifty-six percent of the shares.

Vinay had already invested several years in conceptualizing a new approach and during the year following the conference all four of them had put every spare moment into researching and thinking about the project, so that by the time they actually started work at MAI they already had at least six months head start on the product. Now the only question was whether they could complete it within only fifty percent of the original budget. They cut back on the budget for staff to just twenty engineers plus Limpia and Lauren in

addition to the four of them. Vinay negotiated deferred payment terms from a Bangalore-based IT company to provide thirty engineers working in India on contract. Anya negotiated with an old colleague in Moscow for another ten in Russia. They knew that the cut backs in staff would also result in a longer product development time, unless they could find some way to abridge the process. They faced increased pressure for both time and money even before opening their doors for business.

As if that were not enough, the collapse of the dot com boom obliterated the market for investment software. Even if they had had a product ready for market in 2001, it is unlikely they would have found any customers to buy it. In addition, Vinay's hope of getting outsourcing contracts from Rothman & Lazurus to supplement their financial resources vanished into thin air along with the bull market. When every Wall Street brokerage was sacking its own high-priced traders right and left to cut losses, it was unlikely they would be outsourcing work any time soon.

The September 11 attack on the World Trade Center only reinforced the volatility and sense of vulnerability which had plagued the markets all year. The New York Stock Exchange and the NASDAQ stopped trading for seven days, the longest closure since the Great Depression. Wall Street adopted a siege mentality. When the markets opened again on the seventeenth, the Dow fell 684 points or 7.1 percent in a single day and 14.3 percent in a week, the largest ever single day and single week point declines in US history, wiping out \$1.2 trillion in stock value. The NASDAQ dropped 14 percent in the first nine trading days, before starting to recover. But as if by a conscious effort of willful determination to prove it could not be intimidated, the NASDAQ returned to the pre-attack level exactly thirty days and the Dow exactly sixty days after the al-Qaeda attack.

In spite of all these obstacles, progress on what they called MAIS, Market Artificial Intelligent System, was faster than anticipated. Vinay worked with a passionate intensity that surprised his colleagues, like a man who felt he was just a few feet away from striking gold. He met every obstacle with a resourceful solution or greater commitment. Dan's theoretical knowledge of economics was of immense value in building the economic foundations for the product. Ray's clarity of thought and vast knowledge of public institutions helped them isolate the essential issues to concentrate on from a virtual morass of superstition and misconceptions. Anya displayed a genius for improvising shortcuts to compensate for the shortage of staff, reducing the development time by several months. Vinay had estimated that it would have taken any Wall Street brokerage three to five years to develop a product of this type. Yet, in spite of the severe budget constraints, they were on track to complete the task in a mere eighteen months. Dan concluded that their extraordinary progress was possible because they had approached the problem from above, starting with sound underlying theory and proceeding to application, rather than from below, trying to discover hidden patterns by analysis of a huge volume of data, the standard approach of econometrics to the derivation of economic principles. Anya argued that the compatibility and complementarity of the four of them was the decisive factor. She had worked with many talented people before, but never had she been in a group where each person was able to so effectively supplement, enhance and complete the work of the others, enabling each of them to perform as part of the group at a higher level than they could perform individually..

After running extensive data simulations in-house, by June 2002 they were ready for prototype testing. They knew they would be fortunate to find anyone willing to risk money on an experimental program during a period of high market volatility and disappointed investor hopes. Virtually every firm was taking a bath in the market. They also knew that it came just in the nick of time, for MAI had exhausted all its funds and could not go to investors for more without demonstrating that the seven million dollars had been well spent and produced something of real value. Thus far, they had nothing concrete to show for their time and money. As soon as the prototype was ready, they suspended further outsourcing and encouraged some of their local staff to take extra time off without pay until they could generate some cash.

Jake Talbott ran MAIS for the first time on June 3, 2002. At the end of the day he reported a two percent gain in the value of the portfolio managed by MAIS compared with a one percent gain by his regular algo. For the each of the next ten trading days, MAIS outperformed Jake's algo by an average of twelve percent. Jake was very pleased. On June 17, Jake raised the portfolio to hundred million dollars. During the next two weeks, the value of the portfolio rose to hundred and five million dollars. Jake was delighted with the performance of MAIS, especially considering the fact that during the same two week period the NASDAQ had fallen thirteen percent! MAIS had outperformed the market by eighteen percent over a two week period. Vinay and his partners were even more surprised than Jake was at the performance of MAIS. They had been confident about the theory, but never expected its performance to be that much better than traditional algos.

After overhearing a conversation between Vinay and Dan regarding Jake's satisfaction with MAIS, Lauren walked into Vinay's office one afternoon and asked if he could give her some personal advice. "You

know so much about stocks. Can you give me a few tips? My younger brother Greg and I each inherited one hundred fifty thousand dollars when our grandfather passed away. I'd like to invest our combined savings in the market." Vinay advised her that the market might not be the best place to put their money during these times of high volatility and falling prices, but Lauren said she was very confident that with Vinay's advice they would do well. Reluctantly, he listened to her ideas and applied the logic of economic fundamentals that they had incorporated into MAIS. Lauren thanked him profusely and skipped out of the room. Later Vinay was to recall this incident with a considerable sense of surprise.

For the second month of testing that commenced on July 17, Jake raised the MAIS portfolio to five hundred million dollars. During the next one week, it rose in value to five hundred twenty million dollars, a gain of four percent. But during the same period, the NASDAQ fell precipitously by another twelve percent. While the overall performance of MAIS was outstanding, performance on some days and some stocks was erratic or significantly at variance with the general trend. The team at Millennium worked day and night to identify the reasons for these variances and correct them. Gradually, the variances declined and overall performance rose even higher. During the third month of the beta test, Jake increased the MAIS portfolio to five billion dollars. The beta was originally scheduled to run up to September 17 but it was extended by an additional week to verify the impact of more recent modifications in the algorithms. When the test was finally completed on September 24, Jake reported a gain in the MAIS portfolio during the third month of five hundred forty million dollars or eleven percent, a period in which the NASDAQ had fallen by fifteen percent to its lowest level since early 1999. Jake and his associates were so delighted that they sent Millennium a check for seven million dollars on the closing day of the test. Jake said they should consider this money not as a payment, but simply as a gift.

The past three months had been at once both exhilarating and exhausting. Increasing financial pressure had made it difficult to maintain staff morale and keep creditors at bay. Finally all their worries were at an end. Jake's gift was enough to pay off the subcontractors and still have sufficient funds to operate for at least another year. Vinay had scheduled a meeting with Jake in New York on October 2 to negotiate licensing of the software. Based on their recommendations, he was confident of selling MAIS licenses to several other hedge funds and investment houses as well.

Everything changed on Monday, September 30. Jake called and informed Vinay that he and his fund were being investigated by the SEC for market manipulation and that MAI had been implicated as a possible co-conspirator. Vinay expressed alarm at this news. Jake tried to mollify him by saying that investigations of this type against hedge funds were quite common. In the absence of clear regulatory powers over the private, offshore funds, it was the only way that the SEC could try to hold them in check and curb speculative impulses. He assured Vinay that there were no grounds for concern and certainly no likelihood of prosecution against MAI. Nevertheless, when Vinay reported the news to his partners, they were stunned.

"How ironic," Vinay said, "that they should accuse us of manipulative behavior when the very basis of MAIS is to link the market to sound economic fundamentals. They want to blame us for what others are doing rampantly."

Ray appeared visibly nervous and deeply disturbed. "The last thing we can afford just now is an SEC investigation. The fact is, Vinay, during the period of our beta test, the NASDAQ took a big dive. Circumstantial evidence is not in our favor."

"That's crazy," Vinay replied. "You can't possibly think that MAIS was responsible for that market volatility, could you?"

Ray shook his head. "All I am saying is that circumstantial evidence is against us."

Vinay was about to reply further, when Dan intervened. "Regardless of whether the SEC tries to blame us or not, Ray has raised an important point, which frankly never crossed my mind until this very minute. The fact is that during the third month of the beta, the NASDAQ took a big fall. Ray's comment makes me wonder whether there could be any relationship between the two events. I know it sounds fantastic, but I think it is worth investigating."

Vinay could not believe what he was hearing and reacted strongly, "But Dan, that doesn't make any sense. Even after Jake raised the portfolio to five billion dollars it represented a tiny portion of the NASDAQ total, far too small to influence the overall performance of the index."

"You are probably right, Vinay, but I would like to be sure. Remember that Jake's fund does not act in isolation. These funds watch each other very closely. You have said many times that the Street is like an extended Indian family, small, closely knit and often wracked by intense internal competition. Already others may have noted Jake's success in the second round. Other senior traders at Jake's fund as well as

others who know him may have been monitoring what he did and mimicking his actions. Besides, financial markets are so very sensitive, who can say how large an impact is needed to tip the scales in the opposite direction? Vinay, you spoke of irony a few minutes ago. Wouldn't it be ironic if the program we created to promote economic health actually had the opposite impact? I don't like the idea any more than you do, but we owe it to ourselves to consider the possibility."

Vinay was not surprised that Ray should take a dogmatic, idealistic view unrelated to the real world, but he could not believe that Dan was really serious. He felt waves of frustration rushing through his nerves and a powerful impulse to shout at his partners' bull-headed idiocy. Then Anya added to his agony by expressing her own doubts, which she said she had been harboring for months. "I went along with this proposal from the beginning because I believed it was technically feasible to do what Vinay proposed. But now that we have run into trouble, I have to confess that I have some fundamental doubts about the whole concept. I don't mean doubts about the concept of making a better trading program. We have already proved that we can do that. I mean doubts about whether it is possible to do it in a manner that is more constructive than typical algos. Having been raised as a good communist, the relationship between private benefit and public good has always been suspect to me. I saw clearly enough how my Russian comrade leaders confused the two to be skeptical of anyone who claims otherwise. At least in America people are frank enough to admit they are only out for themselves. Then we come along and start a whole new line of capitalist propaganda, make money while helping others. The results show that it does not work, at least not the way we have done it. My doubt is whether it can ever be made to work. Are we just fooling ourselves with another brand of idealism?"

Vinay was speechless with indignation at the nonsense his partners were speaking. Anya was a brilliant and beautiful mathematician, but what did she understand about capitalism or stock markets? He had been eager to work with her because of her technical capabilities, but he had never expected her ideology to interfere with sound business decisions. He knew he had to be careful how he responded. She was so volatile, any response could easily result in an explosion. And apart from getting her to be reasonable, the last thing he wanted to do was quarrel with Anya. But he had to say something to make her see reason. He was about to respond, but Dan spoke first. "Your doubts are natural and your skepticism is healthy, Anya. But I still believe in Vinay's basic concept and here is why. If you examine the history of money and markets from the very beginning, you discover that, like language, money is an instrument that human beings have created to help them interact with each other more effectively for mutual benefit. Language enables us to communicate, collaborate and avoid misunderstandings with one another. Money enables us to specialize and diversify our productive activities and exchange the goods and services each of us produces. That is the original basis of money, but that is not its only role and that does not actually explain how money is created."

Vinay did not understand why Dan was talking about the philosophy of money at a time when simple, practical facts were the real issue, but he saw that Dan's approach appealed to both Anya and Ray and they were listening intently to his explanation. What did it matter how they arrived at the right decision, as long as they finally came around to seeing reason. There was so much at stake. Vinay could not believe that at the moment of their ultimate achievement, his partners were actually sitting and calmly considering whether there was something fundamentally wrong with MAIS. The whole conversation was surreal.

Dan continued and as he spoke the tension in the atmosphere gradually dissipated. "After all, what is money? It is nothing but a symbol or a convention, like the words I speak, with no inherent value of its own. My words are just a sequence of sounds, but they mean something very real to you, because they communicate ideas and intentions. If you tell me that I am an idiot, I react. If you tell me I am a good man, I am pleased. Words carry power because of how we understand and interpret their meaning. We are always free to create new words or give new significance to the words we already know. Politicians, poets, lovers and techies do it all the time. The same is true of money. It is a symbol which we create. When Jake or Bill Gershwin say they are willing to invest money in our company, they are saying the company has value to them and to the society. So in creating MAI, you can say we have created money because we have created value. How much money the shares in MAI are worth depends on people's perception of how valuable MAI is. Most people value the shares of a company based on what other people say or how much other people are willing to pay for those shares. What they are valuing or trusting is other people's opinion and behavior, not actually the company itself. Vinay's approach is to shift the center of reference from trust in what other people think or do to how much confidence or trust we have in the underlying business or economic reality. In either case our trust creates value which means it creates money. When we act based on predictions of what other buyers and sellers will do, we create money based on speculation regarding their opinions or expectations. When we act based on our confidence and trust in the companies we invest in, we create money based on our understanding of the companies inherent potentials. Both are based on a perception of

potential rather than on a material reality, but the potential being valued is different in each case. The first is like basing your decisions on what you imagine that I am thinking or I am going to think in future. The second is based on what I am actually doing or going to do in future. The first approach leads to wild fluctuations, resulting in booms and busts. The second leads to sound investment in real economic potential. Theoretically it should make market crashes extinct. The fact that MAIS has not done that does not mean the theory is wrong. It means we still lack some essential knowledge required to make it work.”

Vinay was not listening to Dan’s explanation. He was watching the faces of his partners and saw that they were responding to his words. That was all that mattered as far as Vinay was concerned. Anya still wasn’t sure she understood the central point. In fact, the whole subject of money remained an incomprehensible mystery to her. She had no problem understanding algorithms, differential equations and neural networks. They were all based on an inherent logic of their own. But money seemed different. It seemed to appear and disappear out of nothing and be based on nothing more than human perceptions and expectations. As a Russian, she associated as much mysticism with money as the ancient Greeks and later alchemists associated with the squaring of the circle or Fibonacci numbers. She put questions of principle out of her mind. Shifting her attention back to the present problem, she began to think of some tests she could run to test the impact of MAIS on the overall performance of NASDAQ during the past one month. She explained to her partners what she had in mind and then gave instructions to Tony Preston, MAIS project leader, on precisely what tests to run and how to design them. Vinay regretted that the issue had not yet been fully resolved, but he was pleased that at least they had shifted their focus from ideology to facts.

The very next morning, Dan received a call from a senior investigator at the SEC asking him to come to New York for a meeting on October 2.

9. Hard Times

Jake had been correct about the SEC. Their request for a meeting had simply been intended as a mild form of intimidation to keep another group of speculators within limits. The investigator smiled broadly when Vinay described the theoretical basis of MAIS. He had heard a lot of stories in his time from ruthless, money-hungry traders claiming their selfless and benevolent motives for serving humanity or professing total ignorance of how their conduct might be misconstrued as destabilizing to the market. But Vinay's attempt to persuade him that MAIS was a computer program with a heart dedicated to the welfare of society was a new one on him, and he found it impossible to conceal a smirk of jolly cynicism as he listened to the explanation. They were sent off with just a verbal warning, but returned to California without attempting to meet Jake regarding sale of the software.

Later that day Gregory Thompson, Assistant Secretary of State for International Affairs, received a call from his father while conducting a high level briefing on Iraq. The US Congress had just passed a resolution authorizing the President to use the armed forces as he deemed necessary and appropriate in Iraq. There was a mood of jubilation among those present regarding the wording of the resolution. In typical fashion, Congress had shifted all the responsibility to the president. That was exactly what the administration wanted. Now they could show America, al-Qaeda and the world the kind of power this country possesses and the resolve of this administration to use it where necessary. Thompson told his secretary to hold the call, but she replied that his father had said it was important. Slightly annoyed at being disturbed at this moment of triumph, he excused himself from the meeting and went into his inner office where he could talk in private. He listened as his father spoke just three sentences and then hung up the phone. Thompson flipped through his rolodex for the number of a high level contact at the SEC with whom he maintained informal communications and dialed it directly. He asked his contact for all available information on a company called MAI and a computer trading product called MAIS. Could his father possibly be right? It was very unlikely, but it was better to find out for sure.

Three days later Anya produced a detailed analysis of the three months of MAIS' beta trading activity. She had begun by analyzing the performance only of the stocks specifically targeted by MAIS for trading, then extended it to other firms in the same industry and eventually to the market as a whole. Although the lines of causality were not apparent, she demonstrated statistically that the probability of a direct linkage between success of MAIS and the declining performance of NASDAQ was extremely high, far too high to be dismissed as chance. There was no doubt, she concluded, that they had succeeded in creating a dream product that exceeded the expectations of Wall Street Traders and might be worth hundreds of millions of dollars. But the performance of the product was diametrically opposed to the principles on which they had founded the company.

No matter how much the market might value it, it was clear to Anya that MAIS was a violation of the very principles they set out to uphold. Ray readily endorsed the same view and emphasized the dangers involved in violating SEC regulations. He too did not want to be associated with a product that made a few people rich while undermining the financial stability and financial portfolios of the majority of investors. After all, their intention had been quite the opposite. How could they compromise? Dan said he agreed with the principle, but he was not yet fully convinced of the fact. Vinay took the same view and argued forcefully that Anya's statistical analysis could not be taken as an adequate proof. Vinay consulted one of his MBA professors at Columbia, a leading expert on financial markets, and submitted both the data and the analysis to him for examination. His professor came back a week later. He conceded that Anya's methodology appeared sound, but said that the very idea that MAIS had disturbed the market was too far-fetched to be taken seriously. "When analysis leads to a conclusion that is so far removed from rational expectations, it is better to question the analysis than abandon common sense." Vinay wanted to agree with his professor, but he doubted that such circular logic would go far with his partners. Meanwhile Dan had consulted one of his economics professors at Cal and requested him to also check the findings. The economist was much more ready to concede the possibility that MAIS had caused a ripple or butterfly effect on the market as a whole. Wasn't that what tipping points were all about? He could cite a number of instances in which a minor alteration in the share price of one important stock had sent the market in a different direction. But the professor was unable to state categorically based on the limited data available whether MAIS had actually been responsible for the market collapse.

The inherent ambiguity in their situation severely aggravated the differences among the partners and the tension associated with trying to come to a decision. As the full implications of their situation dawned on them, they found themselves confronting a painful and serious dilemma. Should they consider abandoning MAIS at the very moment when they were assured of financial success that exceeded their wildest expectations? Or should they consider selling the product to Jake or another firm and using the

money to develop another AI product? Or should they try to rectify the inherent defects in MAIS to make it work? After a long, grueling debate and heart searching, they decided to pursue the last of the three options, at least for the moment. They set themselves a ninety-day deadline. Either they must demonstrate that the negative impact of MAIS could be eliminated or they would abandon the product altogether. Vinay was not sure he agreed, but at least it postponed a final decision and gave him time to prove his partners were wrong.

These were strange times. On October 7, California voters elected the Terminator, Arnold Schwarzenegger, as their new Governor in a special recall. Nine days later, the President signed the Iraq War Resolution and the markets began to rise. Within four weeks the NASDAQ rose to twenty-five percent above its all time lowest level in the new millennium. How ironic, Ray thought, that a declaration of war should elevate human hopes and brighten investor confidence! It had taken a second world war to finally disburse the economic gloom of the Great Depression. As every great leader and many lesser men understood, war was a great healer. It made people forget everything else. But Ray made no claims to greatness or leadership and to him the world seemed to be turned on its head.

The three months passed quickly. They worked day and night on modifications of MAIS to see if they could factor out the negative consequences of its positive power. In mid December, Anya ran another round of simulations to see if the changes had worked. When she saw the results, she was in a quandary. She knew how much Vinay had his heart set on the success of MAIS. For him it would mean the fulfillment of a lifetime at age thirty-five. If they decided to drop the program, he would be heartbroken and she dreaded the thought of being the cause. But her analysis was incontrovertible. How could she tell him he had failed when the whole world was willing to appreciate them for what they had created? When she first reported her findings to Vinay in private, he had hoped that she was joking. But he knew that she was incapable of such a cruel joke, even just to tease him for a moment. She saw him sink back in his chair with a forlorn expression on his face that he could not conceal. By nature, Vinay was an incarnation of cheerfulness. The fact that she had so rarely seen him express any shade of sadness and pain made it all the more difficult for her to witness. She saw the struggle going on inside him, which he refused to vocalize to others. At that moment he looked so vulnerable, she was almost afraid.

Vinay was still not convinced. But he knew that Anya would interpret any further protest or argument on his part as mercenary selfishness. Already he sensed that she was disappointed by his defense of MAIS. Trained to the precision of mathematics, she saw everything in simple black or white, true or false terms which had little to do with the ambiguities and vagaries of real life as Vinay understood it. He knew no way to convince her he was right and he hated the idea of being accused of mercenary motives simply because he did not agree with her interpretation of the ambiguous findings.

Just then Dan walked into her office and perceived what was happening. Anya felt sure that he had already expected results of this type and had fortified himself in advance. She had observed him dropping hints to the others for the past two months, as if to prepare them for the worst and help them look beyond to other possibilities. He did not seem to be thinking about his loss at all, but only how the others would react and bear the news. So Anya wasn't surprised when he did not express surprise at her findings. Ray joined them and Dan suggested that they put it to a vote. "This decision is too important to go by simply majority rule. Unless we can unanimously agree on the right course of action, I propose that we allow a dissenting partner to take over MAIS and continue work on it independently." Vinay was deeply moved by Dan's proposal. He immediately understood that Dan was trying to offer him a way by which he could keep MAIS, if he disagreed with the decision of the majority or was unwilling to live by the same values as his partners.

Ray cast the first vote in favor of abandoning MAIS. He said he was convinced both conceptually and practically that the program was defective and he did not have any idea how to eliminate the defects. Anya voted the same way. She explained her own theoretical doubts about the feasibility of the project, but her tone of voice was much more subdued than normal. She clearly felt a conflict in voting to abandon Vinay's dream product. Dan took a different tact. He said he still believed in the original concept which Vinay had given them. He also conceded that the results of their analysis could not be taken as conclusive. But he felt the weight of evidence was against MAIS. He was not willing to abandon the idea of creating the product, but he was in favor of abandoning the current version and waiting until they were in a position to complete the work successfully. That left Vinay with two clear options. Abandon MAIS or abandon MAI and his partners. He had prepared a long speech explaining his thoughts and feelings, but as he sat looking at each of his partners, he decided against expressing them. Anything he said in support of MAIS would be misinterpreted. If he had really been sure that MAIS was defective, he would have abandoned it without hesitation or regret. He was young and confident enough to believe that he had been able to create this opportunity by age thirty-five. He could create another opportunity of equal or greater magnitude in future. But the fact was that he was not sure. He was not convinced about MAIS one way or the other. But he was sure of one thing. He did not want to abandon MAI. He did not want to leave Dan, Ray and Anya. Most

especially, he did not want to leave them with the impression that he was acting on less noble motives than they were. And he admitted to himself, that of the three, Anya's view mattered most to him. Ultimately, Vinay did not decide to follow a mental ideal. He decided to follow his heart. But he could not and would not explain his decision to others. Instead, he simply replied that he too was in favor of abandoning MAIS for the time being.

Ray felt all the disappointment of the other three. Because he was the only one with a family to support, he had the most to lose. Anya knew he was also under constant pressure from his relatives back East. For Ray the greatest disappointment was not the personal loss resulting from MAIS' failure. It was the loss to the world. The idea of creating a product that could create prosperity without simultaneously creating its opposite was inspiring to Ray. As Vinay often said, Ray was an idealist disguised as a businessman, and poorly disguised at that. Anya felt relieved that Vinay had done the right thing, but lacked insight into the factors that had motivated his decision. Only Dan understood the ambiguous logic that motivated Vinay. Dan turned to him and said, "This will go down as the most successful non-product in the history of computing. I do not consider it a failure at all. It is a triumph of values." Anya felt grateful to Dan for those words.

Vinay was not sure what he felt. But having committed himself, he decided not to look back. He sat up straight, managed a brave smile and said, "OK, what next?"

Dan had expected this outcome. Once he had come to clearly understand the source of the problem, he had doubted that he had the knowledge to remedy it. He had spent a good deal of time during these months brooding over what had occurred and trying to discover some apparent meaning behind their meaningless detour into a blind cul-de-sac. He was always searching for meaning. He could not fault their assessment of the need or their qualifications or their intentions in pursuing MAIS. Nor could he deny they had failed, whatever he might say to Vinay to ease the disappointment. It was difficult to swallow the idea that their arduous three year effort had ended with a null result.

Not everyone agreed with their assessment or their decision. Tony Preston argued that MAIS proved it was the best algo on the market and worth a fortune. He said they would be fools if they discontinued it. A few other senior engineers were equally adamant. Jake Talbott called Vinay several times a week asking when the new version of MAIS would be ready. He even offered additional funds to speed development. They had decided not to tell Jake the real problem with MAIS, because they were very sure he would not have perceived it as a problem at all. Hedge fund traders were used to the idea that their job was to beat other people to the pot of gold at the end of the rainbow and ensure there was nothing left when their competitors arrived. They knew how to make money in a falling market as well as a rising one. Of course, it was unlikely that any trader would endorse a product that he actually believed brought down the market—but the very notion was too far fetched even to consider. It never occurred to them that their most fabulous speculative successes were preparing the ground for precisely the devastating failures that suddenly wracked the market after every steep ascent of prices. If Vinay had told Jake about their fears, he would have laughed hysterically in disbelief and then promptly written them a check for fifty or hundred million dollars to relieve them of the problem and their guilty consciences.

In the end they simply told Jake there was a serious defect with MAIS which needed to be corrected before he could safely resume using it. That was something he could understand and given the size of the funds he was managing, it was worth his while to wait until they got it right. But when weeks turned to months, Jake became suspicious that they were simply holding out on him for a better price. He reminded them that even though he was a partner in MAI, he was willing to pay market price for MAI. Jake even called Bill Gershwin and the VC to see if they would help him pressurize Dan and the others to either supply the software or sell him the company for a big profit. Bill replied that he relied entirely on the judgment of Ray and his partners and would not try to influence their decisions. The VC was certainly eager to get a return on his investment, especially given the dismal condition of the market, but there was little he or Jake could do, either separately or in concert. Anyway, he had no reason to doubt that MAIS was defective, otherwise surely the company would have put it on the market and been raking in profits by now.

On Monday, December 30, the Group met and took a decision to cancel the MAIS project. After paying off the subcontractors, Dan proposed that they utilize what remained of Jake's seven million dollars to return the money invested by Bill Gershwin, Jake and the VC and buy back their shares at the original price. That would leave them with barely hundred thousand dollars. In order to allay any suspicions that Jake might have regarding their motives, they offered options to all three investors to repurchase shares at the original price for the next one year.

They dismissed all the staff, except for their first two employees. Limpia had proven herself trustworthy and resourceful. Lauren had handled administrative tasks for the four of them from the day they

opened for business and had become indispensable. Then they renegotiated the lease with their landlord to retain just 25 percent of the existing office space. Ray's wife Rana sold some gold jewelry she had been gifted when she had got married and Bill Gershwin came forward on his own to lend back hundred thousand dollars out of the money they had returned to him.

In January 2004, Anya managed to land a contract assignment from NASA which kept her busy full-time. There was not much the other three could do to help her, since the language she spoke was known only to a rare few, but she managed to pull in enough revenue to just barely keep them fed, clothed and in business after their own capital ran out. On March 19, the first American bombs were dropped on Baghdad. Two weeks later Dan managed to get a contract from Xerox PARC that kept them all engaged full-time for the next six months. Later Vinay pulled in some contracts from his old professor at Columbia University and Ray landed an assignment from the Arlington Institute on an AI project to model the world's greatest threats. It was enough to keep them going and left them evenings and weekends to work on various new product ideas.

Three years after starting MAI and eleven months after suspending work on MAIS, they were still groping to figure out precisely what new product idea to pursue. Not a very auspicious beginning, they all acknowledged, for a company bent on changing the world. Of course, they were not alone. All of Silicon Valley, in fact the whole IT industry, was experiencing the turmoil that inevitably arises when a spurt of explosive growth gives way to confusion and a search for new directions. In their case the timing had been particularly poor. They went into business at precisely the moment when the whole industry was about to take a huge tumble down a long, precipitous hill, a fall from which thousands of better financed, more established firms would never recover.

10. 4th Down & 100

The last one year had been a tough time for all of them—exhausting, stressful, and frustrating—a time that naturally invited self-doubt, self-recrimination and occasional clouds of despair. It was not money, work or bright ideas that kept them afloat during this dark period. It was each other. Gradually a deep bond of friendship and trust grew within the Group. They respected each other and enjoyed working together, but more than that they enjoyed each other—they liked each other deeply and truly. Anya wondered sometimes how they managed to maintain their harmony under such heavy stress. She even surprised herself. In Moscow and at NASA she had acquired a reputation that had been aptly expressed by one of her co-workers by this sign on her door, “Danger, highly explosive when placed under pressure, keep off!” She had been eager to shed that stigma but had never succeeded in the past. But during the past three years she was beginning to feel like a more contented, stable and mature individual, without being able to explain what was happening to her.

She attributed that change more to the understanding and equanimity of her partners than to any improvement on her part. Ray was by nature mild and accommodating. One need only see him at home with his wife Rana to understand that. Contrary to the normal arrangement in Indian marriages, Rana was clearly in charge. “She has discovered,” Ray humorously confided to Vinay, “the true definition of luck. Luck according to my wife, is being born as a man in India or as a woman in America. Nowhere else do women have the status and freedom that they have here. So it was simply of question of which of us would adapt more rapidly and effectively to our unique situation—a Jewish husband learning to dominate his wife or an Indian woman learning to assert authority over her husband. I have to admit she has gotten the better of me so far, but I refuse to admit defeat and I look to you for guidance.” But what Ray lacked in the strength necessary to win a woman’s admiration, he made up for in Anya’s eyes by a soaring idealism which he inherited from his father and a genuine goodwill for people in general which seemed to issue from the depths of his personality. Anya had grown up learning to fend for herself and striving for her own personal achievement, though she had always been taught to believe she should live for others. Ray actually did live for others and delighted in their success.

Anya admired Vinay for different reasons. Although few men might have agreed with her, she always felt ugly in the morning until she put on her makeup and got dressed. But Vinay was polite and considerate at any time of day or night. It was like he took his manners to bed with him and wore those twenty-four hours. She had heard enough about the reputation of domineering Indian males to be highly suspicious of any request or suggestion coming from Vinay, to be sure it did not carry any subtle implication of authority or superior right to command. She had observed with feminine shrewdness the subtle difference in the way Vinay had related to Rana one Sunday when Ray invited them all over for dinner. Vinay had been polite, but in some indefinable manner he had treated Rana differently than he treated American women and Rana seemed to respond to it as natural or inevitable. Anya was very sure she would never endure even the slightest trace of superiority from a man. She had had quite enough of that from her first husband, Alex, for Russian men also claimed a sort of feudal authority over their wives which Anya found intolerable. Taking Anya for granted was the very worst way to win her cooperation on anything. But Vinay never made that mistake with her. He was always the gentleman, no matter how friendly and informal the occasion. He spoke often of his huge extended family in North Kerala, large rural landowners for countless generations, literally hundreds of relatives living in the same small community, children running from house to house and feeling at home in all of them. He spoke of a highly educated grandmother whose sage advice was valued even by the king. He joked that he had learned long ago never to take strong, intelligent, well-educated women for granted. There was nothing of weakness in his behavior, but there was everything of consideration for other people. In him, manners were not an artificial suit of fancy clothes to conceal the contours of a misshapen body. They were a natural expression of a cultured character and a refined temper that was smooth and rounded at the edges, firm and strong, but almost like butter to the touch. She had never met anyone like that or experienced any other person in that way. He possessed a natural aristocracy of bearing without any of the arrogance normally associated with that term. Vinay frequently brought to mind the true significance of a phrase she had first come across in *Hamlet*, ‘to the manner-born.’

It was not as if Anya found him ideal or perfect in any sense of the word- far from it. Vinay could be as provocative and exasperating as any other man when he failed to see things precisely the way he should—meaning as she saw them—but even when he exasperated her, he always did it in a gentlemanly manner. He often had no idea what disturbed her about his behavior, which only made it worse. She had never been fully convinced about his motives in abandoning MAIS. Left to himself, she thought he might well have compromised on principle, and she thought less of him for that. It never occurred to her that his view of things might be more ambiguous than her own. He also exhibited a certain aggressiveness in matters of business and finance, which she found discomforting for some indefinable reason, but that made him the

most qualified of them all for handling the commercial side of the business if there ever was a commercial side, that is.

Dan was a completely different experience. He was patient, tolerant, understanding and cool under fire, but these characteristics seemed to issue more from his aspiration and mental determination than from cultural inheritance. Though he rarely expressed it on the surface, she felt a tension within him between a past he could not fully outgrow and a future he could not fully attain. He had an intense drive for accomplishment, yet not in the personal sense that drove her or the social sense that motivated Vinay or even in the idealistic sense of doing what was right like Ray. If Ray was sympathetic and Vinay was charming, Dan was always understanding and sometimes inspiring. Although Anya knew nothing of Celtic lore; if she had, she would have said Dan had a strong dose of Druid blood in his veins. Of the three she understood Dan the least but respected him the most.

Anya compared herself with her three partners and always found herself wanting. She could make no claim to possessing more than a modicum of Ray's idealism, Vinay's cultural refinement or Dan's inspiration. She was quick to anger and slow to forgive, by nature passionate and combative. Vinay's simple description of her was apt, "either sunny or stormy". The sunny part was like the Riviera during a Nordic winter. It made flowers bloom and hearts expand. Her storms had all the obscurity and turbulence of the mystic Russian soul. When the clouds rolled in, the wise stayed clear. Ray always tried to cheer her and never succeeded. Vinay pretended there was nothing abnormal about her behavior and related to her as usual. Dan simply ignored her at those times. When she was in a combative mood, she found all three responses equally provocative and unsatisfactory. At times like this she wanted someone to fight, but there was no enemy to engage. Just to provoke a response from him, she had accused Dan of being afraid or detached from people and things, but even as the words came out she knew they were not true. He just refused to be provoked. He countered on those occasions that she was angry enough for all four of them. He once told her that the enemy she was looking to engage was inside herself, but that had only made her more furious. Though trusting by nature, she had been infected by the virus of suspicion endemic in Russian academia and found it difficult to shake the disease. She often wondered to herself why her partners tolerated her. Usually she concluded it was because of her mental acuity and mathematical acumen—for she did know she was very bright and her mastery of mathematics was comparable with that of top people in her field. So she justified her presence on the grounds of practical use value. Or she told herself that men liked having a pretty woman in their midst and she knew she was pretty enough to qualify for that post. Anya was not being modest in her self-evaluation, she was simply unconscious of her real merits.

As much as they respected her mind and admired her appearance, her three partners would not have ranked either brains or beauty as her most important attribute. Anya was like a spark of fire which shed light and warmth wherever she was. It was a light that attracted and a warmth that nurtured. In some way, Anya constituted the heart of their partnership, the emotional center at which they all met and bonded. It had not started out that way. But over time the pressure of outer circumstances, the repetition of failures and disappointments acted like the force of millions of tons of earth on the deeper layers of organic material in the soil, compressing plant material into coal, coal into oil and, under the most intense circumstances, into diamonds and other precious gems. The last twelve months of hardship had not produced a single noteworthy product or technological breakthrough, but it had produced something—a human relationship. It was human relationship that kept them together through this difficult period, not work.

Demand for AI products that mimicked the thought processes of a human expert had grown rapidly in the 1970s and 1980s and then gradually declined as the limitations in these systems became apparent. The problem was that no one actually knew how the human mind worked, so trying to imitate it was a particularly hazardous occupation. The inherent limitations in AI systems were camouflaged from the uninitiated by strong growth in demand for applications in such diverse fields as credit evaluation, data mining, fault and fraud detection, financial trading, Internet search engines, language translation, learning systems, manufacturing, medical diagnosis, military intelligence, mineral mining, pest identification in agriculture, space flight, speech recognition, telecommunications and video games. This apparent enigma resulted from the fact that AI systems had proved to be very effective in dealing with purely physical variables, quantitative data and other types of data that readily lent itself to statistical analysis. Where it failed miserably was in dealing with individual human beings and events or in understanding, predicting or interpreting complex forms of human behavior such as political, social, economic and psychological behavior, precisely the type of applications which the Group wanted to tackle with a radically new approach.

During the year they weathered a variety of storms of varying intensity and were subjected to myriad temptations. Whatever might happen to the Internet, AI clearly had a great future. Each of them possessed valuable skills in high demand on the employment market. On average at least one attractive job offer came in each week for one or the other, prompting a personal competition among them to see who

could turn down the biggest offer, until they finally bored of the game. At the end of 2003 they had neither money, nor product, nor employees, nor customers to show for their labored effort and self-sacrifice. They had only each other and in some way each of them had been made better by that association. And they still shared a dream.

Just before Christmas, an incident occurred that stirred old aspirations and disappointments. One afternoon Lauren came into Vinay's office with a big smile on her face and a gift wrapped box in her hands. She told Vinay that she wanted to thank him for the wonderful investment advice he had given her eighteen months earlier. During that time the total value of shares in the four companies he had recommended had risen by forty-six percent. They had earned one hundred thirty-eight dollars on their inheritance. She told Vinay that she knew MAI was in financial difficulties and she wanted to help. She offered to invest her portion of the inheritance, two hundred nineteen dollars, in MAI either as a loan or in return for whatever share of the company the partners felt it was worth. Vinay immediately called Dan on the phone to consult him. Dan walked over to Vinay's office to personally express his warm appreciation to Lauren for her generous offer. He was deeply moved by her confidence in them and her goodwill. But he said the company was not worth anything at the present time and they could not possibly risk her inheritance by accepting it on any terms. Lauren looked genuinely disappointed at his refusal.

Vinay was startled by Lauren's information and somewhat skeptical. Later when he checked NASDAQ and confirmed what she had told him, his surprise turned to bewilderment. In virtually every case the advice MAIS had provided to Jake Talbott had been accompanied by a fall in the value of the stocks MAIS recommended as soon as Jake had sold his shares in them. In Lauren's case the four companies had continued to perform strongly while the market was still in decline. Lauren's success suggested that he may have been right after all. He wondered why his advice to Lauren had not resulted in a collapse of share value similar to that associated with the advice MAIS provided to Jake Talbott. He wondered, "What could possibly be the difference?" He was tempted to reopen old wounds and try again, but knew it was not possible under the present circumstances.

Vinay reported his findings to Dan and they reflected together on its significance. Another possible explanation suggested itself to them. Although MAIS had been designed to support economic fundamentals, the choices made by the trader who operated may have influenced its actual performance. They had assumed that designing algorithms based on the right premises would yield right results. Now they recognized the flaw in that assumption. The software was merely a passive instrument. The conscious intention of the trader determined whether it would be employed positively or negatively. Jake's attitudes and intentions had determined the impact of MAIS on NASDAQ. In Lauren's case, Vinay had generated the recommendations personally and given them to her. Lauren was not out to beat anyone or benefit at someone else's expense. Anyone who knew her would understand that this was diametrically opposed to her character and values. She was one who always delighted in other people's good fortune. They had made a fundamental error in thinking they could design a system that would function independently of the motives of its user. Dan wondered at his own foolishness. How could he have forgotten such a basic premise of Weak AI, when he had been so firmly convinced that it was correct? In actuality, MAIS was an excellent negative confirmation of the principle that AI is only an extension of human consciousness with no independent existence of its own. As it turned out, out of her goodwill Lauren had given them something more valuable than money. She offered them hope.

It was not as if the Group had failed to make any progress during this period. Despite the hardships and limitations, they had produced fragments or elements of AI systems that were truly revolutionary, but remained incomplete. Out of money and out of work, they had been tempted to market their patents on some of these processes to other companies, but most of the companies they approached simply did not understand the significance of what they had achieved, even their AI experts did not understand it. One who did tried to tempt them into selling the patents, rather than licensing their technology, which would have limited MAI's own future product development. After considerable debate, they had turned down a half million dollar offer and decided to persevere. So far, that perseverance had only landed them deeper in debt.

Finally the pressure simply became too much to bear. Dan sensed they could not go on for long without a big breakthrough. Borrowing on their credit cards, they raised enough cash to send Vinay on a three week road trip to see if he could find a buyer for any of their patented algorithms. He arrived back in San Francisco on January 30, 2004 with twenty dollars in his pocket and a letter of interest from one client, Anya's former employer, NASA. Now all they could do is wait for NASA's final decision, a verdict which could very well determine the future of MAI.

11. The Game

Exhausted from his trip, Vinay decided to get away for the weekend and invited his partners to join him for a trip to Squaw Valley. He said he was resolved to learn skiing in order to overcome the stigma tarnishing his name ever since the Boulder trip three years earlier. When they asked how he intended to pay for it, he explained that he still had some spare credit limit on one of his credit cards, and if NASA did not come through, he would accept the next job offer that came along, so he could pay off his debts. Ray said he had promised to spend a rare weekend at home with wife and two daughters. Dan also declined without making any excuses for why. So Anya, Katia and Vinay went off by themselves.

Dan passed Saturday by himself reviewing the events of the past three years and evaluating the decisions he had made in the light of where those decisions had brought him or rather them, because it was essentially his decisions which the Group had accepted. He knew that something was missing in their equation for accomplishment, but he could not explain to himself precisely what it was. Although other people described them as technocrats, they possessed far more of technical and scientific knowledge among them than of the business and managerial acumen needed to run a commercial enterprise. Coming from a whole community of successful entrepreneurs, Vinay was the most commercially-minded of the four. But even he lacked the practical experience to hone his inherited abilities.

It was not merely experience that they lacked. There was something more. In retrospect, Dan could not identify a single decision they had made that he now would have made differently, based on the information available at the time he had to make it. Of course, if had been able to anticipate events, especially the dotcom bust, he would have acted differently. But someone with the foresight to anticipate events of that sort could make billions without even bothering to invent a product. Foresight of that type *is* a product. Yet, he knew deep inside that their current predicament had not been inevitable. It was the result of who they were and the choices they had made. Surely they could have made better, wiser choices. He tried to imagine an AI system that would have made better decisions than they had made. What would such a system need to know that they did not know? What insights or secrets regarding human accomplishment were they missing?

There had to be more to decision-making than the simplistic model on which most AI systems were based. Life is not simply a matter of choosing between attractors—right turn or left turn at each intersection. Even the conventional if-then model and the fuzzy logic of the computational model are gross oversimplifications. They may work satisfactorily for many physical applications, but, as Dan was becoming increasingly aware, Life is not simply a question of measurable physical quantities and qualities. In Life everything is fuzzy. Life attractors such as likes and dislikes, right and wrong, better and worse, pleasing and displeasing defy measurement. Accomplishment in life is about clarity, conviction, commitment, responsibility, determination, perseverance. AI was fine for handling physical processes governed by mathematical formulas, such as Boyle's formula describing the impact of pressure on the volume of gases, or the formula for mechanical advantage describing the factor by which a mechanism such as a lever or pulley multiplies the force put into it. The challenge comes in writing formulas for the evaluation of what AI theorists term propositional attitudes. What, for instance, is the formula describing the impact of psychological stress and tension on the performance of himself and his partners? When does greater pressure elevate creativity and performance and when does it paralyze and incapacitate? What is psychological advantage resulting from faith, self-confidence, and harmonious personal relationships? Without knowledge of these life equations, how could they ever hope to create an AI system for human accomplishment? But how did they know such equations or laws of life even exist?

Whatever it was they were lacking, Dan thought, he could not ask his partners to continue on this course any longer. Ray had a whole family to support. Anya had Katia to think of. Vinay must certainly be under pressure from his family. If none of them would propose it, he would have to do so on their behalf. NASA's response would decide their future.

The following day, February 1, 2004, was Superbowl Sunday. Dan hadn't had either the time or inclination for celebrity football in recent years, though he had been an avid San Francisco 49er fan during and after his college days when Joe Montana led his team to three Superbowl victories with his remarkable capacity for come-from behind leadership. But today he needed something to take his mind off business. He decided to drive over to the office from his apartment in Kensington to pick up some papers and come back in time to watch the game.

On reaching the office, he went through the routine of checking for email, though he expected nothing of significance on a weekend when virtually the whole country had only football on its mind. So he was surprised when he saw the message from NASA in his inbox. From what Vinay had said, he had not

been expecting a response for at least a week. The future had just arrived early, he thought to himself. Expectantly he opened the message. He was somewhat surprised to see it was addressed to him and not to Anya or Vinay. It read:

Based on an overall assessment of capabilities, reliability and price, we regret to inform you that NASA has decided to go with an alternative technology.

Sam Hunt, Project Manager

Astronaut Health and Safety

International Space Station Division

NASA

Dan sank back in the chair and closed his eyes. He did not want to think. Indeed, he could not think. His mind had gone completely blank. He sat motionless in his chair for thirty minutes. He was not thinking about the message, though it was there in front of his eyes. He was not even thinking about the company or the future. In fact, he was not thinking at all. He was just sitting, wondering, feeling the intensity of the moment, shorn of the mental commentator, Descartes' detached witness mind, which is always interpreting what is happening to us, as if it were not personally involved in the experience. Now he was completely alone with himself. There were no witnesses. Eventually Dan leaned forward and shut down the computer, left the office without bothering to take the papers he had come to pick up, and drove home. He thought of calling Ray and Vinay to tell them about the message from NASA, but decided against it. Let them at least enjoy one more day of rest, he thought. They'll learn about it soon enough.

There was still another four hours to wait before the start of the Superbowl game. He turned on the TV and flipped through the stations until he stumbled on the replay of one of the greatest Superbowl contests between the San Francisco 49ers and the heavily favored Cincinnati Bengals in 1989. The second half of the game was just beginning and the teams were tied 3-3. Dan sat back and watched as the Bengals drove down the field twice and built up a 13-6 with less than five minutes remaining to play. They had dominated the game offensively and defensively, although they could not stop Joe Montana in the air. Lounging on the sofa and flipping through a computer magazine, Dan was barely paying attention when Montana connected on a pass to Jerry Rice, who crossed field and outran three Bengals to tie the score with a little over four minutes to go. A few minutes later the Bengals came back with a field goal to put them three points ahead with only 3:10 left on the clock.

The rest of the game made football history. San Francisco got the ball near their own goal line after a penalty on the kickoff. The situation looked hopeless for the 49ers, who had only succeeded in scoring two field goals during the first fifty seven minutes of play. But those who had followed Montana's career knew better than to give up hope before he did. Dan felt the full drama of the situation as he watched Montana come back out on the field bouncing with apparent enthusiasm. Although Dan could not see the quarterback's face, just looking at him he felt sure Montana was enjoying every minute. Starting from their own eight yard line, Montana moved his team down the field smoothly and gracefully, as if he had all the time in the world, reaching the Bengal's 35 yard line before a penalty placed SF back at the 45 with just a minute to go. The stadium was silent and breathless. Montana calmly walked out of the huddle, set and completed a 27-yard pass to Rice, who caught the ball on the 33 and evaded 3 defenders before being tackled on the Bengal's 18. Montana then completed two more passes for the touchdown, that made eight out of nine passes completed on the last drive. He had just won the third of a record-tying four Superbowl victories and a record setting third MVP award. Here was the inspiring real-life story of a man who simply never gave up, a man who during his career led his teams to 31 fourth quarter come-from-behind victories, and this was the most memorable of them all.

The last three minutes of the game were at once breath-taking and exhilarating. Dan had forgotten about the company and the work for the first time in weeks. Still feeling the tension of those closing seconds, he decided to go for a walk in the brisk afternoon air. Without really thinking about it, he headed toward the university campus four miles south. The last thirty minutes of the 49er game kept replaying in his mind. He was filled with a sense of wonder and admiration. After being dominated and squarely beaten for 57 minutes, a team could elevate its performance to such an extent that it accomplished more in the last three minutes than it had in the previous 57. How was it possible? There had to be some principle or rule of life to explain this remarkable phenomenon. Could anyone have predicted this outcome? He was really inspired by Montana's performance. Here was a man who faced the peak crisis of his career. Everyone knew the odds weighed heavily against his team. He must have known that too. But given a tiny crack, a small opening in an apparently hopeless situation, he was able to convert the crack into a window and the window into another Superbowl ring. It was incredible to watch. Dan could not help comparing Montana's situation in that game with his own situation at MAI. He marveled at Montana's confidence, courage, and psychological stamina. By comparison, he felt his own faith and commitment were insignificant.

Brooding in this manner he entered the Oxford Street entrance to the university campus, crossed through the grove of towering Eucalyptus trees, crossed Strawberry Creek, walked past the steps of Sproul Hall where Mario Savio and Joseph Stearne had addressed masses of students during the Free Speech Movement in 1964, and emerged onto Telegraph Ave. He wandered down the street and stopped in front of Shambhala bookstore. The closure of that famous repository of metaphysical wisdom two months earlier, after thirty five years in business, reminded Dan once again of the mystery of human accomplishment. Like Joe Montana, Shambhala had been a celebrity in its own day, a magnet for young minds seeking answers about reality they could not find in a freshman physics course or graduate psychology seminar. He had heard of people traveling a thousand miles to search the comprehensive collection of books in that store in the days before amazon.com made the world's books available everywhere. Dan had spent hours in Shambhala browsing its tomes on the nature of reality, life, mind, free will, consciousness, self, psyche, spirit—Carl Jung's entire collected works, Joseph Campbell's mythologies of the Great Mother, Gergiev, Ouspensky, Swami Yogananda, Swami Ramakrishna, Sri Aurobindo, the I Ching, Upanishads, Tao Te Ching, Tibetan Book of the Dead, the Secret Life of Plants, astrological ephemeris dating back centuries, the Kabbalah, Tarot. Born and bred with the hippy movement, Shambhala had sold them by the thousands, as if they were on the *New York Times* bestseller list. But times were different now. People no longer looked for their answers in the mystical formulas of the distant past. Why should they when science was laying bare the deepest mysteries at the heart of space, time, energy and matter? No secret initiations were necessary, no lifelong apprenticeships at the feet of a master, no esoteric symbolism to decode, and no severe personal austerities—unless, of course, you considered the language of mathematics esoteric and spending twelve hours a day solving multivariate equations an austerity.

Today Dan was no more in a mood for serious philosophy than he was for serious science. He went next door to Moe's used bookstore just to browse. He glanced at the computer science section, but was already familiar with almost all the titles. He browsed the business books looking for something on the secrets of entrepreneurship. He picked up a few titles but found nothing interesting. He wandered upstairs to the third floor and began browsing the large selection of psychology books in the shelf along the wall. Then it happened. As he was kneeling down to examine a title on the lower shelf, a volume fell from the top of the bookcase, eight shelves up, and landed on his lap. Startled, he looked around to see what or who could have caused it to fall. There was no one around. He shook the shelf to see if it was loose, but could not even make it tremble. He picked up the book and examined the cover. It was bound in brown leather, but he could not find any sign of either an author or a title on the outside. Then he turned to the title page. It was blank. No author's name. No publisher. There was no table of contents either. From the appearance of the leather cover and the creased condition of the pages, it was obviously used. The next page was nearly blank except for one enigmatic phrase:

There is only one process of accomplishment in the world. It is valid for all action from the most material to the highest spiritual. It is the process of creation.

Intrigued, Dan opened the book at random. His eye was caught by the following phrase:

Accomplishment is enjoyment. Enjoyment is accomplishment.

The book went on to explain that creativity releases joy and joy releases creativity. It cited as an example the ecstatic joy of human procreation, certainly one of the most intensely enjoyable human experiences and the one in which man and woman come closest to God in their capacity to create, to give life to another human being.

A woman walked past him at that moment. Dan recognized her as one of the sales girls he had frequently seen in the past. He called out asking her the price of the book. She examined it and looked bewildered. The book had no title or author. She had no idea what it was or where it had come from. She had never seen it before. Then she went over to ask the manager. On her return, she said that there was some mistake. This book did not belong to the store. No one had ordered it, stocked it or ever seen it before. Dan insisted that he had found it in the psychology section and wanted to buy it. She conferred again with the manager and then told him he could take it for free.

Dan walked out of the shop as bewildered as the sales staff apparently were. Suddenly he felt a surge of energy course through his mind and nerves. A warm vibrant sensation began to melt the dull ache of sadness buried deep in his heart. He turned toward campus and began the long trek back home, walking briskly with a sensation of physical buoyancy, as if he might be able to walk on water. On the way, his mind returned to Joe Montana and what he had just read in the book. They were the same. Joe was a man who clearly thrived on adversity and rose to the heights of his ability under extreme duress. Simply put, he enjoyed it! Without any conscious resolution, Dan found his own attitude subtly changed. The depressing

atmosphere lifted. The unvoiced sense of hopelessness disappeared. Despite the fact that his entire business was on the point of closure and his career had hit a dead end, he felt cheerful.

When he reached home, Dan sat down on the couch and began reading the book from the first page. He completely forgot about the Superbowl game until a half hour after kick-off. Raising his head from the book, he suddenly recalled the time. Then he went back to reading and never even turned on the TV to find out the score. There was too much to think about.

12. Breaking the News

That night Dan had a strange dream. Dan normally did not remember his dreams, but this one was so vivid and powerful that he felt its lingering effects for several days. In the dream he was crossing a huge park in the dead of night. He was not sure where he was going, but he knew it was very important that he reach that destination. It was pitch dark, except for a sky full of stars and a tiny new moon. He had to strain his eyes to see ahead of him as he walked through the darkness. An eerie feeling came over him of some danger that lay in wait. He was not sure if it was the danger of going off the path and falling into a ravine or the danger of some attack by thieves or animals, but a feeling of anxiety rose up powerfully until he found it difficult to proceed further. Suddenly a woman appeared in his path about ten feet ahead. He stopped when he saw her. She looked at him and smiled with such a joyous, radiant expression that he instantly forgot all his fears and felt safe and warm all over. Even the darkness of the night seemed to recede. After a moment of silence, she spoke five words to him and said these words would be a protection against all the dangers of the night. The words were in an unknown language. When he awoke in the morning, he could still feel the woman's warm presence around him. He felt remarkably fresh. He could make nothing of the dream at the time, except that it felt profoundly reassuring. It was only years later that he would discover its true significance.

He lay in bed for twenty minutes or more trying to recall every detail of the dream and decipher its meaning. Suddenly, he remembered it was Monday morning and he had a very unpleasant task to perform. He had to inform his partners about NASA's response and encourage them to consider their options. Personally, he felt surprisingly calm. He had already made up his mind not to take another job. If none of them remained, he would have to find some other way to continue on his own. But just now he was not thinking about himself. He was thinking about Anya, Ray and Vinay—what they would think, how they would feel, what he could do to soften their disappointment and support their decisions. He had intended to rise early and get to the office before any of the others, but the dream had distracted him and he was already late when he left his apartment.

As he opened the front door of their third storey offices, he could see Anya in her office talking with Ray and Vinay in an animated manner. His first thought was that they must have already seen the message, but when he perceived the smiles on their faces and heard their laughter from a distance, he knew he had been wrong. They must be sharing stories of their weekend adventure, he concluded. When he walked into Anya's room, they all turned towards him with beaming smiles on their faces. They looked so exuberantly happy that he could not bear the thought of spoiling their joy. He returned their smiles and said he was relieved to see Vinay still in one piece. Then he asked Anya for an objective evaluation of Vinay's performance on the slopes. She laughed and said she would be happy to submit a professional scorecard. Then she handed Dan a printed page. Dan glanced down and saw it was an email from their contact at NASA. His nerves tensed. So they had already seen the message, he thought. But then why....? He looked more closely at the message and realized that it was not the one he had read the morning before. It was written by the Project Manager and addressed to Vinay with a copy to Anya.

I apologize for any confusion created by the message sent Friday night, mistakenly addressed to Dan O'Hara. I had instructed my assistant, Alice, to inform the other vendor competing for the personality algorithm contract that they had not been selected for the assignment. The man representing that company is also named Dan. Alice confused the two and sent the message to Dan O'Hara. Having apologized, I am now very pleased to inform you that we are awarding a contract for \$2.5 million to MAI AI. A summary of your assignment is attached. A draft contract will follow.

*Best regards,
Sam Hunt, Project Manager
Astronaut Health and Safety
International Space Station Division*

NASA

Snatching the message from his hands with a mischievous grin, Anya exclaimed with a beam, "Dan, it's a very good thing you did not come in this weekend and read the earlier message. It would have made your weekend miserable! And all for nothing. I'm so glad we all took the weekend off and missed it." The strange expression on Dan's face almost made her doubt her words, until he assured her that his weekend had been very special. She studied his face trying to discern why it looked different than it did, but she could not explain it to herself.

“How about those Patriots, Dan?” Ray spoke with pride. “I told you they would win. That makes twice in three years.” Turning to Anya and Vinay, Ray began narrating details of the game, “Even though Tom Brady passed for a record 354 yards and three touchdowns, the game went down to the wire. Adam Vinatieri kicked the winning field goal with forty one seconds remaining. Patriots 32, Panthers 29. What a game!”

Ray would probably have replayed the whole game for them, if Dan had not intervened. “Kind of like MAI, don’t you think?” he said. “We came down to the wire too, before landing this contract. One way or another, the Pats would have gotten another shot at the title next year. As for MAI, who knows?”

There would be plenty of time to share with his partners his own weekend experience, Dan thought to himself. He did not want to tarnish their joy by recollecting it now. How strange and sudden life is. One moment you are approaching the precipice, the next you find yourself on top of the world. Are there laws that determine such things? Something had happened in the last forty-eight hours that changed everything, but he could not figure out what it was. When he read the NASA email the previous morning, his mind had been numbed by disappointment. Now it was equally numbed by joy. There would be time enough for reflection later on. Now there were other things to think about. NASA had just presented them with the opportunity they had been waiting for.

The International Space Station or ISS had been under construction since 1998. From 2000 onwards, it had housed a three person crew at all times, until the Columbia space shuttle disaster just one year ago on February 1, 2003. After that the crew had been cut back to two, but it was slated to rise up to six persons by Expedition 15. While the physical aspects of crew health and safety had been pretty well ensured, the psychology of small crews remaining together in a confined microgravity environment for periods of up to six months is still fraught with problems. Given the very small size of the crew, first priority in selecting crew members had to be given to ensuring that they were endowed with the physical health and stamina, psychological stability, scientific knowledge and complementary skill sets required for the mission. That left little scope for considering the psychological complementarity of the individual members or their capacity to work and live harmoniously at close quarters for extended periods of time. Add to that the fact that crew members from fourteen different nationalities were slated for residence on the ISS over the next few years, and the challenge of psychological compatibility appeared even more daunting. If so many newly married couples attracted to one another by professions of mutual love and affection are unable to avoid stressful confrontations in a normal physical and social environment for even the first few honeymoon months after marriage, how are people with no prior relationship or basis for attraction or compatibility to do so under the stress and strain of life on the ISS?

NASA posed the problem to more than a dozen vendors. All of them, except MAI, had offered to provide psychological profiling tools to aid the selection of crew members according to their compatibility with one another. NASA had rejected all these proposals as impractical. It was not possible to select crew members based on their compatibility with one another, because there were too many other essential physical, intellectual and psychological factors that had to be taken into account in identifying qualified individuals. Besides, individual members kept changing over time depending on the particular skill sets required at a given moment. Adding the requirement of compatibility—whatever that actually means—would interfere with optimal selection on critical technical criteria.

MAI’s approach had been different. Dan had argued in their brief to NASA that the way in which individual crew members respond to the stress of life on the ISS depends as much on the way the group responds as on their own individual characteristics. Profiling for certain traits among its individual members was not sufficient to ensure group success. What would be the criteria for selection?, he had asked, similarity or difference? With regard to marriage, neither criteria was an accurate predictor of success. People who are too similar often bore each other. People of opposite types are often attracted to what they are not. If relationships were confined to work situations during a portion of each day, they might select solely for team-working skills. But these people had to live together as intimately as married couples without a break. How many marriages could survive under these circumstances? If all the crew members were selected for their similarities, would the ISS be deprived of critical capabilities required during challenging times? Wasn’t that the underlying philosophical justification for genetic variation?

Passive profiling was based on the Cartesian view of the scientist as an uninvolved observer. AI profiling systems acted as independent witnesses to the problem, assessing crew members like an armchair Freudian psychoanalyst who draws observations about patients lying on the couch. Instead of preselecting compatible people to compose an optimal group, MAI proposed to develop an AI system that would help whichever members were selected to live and work together as harmoniously as possible. Instead of passive psychological profiling, they proposed active and dynamic interaction between the system and the users. The

psychological AI system or PAIS would become part of the shared consciousness of the ISS community. It would play the role of a virtual counselor to help each member of the crew cope with their own internal tensions and avoid or control confrontations with one another. It would not be an independent center of consciousness but rather an instrument or tool to augment the consciousness of the whole group. That was the concept and the proposal they had submitted to NASA. That was the system NASA had chosen. The only problem was that a system for psychological decision-making such as they had described in their proposal simply did not exist. They would have to create one for the first time.

According to Ray, the problem was still greater. An effective model for psychological harmony between individuals and groups did not really exist. As he put it, “Essentially, there is no such thing as a theory of peace. Tens of thousands of books have been written about war—waging, winning and avoiding it. But not a single valid theory exists that identifies the factors and forces responsible for peace. In fact, we do not even have a good definition for peace. Peace is commonly defined as the absence of conflict, violence or war. That only tells us what it is not, not what it is. Preventing war or ending war is not synonymous with peace. Those are negative states. If our objective is to develop PAIS as an instrument to build positive, harmonious relationships that are resistant to conflict—that are the very opposite of conflict—then we need first to understand the theoretical basis for stable, lasting, harmonious human relationships. The irony is that peace is the normal state, conflict is the exception; yet we know much more about the exception than we do about the norm. What does that say about our knowledge of human beings?”

“Speaking of irony,” Vinay added. “A few months ago we were about to revolutionize global financial markets with MAIS. Today we are talking about creating a program to help three or four people get on together without quarreling!”

“Look at the bright side, Vinay,” Ray replied. “At least the SEC has no jurisdiction over the ISS.”

On February 2, 2004, the Group put making money behind them and set about making peace.

13. Reflections

It was past 9:00 pm when Dan got home that night. They had not really done anything all day long, but everyone was so relieved by the news from NASA that no one felt like leaving and Anya arranged for an Italian dinner to be delivered so they could dine in the privacy of their own board room. Dan sank onto the sofa and fell deep into thought. Life was suddenly moving so quickly, his mind needed time to catch up with his experience. The past few days replayed themselves before his open eyes at high speed like a DVD on fast forward - first, the sense of being at the end of the road which he felt just three days before the email message confirming that it was the end, the exhilaration he felt watching Joe Montana turn desperation into victory at the last moment, the feeling of peace and fullness he had felt when the mysterious book inexplicably fell off the shelf, his dream last night about unknown danger and protection from an unknown source, finally the second message from NASA converting the precipice into an unprecedented opportunity. All these things had happened so quickly and apparently without any initiative on his part.

Dan had just been a passive witness to events unfolding before his eyes, events of crucial importance to his future. Was life really like that, he wondered? Was Descartes correct when he depicted the scientist as an impartial, detached observer? Judging from the events of the past few days, it looked that way. Surely, there must be a relationship between what he did and what happened to him. Dan's eye was suddenly attracted to the leather bound book lying on the table in front of him. He leaned forward and picked it up. Was it chance that made this book fall into his lap as he knelt in front of the bookshelf at Moe's? Like Quantum Theorists in physics, Strong AI advocates viewed life events as a question of statistical probability. Could Dent and his followers be right that chance is the real determinant of results? He suddenly recalled something Joseph Stearne had said in Fort Lauderdale. "If there is only iron law of nature combined with freak happenstance, we have no freedom, only conditioning and blind chance." Was accomplishment really only a question of being in the right place at the right time—of being lucky? Is this what life is really all about? Dan opened *The Book* at random and began reading. One sentence in particular caught his attention.

The events of our lives appear to lack coherence due to a limitation in our understanding. Those who perceive the true character of life realize that it has a complete connected significance.

At first he could not say precisely what intrigued him so much about this passage. He read it over and over. There was something he was missing. Suddenly, three ordinary words stood out in stark relief from the rest—*character of life*. That was it. The author was saying that life has a character. The statement sounded sensible enough. Everything has a character—objects, plants, animals, people, countries, languages. That is self-evident, even obvious. Everything, except life, that is. Life is the one thing that appears to have no clear and consistent pattern. We often hear the phrase *life is like that*, but what we usually mean is that life is unpredictable and inexplicable. The word character implies structure and pattern. A person with character is one who acts in predictable ways, regardless of the situation. Yet this is precisely the opposite of the way life events appear to behave. They are unpredictable. No matter what we do and how hard we try, we can never anticipate or account for the intervention of chance, either in the form of luck or misfortune. Was *The Book* actually saying that behind the apparently fickle and fortuitous behavior of life there was a concealed structure or pattern, a formula or a law?

A week later the contract from NASA arrived. Everything was exactly as they had anticipated, except the timeframe for delivery and the terms of payment. They had thought they would have eighteen months to develop PAIS, but NASA was asking for it in twelve. They anticipated monthly payments against work completed, but NASA had offered only an advance of one hundred twenty-five thousand dollars and further installments only after they delivered a Proof of Concept, clear evidence that they had a viable design strategy to create the product described in their proposal. These terms complicated matters significantly. In order to abridge the implementation time, they would have to outsource part of the work and in order to do that, they needed money. The one hundred twenty-five thousand dollars would just go far enough to pay urgent bills and keep them afloat for a few months until they could complete the proof of concept. If they spent it on outsourcing, they'd have nothing to live on. If they didn't, meeting the five month schedule appeared impossible. Having offered them the opportunity they had been waiting for, life presented them with untenable conditions that negated the value of the gift. Regardless, they saw no alternative but to accept the terms NASA offered and make the best of it.

They began work without any idea of how to resolve this dilemma. Ray focused his efforts on researching alternative conceptions of harmony between small groups. Dan examined alternative models for

psychologically profiling group members and principles describing the interaction between different types. Vinay began developing conflict situation scenarios for testing in the prototype. Anya continued her earlier work on conversion of personality variables into algorithms. The pressure of time and money focused their energies, generating an intensely concentrated work atmosphere; intensely demanding, but buoyed by the feeling that they were close to a breakthrough. They all began to look worse for the long hours and frustrating tension of trying to create an original product according to a schedule more suited for a standard production run. Anya fretted the most, but she fretted cheerfully, if such a thing is possible.

In his free moments, Dan read excerpts from *The Book*. He did not approach it systematically. He began by browsing here and there and trying to grasp the overall scope and direction by a haphazard sampling of material on subjects that attracted his attention. Questions about the book's conception of life continued to puzzle him and elude solution. Just then an incident occurred which brought the issue into clearer focus. The four partners had just completed a five hour meeting to chart out a far more detailed project plan and schedule than they had prepared thus far. The schedule revealed that their earlier projection of eight months had been unrealistic. With present resources, it might well require ten. They examined every conceivable strategy and option for abridging development time and succeeded in bringing the schedule down to nine months. Just as the meeting was ending, Anya received a call from a man named Andre. Anya spoke with him in a mixture of Russian and English that became more and more animated as the minutes passed, eventually attracting the attention of her partners who had been finalizing the last few details of the plan. Gradually she reverted entirely to Russian and began to walk rapidly around the room issuing exclamations of joy alternating with what appeared to be professions of intense love. Even though he made no claim of his own, Vinay could not help feeling slightly jealous of this unknown contender for Anya's affections. But when she finally completed the call, she made amends for any anxiety she may have caused by promptly hugging Vinay who happened to be situated closest to her.

Anya explained that Andre was an old colleague from the Institute in Moscow, whom she had not seen or heard from for the past seven years. He told her he had contacted NASA asking for her and obtained her current number from her previous employer. Three years ago, Andre and three other colleagues whom Anya knew left the Institute and set up their own company in Moscow working for multinational corporations in Moscow and overseas. Their company had grown to twenty programmers and Andre was looking for more work. When Anya told him about the current project, Andre identified four members of his staff with specific expertise in closely related fields. By the end of the call, he had agreed to provide one man-year of consulting time for PAIS and defer payment until NASA approved their concept. When Vinay inquired about the reason Andre offered this cooperation in spite of the risks, Anya blushed and replied, "I suppose Andre found the project intellectually challenging. What other possible reason could there be?" Then they all laughed in unison.

That evening Dan was again struck by the role of chance in their lives, at least of what appeared to be chance. Could it be purely a coincidence, he asked, that the very moment they complete the project plan, a long forgotten contact calls offering to provide exactly the assistance they require to meet an otherwise impossible schedule? The more he thought about his past life, the more instances he could recall of similar occurrences. He became increasingly aware of the presence of a mysterious player in a game which he had formerly thought he was playing by himself. He saw the vague outlines of a pattern, too hazy to identify or interpret, yet too vivid to dismiss as chance or imagination. He felt there was a mechanism connecting events, but he could not discern the links between them or their causal relationship.

The next morning Dan arrived at the office an hour late. His partners were discussing something in the conference room. He walked into the room and said, "I have a story I need to tell you." He then proceeded to narrate his version of the events that had occurred over the past ten days. He told them of receiving the first email from NASA, the replay of the old 49ers game, *The Book* falling off the shelf, his dream, the second email message and finally the call from Andre. He explained the questions that these events raised in his mind and the answers he had found in *The Book*.

"Where is this *Book*?" Ray asked.

Dan reached into his briefcase, removed it and handed it to Ray. Ray examined the cover, opened it and flipped through some of the pages, then passed it to Anya who was sitting next to him. She and Vinay went through the same motions. "You mean to say you lived with the idea that MAI was finished for 24 hours and never even mentioned what you had gone through?" Anya asked. "Why didn't you call us that Sunday or say something when we met yesterday?"

Dan tried to explain his feelings at the time, but he said, “The important thing is not what I said or did. The important thing is this book. I have only read a few pages here and there, but I have a feeling this book is extremely important to our future and to the future of MAI.”

“Important in what way?” Vinay asked.

Dan shook his head. “I really cannot say. But since the moment I found it, the world looks very different to me, as if I never really saw what was happening before. I don’t know how to explain it. During my first year at Cal, I began to notice that I was having difficulty reading the black board from the back of the room in some of my large freshman classes. I noticed other people did not seem to have the same trouble. It had never occurred to me that all the reading I was doing had affected my vision. I can still remember the day I walked out of the School of Optometry with my first pair of glasses. I was amazed to see the vividly fine detail of the leaves on the trees. Only then I realized how much my vision had become impaired. Well, my feeling now is similar in a way, but also different. I do not feel as though I am recovering something that I lost. I feel as though I am seeing clearly for the first time, seeing things that I never noticed before.”

Anya was intrigued. “What kind of things, Dan?”

“Patterns of events, how things suddenly happen without our planning or taking any initiative, such as *The Book* falling or Andre calling. I don’t actually see the patterns. I sense them. I sense that there is a meaning or an explanation for what appears to happen by chance, but I am unable to make the right connections. I don’t even know where to look. It’s as if there is a formula that explains the sequence of events and the timing, but I am not able to figure out what it is. I have never felt this way before. In a sense I feel more ignorant than ever, but somehow more aware, more conscious of my ignorance.”

“I still cannot see the connection with the book,” Ray said.

“It is *The Book* that has made me conscious. I have read very little so far and most of what I have read is far from clear. But I believe it contains the answers to the questions running through my mind. More importantly, I believe it may provide the solution we need for PAIS. But I need time to study it and find out.”

That evening when Dan returned home, he opened *The Book* and read further.

Life then is a dynamic play of a universal Energy, a Conscious Force, that builds and maintains the world.

He struggled to grasp what that author meant by life. It differed so radically from the scientific conception that it was difficult to comprehend. Life, as we know it, is a property of material systems. In the language of systems theorists like Dent, it is an emergent property of material forms that mysteriously manifests under the right conditions. Each biological form exhibits those characteristics of life, but we do not regard it as a universal force in any sense. It exists only individually. Why does the author write Conscious Force? It is true that life forms do exhibit various degrees of consciousness. Just because amoebae and paramecia respond to physical stimuli in their environment or plants sense the presence of sunlight and water, can we call them conscious?

Intrigued, Dan read further, struggling to grasp the intended meaning. He felt like his whole understanding of the world was being turned upside down or inside out - as the students of Copernicus must have felt when he told them the earth revolves around the sun and not vice versa, or as physicists felt when Einstein discovered that space bends and time moves at different speeds. He closed his eyes and tried to imagine life as a universal, conscious force. That would mean that life was not merely something inside him. Rather it would be that he was in some way inside of life, a form through which its force express, a player in its universal, dynamic game. But that only brought him back to his original question. What or who determines the results in this game called life? What is the role of chance? What is the role of free will? What had made this book fall? Why had he passed through the enlightening agony of reading the erroneous message from NASA, while his colleagues had passed their time in blissful ignorance? Was Joe Montana’s come-from-behind victory or the last minute win by the Patriots the results of chance or effort or some indecipherable combination of the two? Surely there must have been hundreds of moments in either game when an infinitesimal alteration of circumstances could have changed the final outcome—a ball nearly fumbled or barely recovered in time, a pass just a little too high or low for the receiver or the defender to grasp, a runner’s or linebacker’s instinct to move left or right determining the outcome of a big play, the referee’s placement of the ball an inch one way or another determining whether a touchdown drive

continued or stalled. What was the meaning of calling Joe Montana one of the greatest quarterbacks to ever play the game if victory or defeat so heavily depended on infinitesimally small events? Was it luck that made things go in Joe's favor more often than against him? Surely he had what appeared to be good luck at several points in Sunday's game. Don't we all? Or is *The Book* saying that what we perceive as luck or chance is really the play of a universal force? And if so, what or who determines the action of that force? Is it completely unrelated to what we are and what we do? Intuitively, Dan found that idea unacceptable. It did not conform to his own experience or to the record left by high achievers. Many of them spoke of being supported by some force of destiny or fate, but they all insisted that their own actions were crucially important. If our actions influence the action of that force, how and in what manner do they do that? Had he done something that determined the course of last weekend's events?

His mind came back to *The Book*. The first law of motion tells us that an object at rest remains at rest unless a force is applied to it. What was the force that had made it fall? Was it some imperceptible physical tremor in the bookshelf? He doubted it. Was it something in him? Was it what the author calls Life? Lost in contemplation of these questions, his mind gradually spent all the accumulated energy resulting from the tension and exhilaration of recent events. He fell into a deep sleep on the sofa with *The Book* resting in his lap. He dreamed of Joe Montana bouncing out onto the field in joyous anticipation during the last three minutes of the game, silently repeating to himself like a mantra, "Accomplishment is enjoyment. Enjoyment is accomplishment."

14. The Hunter

The day after Diego's call, Simon landed at SFO and drove over to Berkeley. He knew he had to move quickly before the trail vanished. Fortunately, the manager at Moe's had confirmed on the phone that the store retained the footage from their security cameras for thirty days and he appeared quite willing to cooperate with the FBI. You could never tell how people might react in a radical haven like Berkeley. But apparently Moe's was as anxious to catch counterfeiters as other law abiding merchants and ready to make available their surveillance tapes without the need for legal coercion.

Simon flashed his credentials to the store manager and described the man they were looking for—thirty-five years old, medium height, sandy hair and wearing a Cal sweatshirt. The probable date was slightly more problematic. Most likely he would have come in around the first of the month. Yes, the FBI already had received confirmed reports that a person of that description had been seen coming out of Moe's. What they needed now was a clear photographic image to circulate to the local police. Simon found the task more daunting than he had imagined. He had not been in Moe's for more than thirty years and it was now very different than the store he remembered. Obviously Moe had prospered during the intervening period. What had once been a single story of used books and music now consisted of four floors and a basement level lined with bookshelves. The store had more than thirty surveillance cameras. He asked the manager for the front entrance surveillance tapes for the past seven days and sat down with a cup of coffee to slog through the one hundred hours of tapes. He did not mind going through a thousand hours of tapes if it would lead him to *The Book*. He placed the tape for February 1 on fast forward and sat back to monitor visitors walking in the front door. Midway through the third tape, he suddenly sprang to alertness. A man exactly fitting Diego's description had just walked in. Simon stopped the tape and took a close-up screen shot of his face. That was what he had come for. But now that he was here, he wanted to make absolutely sure. He continued to run the tape. Just thirty minutes later on the timer, the same man walked out of the store with a brown book in one hand. Simon grinned and chuckled to himself. This was going to be far easier than he had imagined.

Simon then reviewed the tape for the check out counter at the front of the store, but was surprised to find that the customer did not appear on that camera. "Then how did he purchase the book?" Simon asked the manager. The manager reviewed the computer records for all sales that had taken place within the thirty minute period the man had been in the store. He observed that since it was Superbowl Sunday there had been very little traffic and less than a dozen transactions. None of the purchases corresponded to the brown book observed in the tape. It was only then that the manager recalled the strange incident that had occurred. A customer fitting the same description reportedly found a book in the psychology section which had no title, author, publisher or price. The manager could not find any record of the book and had ultimately instructed the sales clerk to let the customer have it free of charge. The man had claimed it fell off the top shelf of the wall bookcase on the third floor.

Simon asked to see the corresponding surveillance tape of the psychology section. It happened just as the customer had reported. As the man was walking down the aisle in the psychology section, *The Book* had indeed fallen off the top shelf. The manager laughed as he watched the scene and marveled at the curiosity of the coincidence. Simon found nothing to laugh about. On the contrary, what he saw was deeply disturbing. There could be no question about it for one who had the knowledge. *The Book* had chosen the man.

15. Mind vs. Brain

The brain is an instrument, not the creator of thought. Mind is anterior to the instrument.

The Book

Early each morning Dan turned to *The Book* and spent an hour or more trying to decipher its insights into the nature and character of life. He tried to understand his own life and work in the context of what was written there—to understand the chain of events that had led him from a family of Irish immigrants in Brooklyn to an eclectic group of hackers trying to create something that has never existed before. Gradually the concept of life and the principles governing it became clearer, but he was not yet able to apply them specifically to his own personal experience. One night after a long day at the office and a quick take-out Chinese dinner, he suddenly got an idea. He went over to his computer and Googled the phrase *character of life*. Scrolling through the search results, an entry jumped out at him. He clicked on the url and began reading. Although the language was distinctively different from that used by the author of *The Book*, the subject matter seemed to be closely related. Dan got the clear impression that whoever had written this article was familiar with the thought content of *The Book* and was basing himself on the same knowledge.

Where *The Book* presently had impersonal principles and theoretical explanations, the article on the web was full of practical examples from biography, history and literature. At first the reference to examples from fiction bothered him and he passed over them in favor of real life instances. But he soon realized that he actually learned much more from the literary examples than from the others. In biography, we normally learn about a person primarily from what others observe and think about him. But in fiction, the author takes us into the mind and feeling of many characters and reveals the varying perspectives, motives and attitudes with which they experience the same event. Although the events may be fictitious, Dan found that the characterizations of personality and the responses of those personalities to events were very true to his own experience.

The article described a crucial incident from Alexandre Dumas' *The Count of Monte Cristo*, a novel Dan had read and enjoyed one summer during college, but never thought about as anything more than pure entertainment. In the story, the young sailor, Edmond Dantes, is sentenced to life imprisonment on false charges and thrown into a dungeon in the dreaded island prison, Chateau d'If. After four years of isolated confinement without any knowledge of why he has been imprisoned or any hope of release, Edmond decides to starve himself to death. After four days without nourishment and on the very brink of death, he hears a strange scratching sound inside the wall of his cell. He suspects that it might be another prisoner trying to tunnel an escape route. A short while after, he and the other prisoner, Abbe Faria, make contact through the wall. Faria shares with Edmond a rich storehouse of wisdom, knowledge and life experience and eventually bequeaths to him the map to a fabulous treasure. The story is fantastic, but Dan now sees that the character of life in the story closely parallels their own experience at MAI. At the very moment when Dan was ready to acknowledge that the situation was helpless and encourage his partners to seek other work to support themselves, *The Book* had fallen off the shelf and the contract from NASA had suddenly materialized. Suppose *The Book* had fallen off the shelf five minutes earlier or five minutes later, someone else may have found it, but not him. It happened precisely while he was kneeling below that very same shelf. Suppose NASA had awarded the contract two weeks later, the other three may have already taken up new work assignments with other companies. Why now? He still did not understand why they had come at this moment, any more than why Abbe Faria had mistakenly tunneled into Edmond's cell at the moment he was on the verge of death, rather than a week earlier or two days later. He did not know the answer, but he saw clearly the same pattern. Unexpected life events occurring precisely at the crucial moment converted near tragedy for Edmond into immortal romance and converted failure into opportunity for MAI.

Dan finished reading the article on his computer display and then moved on in search of similar articles, but he could not find any listed among the first two hundred search results Google presented. He sent a brief email to Ray along with a copy of this link explaining what it was and suggesting he might find it interesting. Then he retired for the night.

Dan rose earlier the next morning, picked up *The Book* and looked for another recurring theme that he could search for on the Internet. He Googled the phrase *brain is the instrument of mind*. The precise relationship between brain and conscious mind is central to theories of artificial intelligence. Benjamin Dent was in the forefront of philosophers and biologists who affirmed an integrationist view, which essentially reduced all human consciousness and mental experience to physical events involving chemical reactions and electrical impulses. This view was essential to the Strong AI position, because then and only then could computers hope—or, if you prefer, could AI scientists hope on behalf of computers—that one day AI systems could emulate or exceed all the mental capacities of the human being. The secret of consciousness was the

last bastion of those who refused to surrender to a purely materialistic view of reality. Stearne was one of the last holdouts to still command intellectual respect.

Dan waded through dozens of search results, but at first could come up with nothing promising, except an article about Sir John Carew Eccles, an Australian neurophysiologist (considered by many as one of the greatest neuroscientists of the century) who shared the 1963 Nobel Prize in Physiology or Medicine for his work on transmission by neural synapses. While almost all neurologists had accepted the reductionist view, Eccles had remained a skeptic. Together with the eminent philosopher of science, Karl Popper, he persisted in the view that mind and consciousness were different from - though closely related to - brain function. Eccles believed that mind played an active role in governing brain activity, though he had no more idea of the actual mechanism linking them than contemporary neurologists know how brain activity can generate conscious experience, subjective self-experience, and the sense of free will. Dan found the article fascinating, but he knew that few scientists would dare endorse such a view today in the face of what Eccles derided as promissory materialism. Dan printed an article containing the following quote for future reference.

The human mystery is incredibly demeaned by scientific reductionism, with its claim in promissory materialism to account eventually for all of the spiritual world in terms of patterns of neuronal activity. This belief must be classed as a superstition.

Eccles himself would be derided as superstitious today for believing that any aspect of human personality and consciousness cannot ultimately be reduced to electromagnetic waves and quantum events.

Dan was convinced that an understanding of the precise relationship between brain and consciousness was essential for creating the kind of relationship between computers and human beings which PAIS would involve. He continued his search on the Internet. Finally he came across an essay on the problem of consciousness that seemed to closely parallel a passage he had read in *The Book*. Once again, the writing style was different but the thought content was similar. He was particularly struck by a passage in this article linking the problem of mind and brain to the problem of chance and necessity. The author argued that both are founded on the same fundamental misconception and that an effort to unify them at the physical level resulted in blatant absurdities. Rather than forcing facts into an illogical structure, the author argued for an alternative approach—precisely the approach which *The Book* seemed to advocate, as far as Dan had been able to grasp it.

By what properties of material energy and substance do higher mental faculties such as perception, symbolic language, abstract thinking, association, judgment, memory, values and imagination arise? Only by a far stretch of imagination can they be reduced to electrical circuitry. By what combination of chance, necessity and self-organization do human minds synthesize the grandeur of Beethoven's symphonies, the illuminating insights of Einstein, or the dramatic poetry of King Lear? What inherent determinates in material energy and substance account for these creative faculties? Taken individually and together, these questions compel rational minds to explore alternative hypotheses in the search for more satisfactory explanations. Rather than striving to fit everything within the ill-fitting formulas of material necessity and chance, we are compelled to ask whether there is any alternative hypothesis that will more adequately account for both the fixed patterns and infinite variation in Nature.

The quest for unification is considered the greatest pursuit in science. To discover that two apparently unrelated phenomena are expressions of a single underlying principle is the hallmark of great theory. Descartes unified algebra and geometry into analytic geometry. Newton unified uniform motion and rest showing that both adhere to the same universal laws. Maxwell unified electricity and magnetism within a single field theory of electromagnetism. Einstein unified both Newton's and Maxwell's discoveries into the special theory of relativity. He unified constant velocity and accelerated motion, gravity and acceleration, the gravitational field with the geometry of space and time, space and time themselves into space-time. Today physicists were in search of the ultimate unification known as the unified field theory linking quantum theory with relativity theory. The theory of strings is the current favorite contender. But sometimes the haste for unification leads to the adoption of gross oversimplifications—reducing everything to one side of the equation even when rationality and reality starkly protest—and the rejection of alternative hypotheses without giving them serious consideration. Theological intolerance for dissent is not a monopoly of religion. Dan was afraid that when it came to the question of mind and consciousness, the neuroscientists had triumphed without a serious fight. If they were right, they would soon produce a computer with all the characteristics of human mind and consciousness. If they were wrong—and Dan was certain they were—it would lead to a dead

end—supercomputers of prodigious memory and lightening speed that are no more endowed with real consciousness than a pocket calculator, though they may feign the real thing as well as a holographic image.

The overhasty unification of brain and mind lay at the heart of the problem. Eventually theorists will be forced to reconsider their assumptions. The article presented the simple analogy of a television set to distinguish between mind and brain. A primitive man seeing a TV for the first time would naturally conclude that the people he sees on the screen are somehow contained inside the set. What else could he possibly conclude? For to consider an alternative viewpoint, he has to first concede that the voices and images of real people can be converted into invisible waves, transmitted over long distances and rematerialized at the other end, notions that are utterly preposterous. If a television set can receive and translate electromagnetic waves into sound and picture, why can't the human brain act in similar fashion? Is it any more realistic to believe that atoms and molecules self-constitute themselves into Shakespeare's love sonnets and da Vinci's Mona Lisa?

Dan printed out the article and began to read from the printed copy. It went on to address an even more fundamental problem with the materialist hypothesis of mind—the problem of the knower. It argued that for there to be knowledge, three things are required—the knower, the object of knowledge and the act of knowing. Any valid theory of knowledge must first establish the existence and define the nature of the knower. If matter and material energy alone exist and consciousness itself is only a phenomenal appearance of electro-chemical processes, who or what observes those processes and codifies them as science? Who is the witness to the phenomenon of nature? Who is the scientist and what is the validity of his position as observer? Who is asking for proof or evaluation evidence? In the materialist hypothesis, there is room only for interactions between objects. The subject knower and the act of knowing have no valid status. Then the question becomes not whether the materialist view is rational, but whether rationality, knowledge and scientific truth have any meaning according to the materialist view.

Assuming that what they cannot physically sense cannot exist, materialists abolished the observer, thereby undermining their own status as scientists as well the status of scientific knowledge itself! This inconsistency points to a deeper problem with the materialist and mechanistic hypothesis—the problem of explaining the most fundamental of all human experiences, the sense of individuality, of self, that something in us that says “I am, I know, I will, I choose, I feel, I sense, I act.” Until the nature of that witness consciousness is explained, nothing fundamental is explained about the nature of knowing and knowledge.

In the midst of his reading, Dan received a reply to his email from Ray stating that the link he had sent the night before was not operational. Puzzled, Dan went back to the original link about the character of life. To his surprise, the web address generated an error. He repeated the steps several times but each time came to a blank page. Refusing to believe what was happening, he tried loading the article from his computer cache. Again it came back with a blank page. He was bewildered. It seemed very unlikely that the page had been removed within eight hours after he had loaded it, but he could think of no other explanation. He then sent Ray a link to the article on brain and mind and went to take a shower.

While he was eating breakfast twenty minutes later, Dan heard the sound of another email arriving at his inbox. He went over to his computer and saw another message from Ray. When he read it, he thought it must be a joke. Once again Ray reported that the url Dan sent him for the article on mind and brain did not work. Dan sat down and once again went to the web address which housed the article on brain and mind. He could not longer access it! Confused and frustrated, he picked up the copy of the article he had printed and left for the office. At least he could prove to Ray that an article actually had existed just a few minutes ago. As he went out the door, he laughed to himself, “I wonder, is it my mind that is playing tricks on me or is it my brain?”

16. The Dilemma

Dan found very little time to think about that question. Although he was fascinated by what he read in *The Book*, he was also becoming increasingly anxious about their lack of progress on the proof of concept for PAIS. At times he blamed himself for being distracted by *The Book* and resolved to put it aside until work at MAI was moving smoothly. But at other times he felt a compelling need to return to *The Book* precisely because he needed answers to questions and he knew no other place to look for them. Already three weeks had passed since NASA had confirmed their order, two weeks since they had received and signed the contract. Dan was painfully conscious of the need for speed, but speed would only be effective when it was backed by clarity. Knowledge was even more important than speed. Without clarity, they might simply be rushing down a blind alley and discover too late that they had set out in the wrong direction or made wrong choices at critical decision points. As the days turned into weeks, Dan became increasingly aware that they, that he, lacked crucial knowledge required to complete PAIS. He began to reflect on their situation. How to develop a proof of concept for a product that has never been created before and no one is qualified to create? He was not even sure what knowledge they needed to acquire.

The real nature of their predicament became clear to him one morning when he walked into the office and overheard Anya telling Vinay of a dream she had had the night before. She was in a large wooden house that was under construction. The wooden scaffolding for the outer and inner walls was complete but had not yet been enclosed. She had to walk carefully inside to avoid falling through the beams into the dark basement below. She came to a stairway that led up to the second floor, but instead of stopping there she saw that it kept on going up flight after flight in a straight angle of vision for what looked like nine or ten floors that did not even exist yet. She felt awed and frightened by the towering height of the stairs. Suddenly she looked down at herself and realized she was only a small child and as she did so the height of each stair rose so that she had to stand tip toe in order to see over the edge of the next step. How was she ever to climb steps so big and so many? Anya told Vinay that this house reminded her of a house she had visited as a child in St. Petersburg, then Leningrad. It was one of the few old buildings that had survived the revolution and the war. Her parents brought her there from Moscow on vacation and took her to a museum that was lodged in the building. It had broad stairways that rose five stories, though not in a straight line as in her dream. As they walked through the museum, she asked her mother whether they would ever have a house like this one. Her mother bent down and whispered to her that this enormous house had belonged to her own family prior to the revolution and that Anya's Romanov grandmother had been born in it. Anya asked her mother whether they could have it back, but her mother scolded her and said that the house now belonged to the people.

When she completed her narration, Vinay told her that the dream most probably reflected her childhood recollection of the house in St. Petersburg. Anya wasn't sure and so she asked him why the house in her dream was unfinished. He replied that perhaps something in her still aspires for the grandeur of life as a Romanov and the dream shows she is taking the first step toward fulfilling it. "My own Menon ancestors were part of the royal family in Northern Kerala," he added in a light bantering tone, "and I can tell you it is not so easy to give up the privileges of superior wealth and status, even when present-day reality is in stark contrast to what one had enjoyed in the past. So perhaps beneath those layers of socialist egalitarian conditioning you acquired in youth, your Romanov blood is reasserting its claim on your soul." Then he began to laugh. Anya threatened to retaliate if he did not stop teasing her.

Dan suspected that Vinay was not being fully frank in sharing with Anya his understanding of her dream. He had not intended to overhear their conversation, but it had been spoken too loudly and boisterously for him to ignore. While they were speculating about the possible meaning of Anya's dream, Dan had no doubt at all. It reflected too closely the thoughts in his own mind for him to miss its significance. It was a fit description of their actual situation. They were trying to construct an enormous, multi-storied house with a stairway that climbed almost to the sky, yet they did not yet even have floor boards on the ground to permit them to walk safely and the very first step upward was looking bigger and more difficult to ascend with each passing moment. How apropos, he thought.

As Dan contemplated their position, he felt almost as surprised by its contours as Anya must have felt in her dream. How had they ever gotten themselves into this situation? he wondered. He had never thought of himself as a utopian dreamer or been characterized like that by his friends in the past. He tried to trace the path that had led them to the present. When they met in Fort Lauderdale, they all shared two things—a conviction that the current approach to AI was wrongly conceived and the belief that an alternative approach could have a profound impact on the future of humanity. It was remarkable how much they agreed upon, almost without the need to discuss it. Each brought a different set of capacities, skills and experiences to the partnership. Each had faith in the other three. Perhaps in retrospect they had too much faith in him, Dan thought to himself.

But that was at best only half the story. Their initial concept of developing an AI system for Wall Street trading looked sound at the time and could have been very successful if only they had been willing to compromise on their basic principles and do what everyone else was doing. It would have been so easy to sell MAIS to Jake or another trading house and let them worry about the social consequences. But Dan did not like the idea of wondering each time he read about a decline in the market, whether MAIS had been responsible for bringing it about. He did not envy people like Robert Oppenheimer, who had worked on the Manhattan Project, even if they had done it out of patriotism. Knowing that their invention was responsible for inflicting enormous harm on humanity was not something Dan could live with. To make it worse, Dan still believed that MAIS was founded on sound theory. Vinay believed it too. If they had persisted longer, maybe they would have discovered the flaw in their design and made it work the way it should. Dan harbored an unexpressed hope that he did not even voice to himself. Perhaps *The Book* would provide them with the knowledge they needed to redesign MAIS.

Anyway, that would have to wait till later. Just now life had cancelled that avenue and suddenly presented them with an alternative path that began at the diametrically opposite end of the AI spectrum. Instead of creating a purely quantitative product to make money, NASA was asking them to make a purely qualitative product to create harmony among people. It seemed to Dan that this was like trying to build the house of Anya's dreams from the top floor down, rather than the bottom floor up. If they succeeded in creating PAIS, it would be an ultimate breakthrough in psychology, as well as in the adaptation of AI systems to meet peoples' needs. It would be what Dan liked to think of as the humanization of AI. For the first time, the true magnitude of the challenge they faced became apparent to him.

Dan did not want to raise unnecessary concern among his partners regarding the difficulties they would face, but he thought they could work much more effectively if they all shared a common understanding about what it is they needed to do and what they required in order to accomplish it. So he called his partners into the conference room and suggested they try to itemize the knowledge required for PAIS. Ray, Anya and Vinay all welcomed the suggestion, undoubtedly because they too had unvoiced questions and concerns. They sat and discussed the project from beginning to end and compiled a detailed list of issues. To develop a PAIS system that would avoid or minimize tension and conflict between the astronauts, they would have to incorporate the following attributes in the program: the capacity to distinguish different personality types among the crew members, knowledge of the traits and temperamental qualities of each type that were most antithetical to collective harmony and how to avoid activating them, a knowledge of small group dynamics and the sources of conflict and tension within small groups, measures to avoid excess energy degenerating into boredom, strategies to minimize jealousy and ego domination, and cultural differences and possible sources of cultural misunderstanding and conflict. As far as they knew, neither NASA or anyone else possessed this knowledge at the present time, though Ray believed that he could pick up smatterings of it from other research projects. But even if they could acquire it, it may not be sufficient. For these things all focused on reducing negative outcomes, whereas their goal was to foster and maintain harmonious positive relationships. For that they needed to also acquire knowledge of the traits and temperamental qualities of each type that were most conducive or strengthening to collective harmony and of how to bring them to the surface, a knowledge of how to weld small groups into closely knit teams, measures to constructively channel excess energy, strategies to promote an egalitarian environment and positively leverage cultural diversity. Again, they did have access to pockets of insight on some of these issues, but nothing like the comprehensive knowledge required to achieve high probability of success under the stressful conditions of life on the ISS.

Anya suggested that they list down principles they could incorporate into PAIS that might be adopted to mitigate the difficulty. It would be her responsibility to convert those principles into algorithms. They derived some of these ideas from their own knowledge of psychology and some from their practical work experience, especially their very successful experience working as a small team over the past three years. Dan added to these some that he had identified in his preliminary reading in *The Book*. First, they agreed that the crew needed to be presented with some challenging and inspiring goals that would require them to work closely together for a common goal or possibly against a common enemy. They would need well-defined opportunities for success resulting in a sense of accomplishment and a cause for celebration. In their own case, they shared a common dream as well as a practical goal. Often the sense of an enemy, opponent or competitor might help promote group identity. For Al Qaeda, the enemy is Uncle Sam. During the Cold War, the USA and USSR had served that purpose for each other. Coke and Pepsi had sustained such remarkable commercial dynamism for seven decades because they were in constant competition with each other. High achievers very often were children of fathers who thought they would turn out to be useless failures. One possibility was to foster a sense of competition between this and previous or future crews. Another would be to create a perceived enemy or source of skepticism or opposition on Earth which could only be overcome by heightened cooperation among the crew members. Second, the crew members would

need to have meaningful ways to employ all their surplus energies and non-working time, so that there was no opportunity for boredom to set in. Third, the crew needed to need each other. It was not enough that they each performed their individual work adequately. They needed to depend on each other in order to accomplish that work, so solidarity and cooperation was fostered, rather than competitive individual performance. Fourth, there needed to be clear lines of authority to avoid conflicts or impair efficiency; but in tiny groups the concentration of authority in one person would most likely lead to dominance on one side and resentment on another. The alternative would be to foster egalitarianism by distributing authority to different people for different types of work, so that each felt the meaningfulness of their own contribution and their inherent equality with other crew members. That was more or less the unspoken rule at MAI where authority had naturally become distributed among the team members according to their own areas of special competence.

A surprising outcome of this exercise was the realization that among them they possessed far more relevant expertise than they had understood until now. They had been approaching the problem as detached scientists trying to work on other people. They suddenly became aware that their own personal experience working together was an excellent model for PAIS. Granted that they did not have to confront the effects of microgravity or prolonged confinement in a tiny physical space, they had other types of stressful challenges to overcome which might equal in intensity those faced by the ISS crews. They were perennially short of money to continue their work and sustain their families, a problem the astronauts were happily relieved of. They were continuously accosted by thoughts and feelings of self-doubt and failure over decisions they had made, whereas the work of the astronauts was programmed for 100 percent success, with the objective of making failure as unlikely as possible. When they reflected on their own work together, they came to the conclusion that it was the greatest asset they brought to the project and they had not even been aware of it. For even though they had yet to create a single useful product, they had created a fruitful and harmonious working relationship among themselves, something they enjoyed and cherished. With typical self-effacing humor, Vinay pointed out that they too constituted an intercultural team of considerable diversity. “What could be more diverse than an Irish revolutionary turned mystic from Brooklyn, a Jewish peacenik from Boston, a Russian aristocrat with a head on her shoulders, and a South Indian salesman with as many relatives as NASA has employees?”

Toward the end of the meeting, the confidence, energy and enthusiasm of all four of them rose markedly. As Dan sat listening to a bantering, playful exchange between Ray and Anya as to who should really be in charge of the project, he wondered again about how they had gotten into this situation. Suddenly it occurred to him, that they hadn't, life had. Life had taken away one opportunity, the money product, and offered them another, PAIS, unasked for. He had to keep reminding that they had a partner in their venture—whimsical, fickle and creative, with a mind of her own—Life. At least, she seemed to have a mind of her own as far as he could yet discern. So what were they to do—refuse to play the game presented to them because they knew they were not ready? His mind said that would be the sensible thing to do, but his heart rebelled. If this is what life offered, he wanted to accept it in the faith that it would also provide the essential help they needed along the way. Hadn't it already done so? Life had given him three partners who he would not trade for the best AI specialists on earth. Life had given him *The Book*. He was already convinced that it provided answers to many crucial issues. Only, he needed time to study and reflect on what he had read. Unfortunately, just now time was in critically short supply. So at the end of a long meeting and a meandering daydream, Dan ended up right where he began. He would have to continue doing precisely what he was doing—seeking answers from *The Book* that could be applied in PAIS. He only hoped he could do it quickly enough.

17. The Book

In the course of the coming weeks Dan spent every free moment studying *The Book*. After browsing at random, he decided to approach it more systematically in order to better grasp the scope and organization of thought. *The Book* was divided into two books. Book I consisted of 28 chapters. Book II was further divided into two equal parts of 14 chapters each. That made a total of 56 chapters in all covering 1070 pages of text and approximately four hundred fifteen thousand words. It was written in magnificent, flowing English, in a style that seemed to belong to the early twentieth century. Dan had never read anything so wonderfully lucid and harmoniously phrased. It clearly was written by someone with a consummate mastery of English.

Apart from its beauty, the language presented considerable difficulties. First of all, many of the sentences were extremely long, in a few instances occupying an entire paragraph of two hundred words or more. Dan could not fault the writer for these very long sentences. They were masterfully constructed. He understood that the length was necessitated by the writer's effort to present as an inclusive whole aspects of reality which we usually break up into smaller parts. He encountered an even greater difficulty with the vocabulary. He was pleasantly surprised to find *The Book* contained absolutely no jargon of any kind. It avoided technical terms and tried to express every thought in simple, elegant prose. Although the writer's vocabulary was non-technical, its range was enormous, so Dan needed to constantly refer to the dictionary to look up words he had never or rarely encountered. But he soon discovered that the manner in which the writer was using words differed markedly from everyday usage. For example, in common English the word 'silence' means absence of sound. But in *The Book*, the word was used with reference to a state of consciousness characterized by absence of thought. The usage was not merely different, it was creative. The writer seemed to possess a very definite and precise definition for each word, whereas in common usage we often used these words interchangeably as synonyms. For example, *The Book* made a clear distinction between words such as idea, thought, opinion, belief and attitude. When Dan referred to the Oxford Dictionary for a precise meaning of each term, he found it did not exist. In common usage the distinctions were blurred. But clear distinctions existed for the author and it seemed essential for a reader to comprehend precisely what those distinctions were in order to grasp the author's meaning. Since there was no glossary, it could only be done by a very careful reading of the text. That slowed down Dan's progress in reading. The writer not only used words with greater precision and often in a different sense, but he or she also combined them creatively in original phrases to convey thoughts that were often startling in their newness or apparently contradictory meaning, expressions such as 'the logic of the Infinite', 'Silence behind silence', and 'memory of the future'. To add to the challenge, some words frequently appeared with the first letter either capitalized or uncapitalized. At first Dan thought it was mere carelessness. Then he realized it represents a pattern and must have significance. But for a long time, he could not discern what that significance was.

At first Dan had not paid any attention to the overall structure or content of the book. He simply opened it at random and started reading whatever passages happened to catch his interest. It was like dipping a shovel into a soft vein of gold. It did not matter where he placed the shovel. He always came up with something precious that was intriguing to his mind and relevant to his life circumstances. Afterwards, he flipped through the book and selected a few chapters that seemed most relevant to his current interests, particularly the chapters on the nature of life and mind. It was only much later that he decided to undertake a more systematic study.

The subject matter of *The Book* ranged through the entire gamut of knowledge and human affairs from the exploration of matter and the material discoveries of physical science to the experience of higher planes of consciousness and the verification of spiritual realities. There were chapters on the nature of the individual and the universal; the body, life and mind; subtler and higher planes of existence; life, death and rebirth; ignorance, ego, atheism, agnosticism, materialism, religion, and revolution, as well as on the remedy for falsehood and evil. It also includes profound insights regarding social evolution and psychological growth.

But Dan felt that the most interesting and most important thing about the book was not the vast range of subjects it covered, but rather the perspective in which it covered them. Although he could not explain exactly what he meant by perspective, he identified three characteristics that made *The Book* unique. First, all of the subject matter of the 56 chapters was tied together and reduced to a common set of universal principles, almost like an alternative to the approach of string theorists to a grand unified theory of everything. But there was one difference. Whereas current scientific theory applied only to the physical universe and attempted to collapse the dimensions of life, mind and consciousness into the material plane as expressions or derivatives of quantum phenomena, *The Book* presented principles that recognized the

unique characteristics of each plane of existence yet were applicable to all of them. It did not seek to reduce all reality to matter as materialism has done by rejecting the existence of other planes. Nor did it seek to reduce everything to spirit as spirituality had done. It admitted the reality of all planes and showed that they were governed by the same universal principles. Second, *The Book* revealed the precise relationships and linkages between all aspects of reality—body, life and mind; individual, universal and transcendent; matter and spirit; the One and the many; the finite and the Infinite; Soul and nature; the relative and the Absolute; divine and undivine, and so forth. Third and most important from Dan's perspective, *The Book* explained the common process by which all things exist, manifest and evolve. It showed that the creativity of the writer, the artist, the entrepreneur, the statesman, the scientist, the engineer and the musician were all expressions of a single unifying process. This last point was later to prove to be of immense practical importance to Dan, his partners and their company.

At first he had mistaken *The Book* for a book of philosophy. Gradually he discovered that it offered a profound knowledge of life and the process of accomplishment in life. Still later he came to recognize it was also a book about psychological growth and spiritual progress. But for a long time, he could not put them all together and see that they all formed aspects of a single whole. The ultimate purpose of *The Book* was to present a comprehensive science of accomplishment.

He encountered one more difficulty while reading the book. The effort was mentally exhausting. Sometimes it took the entire mental energy of a day to read and comprehend a single paragraph. Sometimes a wave of exhaustion would come over him the moment he started reading and he would fall into a deep, but refreshing sleep. At other times, he found the reading energizing. He could read five or ten pages at a stretch with what he thought was crystal clear comprehension. Such experiences sometimes repeated for a few days. During these periods his mind would be filled with peace and light. He often felt a subtle power descending into his head and from there radiating down into his heart, nerves and body. The sensation was always warm, peaceful, extremely pleasant and powerful. He would feel as if he were being pumped full of energy, a quiet radiant energy that did not need to express itself. Such periods came occasionally, but when they ended he usually found that he could not go back to the book for weeks at a time. After reading forty pages in four days, he would not read forty words for another two weeks. Sensing that difficulty may have been one reason why his partners were content to let him do the reading.

Dan's effort to study *The Book* reminded him of a discussion he once had at the Fermi Labs in Chicago with the late S. Chandrasekhar, the Indian Nobel Laureate astro-physicist and nephew of another Nobel Laureate physicist, C.V. Raman. The astro-physicist told Dan that he had spent every day for more than a year in the university library studying Newton's major work, *Principia Mathematica*, and at the end of that time he said he was far from having mastered that book. Even after Dan had spent several months studying *The Book* and had finished a first reading of only 10 or 11 chapters, he did not feel that he had fully comprehended the contents of even one of them. In fact, he read the first chapter, five times and each time it revealed entirely new insights that he had missed in the previous readings.

Again and again he wondered about the identity of the author but was unable to make even an educated guess. *The Book* was written in an impersonal style and made no reference to the author at all. All that did know for sure was that whoever wrote this was not writing from a mere intellectual understanding or theoretical framework. The thoughts carried a clarity and power that speculative thought could not even imitate. Whoever wrote this book possessed real knowledge. Of that, Dan was sure.

18. The Archives

Dan carried *The Book* to work with him and often shared passages he thought relevant with his partners. Occasionally one of them would borrow *The Book* for a few hours during the day and read a chapter on their own. Ray found it particularly fascinating. Often in the evening he would come into Dan's office and they would discuss some particularly difficult or intriguing point one of them had read. Anya and Vinay sometimes joined them. But these discussions tended to be too abstract and philosophical for their liking.

Things were different when it came to the *Archives*. That was the term Dan coined to refer to the growing volume of supporting documents he had found on the web similar to the articles on character of life and the relationship between mind and brain. Dan was now quite sure that none of these articles were written by the author of *The Book*, but whoever did write them was intimately acquainted with the thought in it. The *Archives* covered the same subjects as *The Book*, but always with a focus on analysis of actual events, application of principles and practical strategies.

The analytic articles covered a wide range of topics including business management, politics, sociology, economics, education, psychology, literary criticism, medicine and technological development. They were filled with examples and illustrations from history, biography, literature and contemporary events, which indicated they were probably written much more recently than *The Book* itself. Some articles focused on analysis and interpretation of historical events, such as the world wars. An article on the Great Depression argued that this event represented the first step toward the economic globalization which manifested five decades later. Another argued that the second world war had been necessary to destroy the physical resistance of old ways of life to the phenomenal advances that were pressing for expression and exploded into reality during the past half century. One article presented a theory of social development and applied it to explain how poverty could be eradicated from the world in five years. Another presented a theory of peace and explained how war between nation states could be abolished. Vinay was particularly fascinated by an article presenting strategies for accelerating the growth of a business and another on strategies to multiply money. He devoted all his spare time to studying them in the hope of discovering a clue for redesigning MAIS. Anya's favorite was an article on what was called the practical concept of infinity. She said it had helped her identify a new approach to harmonizing algorithms that were in apparent conflict with one another.

Apart from the analytical articles, there were others that focused on the principles of successful action. This second category turned out to be of far greater immediate relevance for their work on PAIS, but here too the range of subjects covered was very wide. These articles devoted little space to theory, though occasionally they referred back directly to theoretical arguments in *The Book* and then proceeded to explain how the general concept could be applied practically. The article on Energy was an example. It paraphrased concepts Dan had read in *The Book* about life as a universal plane of energy and force. Then it derived from that a principle of action that all accomplishment in life depends on the strength or intensity of the force applied; by force, it meant the intensity of psychological and social determination felt by the people supporting the act. It explained that considerations of right and wrong had very little to do with success in life, except in the measure the social consciousness required a minimum standard of conduct—usually a very low minimum standard compared to our normal moral considerations. That explained why so many highly accomplished leaders in different fields were able to succeed in spite of what was often blatantly false, openly dishonest and morally outrageous behavior. The article advised against undertaking any important work when physical or psychological energy is below average, since the results of the work depend far more on the energy level than on the correctness of the actions taken. Finally it concluded with a simple, practical technique for raising one's energy level. *Call energy. Open yourself psychologically and invoke energy to descend and enter into your personality.* The idea sounded so simple that they tended to dismiss it as a gimmick of some sort, until one morning Anya reported that she had tried it with remarkable results. She had been working late the night before on a very tough problem, finally quit in frustration at 3 am, and spent the rest of a short night on the couch in her office. The following day she resumed the work but found by 11 am her patience and mental concentration were thoroughly exhausted. She lay down on the couch but could not sleep, so she sat up and imagined that her mind and heart were spreading out simultaneously in all directions. Then she started calling energy as in a silent prayer. She reported that within five minutes her mind was totally refreshed and she felt energy coursing through her nerves and body. She went back to work and within an hour had solved the problem that had been perplexing her all the previous day and night.

Another intriguing article was entitled *Silent Will*. The article began by repeating ideas about silence discussed in *The Book*. It described silence as the creative ground from which all action arises. There are different levels and degrees of silence, ranging from absence of noise and absence of thought to absence

of mental activity or any activity of any kind. It explained that silence was a far more powerful state than activity and far more difficult to attain and maintain. The silent mind possesses a greater power for understanding and knowing than a mind filled with thoughts. In fact, mental activity interferes with the mind's higher capacity for knowledge. Silent will possesses a greater power for effectuation than a will actively expressed in words or actions. Every individual expression of will tends to evoke a reaction or resistance from others, because the human ego hates to subordinate itself to others and feels subconsciously humiliated every time it follows another person's instructions. That is why successful leaders often allow their followers to believe that they are following their own choice of action, rather than the leader's choice. People often fail when they carry out instructions given to them, not because the instructions are incorrect, but because something in them wants the instructor's commands to be proven incorrect. The article concluded with a strategy to overcome resistance to new ideas and initiatives. *A person who strongly wills for something to happen should refrain from expressing that will to other people who are involved in the action. In every instance in which a clear, powerful will is formulated, an unexpressed silent will is far more effective in achieving results than the will verbally expressed to others.* Many jokes passed back and forth between the partners as they discussed this article. Anya accused Dan and Vinay of using that strategy to get her to do what they want. They both protested that in most cases it seemed that they ended up doing whatever she wanted, so obviously the method was not very effective.

Both the analytic and practical articles had two things in common. First, they all referred to and were based on the same universal laws and the same process of accomplishment applied to different fields. By so doing, they effectively created a unifying discipline that united the sciences, social sciences and humanities within a single framework. Neither Dan nor Ray had ever before encountered or heard about any comparable effort. Second, each time any of them located a new *Archives* article and printed it, within minutes the pages they had loaded were disabled and no longer accessible. At first Dan had suspected a fault in his computer, but Ray and the others confirmed the same thing. They consulted people they knew in search of an explanation, but no one had ever encountered anything similar or could offer an intelligible explanation. It was unbelievable, but true. This added a certain aura of mystery and intrigue to the documents, an aura that Dan already felt for *The Book*, given the unusual circumstances in which it had come into his life. For days they spoke about little else than the latest missing articles. Gradually the *Archives* began to occupy a central place in the activities of the four partners. The more they searched for specific subjects related to their work at MAI, the more they were surprised to find specific articles providing insights directly applicable to their work on PAIS. Since they were unable to store or retrieve electronic versions of the articles a second time, Dan was careful to collect copies of all the articles and organize them for future reference.

In the course of searching for *Archive* articles on the web, one day Dan encountered a new type of article distinctly different from the analytical and practical articles they had been studying. It consisted of short aphorisms, principles, truisms, rules and insights on a particular subject. Often as many as fifty or hundred appeared on a single page. Sometimes they were all related to a single subject, more often they referred to a range of different subjects. The topics covered were again extremely broad. These *Messages*, as Dan referred to them, presented truisms, principles and insights regarding life, human nature, work, accomplishment, human relationship, money, science, superstition, rationality, knowledge, religion, international affairs, spiritual truth and spiritual practice. He found more than two hundred messages on the power of self-giving for higher accomplishment. Anya collected more than four hundred on themes related to love, marriage and what the author referred to as eternal romance. Some of the messages were playful, others serious, some humorous or caustic. This was one of his early favorites,

The scientist is one who sees all the works in a company and no worker. He particularly denies the existence of a Founder.

Some messages, which were deeply puzzling, he read over and over again trying to decipher their meaning.

To be able to see the Good that the Evil act moves is occult wisdom.

Certain work yields results in proportion to the effort. In other cases the results wait till one exhausts his energies or reaches perfection. The infinite emerges from the finite when both principles are at work.

Some contained profound practical wisdom.

If anything is to be accomplished it is to be accomplished silently. The deeper the Silence, the better.

If anything is to be achieved for the world, it is to be accomplished first inside.

Within months they had collected more than five thousand *Messages* and they were discovering new ones almost every day. As in the case of the *Archives*, the *Messages* also disappeared inexplicably from the web almost as soon as they had located them.

Apart from the direct impact on PAIS, slowly the concepts and strategies presented in these articles found application in their lives and work. All four of them began to observe life events much more closely than before and try to identify the principles or factors connected with a particular chain of action. Sometimes they did it seriously, other times in jest. One day Vinay was reminiscing about the moment of their first meeting at the conference in Fort Lauderdale. He explained that the head of his department at Rothman & Lazurus had originally been invited to present a paper at the conference, but due to a sudden fever he had asked Vinay to go in his place. "If it hadn't been for a few degrees of heat, I would never have met you people," he exclaimed. He then confessed to Anya, "The moment I saw you stand up and challenge one of the speakers on the first day, I vowed not to leave the city without speaking to you."

She looked at him seriously and replied, "I no longer can recall what it is I spoke that day, but I am glad to know that you found my intellectual brilliance so compelling."

"Seriously, Anya" Vinay continued, "do you remember the third morning when you were sitting at the table with your breakfast and the three of us came up to you almost simultaneously. When you looked up at me, I felt something light up inside." She enjoyed Vinay's flattery, but she always had the feeling he was expressing only half of what he knew. She was sure when he had approached her at breakfast that morning, he could not have missed sensing what she was feeling inside as well.

Anya persisted in misunderstanding him, "Well it is heartening to know that you are so receptive to the light of reason." A moment later they both burst out laughing.

Anya had been right when she sensed that Vinay did not disclose all he understood, but she would have been deeply disturbed if she had truly understood what he was feeling. She never realized what an effort it required on his part to ignore her almost masculine aggressiveness. It deeply marred his perception of her beauty. Vinay had learned from his mother to admire strength and independence. To his amazement she had once confided to him that she had loved another man but married Vinay's father because of family pressure. She had come to love her husband but never quite lost the feeling of having betrayed her own heart. Vinay did not want a woman on those terms. He wanted someone who would give up anything to follow her heart. If he had to endure some abrasive aggressiveness to find such a person, it was a price he was willing to pay. But that did not prevent him from inwardly cringing at each fresh instance of Anya's assertiveness. He wondered at those times, why women couldn't understand the difference between strength of character or self-respect and the need to assert or dominate?

19. Contact

When we live inwardly, it is possible to achieve a state of peace and inner equality that is untouched by the reactions of the outer nature.

The Book

It was 8 am. Diego stood across the street from the Kensington apartment building where he had been waiting for over an hour. He did not particularly like this part of the assignment. There was something sneaky and suspicious about the whole thing. But what choice did he really have? Simon had promised him twenty five thousand dollars the moment they found the book. He had congratulated Diego for having located the store which had sold it and offered to pay him five thousand dollars for that service, but if Diego wanted the rest of the reward he would have to continue working until they actually had the book in their hands. Diego had reacted strongly and told Simon he was not about to do anything improper or illegal. Simon repeated the story of how the book, a family heirloom, had been stolen from him and his only objective was to recover his own property. When Diego urged him to contact the new owner of the book and offer to buy it, Simon had reminded him that whoever took the book from Moe's had not paid anything for it according to Diego's own report. If Moe's had given it for free, it obviously had no resale value. It had only sentimental value to Simon. What could be wrong with recovering one's own property when it has no value to anyone else? He explained further that if they approach the person directly, it would only arouse suspicion. The man would wonder how they found him and why they want the book so badly. Then things would really get complicated. In fact, those were precisely the questions in Diego's own mind. How had they located the sandy-haired man in a city of this size? He too wondered what could be so important about an old book. Reluctantly Diego had agreed to watch the apartment as instructed, but nothing more.

Finally he saw what he was looking for. A forty year old white, sandy-haired man about five foot eleven inches tall and wearing a Cal sweatshirt came out the door carrying a briefcase, got into his car and drove away. The man had looked up and noticed him sitting on the wall across the street and smiled faintly in greeting. As the car disappeared around the corner, Diego pulled out his cell phone and dialed Simon. A minute later the short, thin frail man with the beak-nose drove up, got out of the car and went into the building. Diego waited as instructed to notify Simon in case the sandy-haired man returned. Twenty minutes later Simon emerged from the building. He had a scowling expression on his face. He got in his car and drove away. A moment later, Diego's phone rang. "I will need some further help from you tonight around 11:00 pm. Meet me at the corner of Hearst and Shattuck."

That night Dan got home after 10:00 pm. He was particularly exhausted. They had had one of their rare quarrels. He wasn't even sure what had precipitated it or why it had occurred at all. It was probably just exhaustion. All of them were exhausted by the non-stop effort to complete the proof of concept in time for their meeting with NASA two weeks later. So much was at stake. The article they had read on Energy had clearly warned against taking up any serious subject for discussion when energies are low. That had certainly been advice worth following, unfortunately they had not. When Ray first began raising his doubts about their approach and their ability to deliver on time, Dan knew it was not the time to discuss it, but he could not refuse to listen to Ray's point of view. Ray's doubts had prompted Vinay and Anya to express their own concerns, so Ray did not feel that he was the only one who questioned their ability to succeed. They were just being frank. How could blame them? The truth is he shared all the same doubts, but had just refrained from expressing them. They were only mirroring his own unexpressed thoughts. If only Dan could have sat quietly and listened without trying to explain or convince Ray of an alternative view. If only he had remembered the principle of silent will at that moment. But it had completely gone out of his mind. He had spoken foolishly. He had repeated to Ray one of the *Messages* that he had read a few days earlier and which had helped reinforce his own personal resolve.

No task will come to you that is beyond your capacity to accomplish, if only you have the faith to accept it with that conviction.

Rather than reassuring Ray, it had only irritated him and made him blow up. Dan could only recall two or three occasions in the past three years when that had happened. Most people who knew Ray thought he was constitutionally incapable of anger. Dan understood that it was the result of the terrible pressure they were all under. How ironic, he thought. They were trying to evolve a system that would prevent tension and conflict between people working under highly stressful circumstances and that project had created similar circumstances for the four of them in their own work. It was as though the vibration of tension was contagious and they were getting a dose of what the ISS crews go through. Dan hoped that he was wiser for the experience, but he had his doubts.

He walked into his apartment, put down his briefcase and went to the refrigerator to find something to eat. He hadn't been hungry as long as he was working. Now he was famished. He walked over to his desk with a Healthy Choice microwave dinner in hand and turned on his computer. Glancing down he noticed two of the desk drawers were partially open. That was strange, he thought. He had not been using those drawers for at least a week and did not think he would have left them sticking out like that without noticing it before. Dismissing the thought from his mind, he Googled a phrase from *The Book* about peace and equality. He needed some inspiring thought to help him shake the disquieting sense of sadness and regret created by the meeting earlier that day.

The next morning when Dan arrived at the office, he found Ray wandering the halls with a look of concern on this face. When Dan asked whether there was anything the matter, Ray shook his head and said he did not know. It looked to him as though someone had forced open one of the drawers of his desk where he keeps important client documents. There was nothing missing, but the lock had been bent and there were scratches on the front of the drawer. Maybe it was the cleaning staff, Ray explained. Then he joked that their office offered very poor pickings for a thief, apart from the four computers and a printer. An eerie sensation recalled to Dan's mind the feeling he had when he saw the half opened drawers of his desk at home.

Later that day Vinay had a call from Sam Hunt at NASA. He sounded upset and apologetic. He told Vinay that he had received an order from his superiors to reopen the PAIS contract to competitive bidding. Vinay was confused and dismayed. He asked Hunt to explain. It seems that Edward Roche, Chief Psychologist at NASA, had contacted Hunt, strongly objecting to the selection of an unproven vendor and unproven concept for such a critical aspect of the project. He had insisted that more established firms with proven methodology be reconsidered in the evaluation round. When Hunt protested that the contract had already been awarded to MAI, Roche reminded him that MAI still had to pass the proof of concept stage and could still be rejected if their offering was not satisfactory. Roche said he would himself participate in that meeting and review the competitive offerings.

Vinay put down the phone and called his partners together to repeat what Hunt had told him. They had already spent the hundred thousand dollars advance and were in debt for another hundred thousand dollars to Andre and his team in Moscow. Vinay looked around at the other three to gauge their reactions. Ray's face was filled with deep lines of anxiety. Isn't this what he had been afraid might happen all along? A look of weariness replaced the buoyancy in Anya's expression. Vinay had not seen her looking this tired since the day she invoked energy to solve a problem. Dan's face was inscrutable. Vinay was waiting for him to speak, but the experience of the day before had convinced Dan that sometimes speaking only makes things worse. Instead, he smiled and returned to his work.

The four partners spent every minute of the next two weeks preparing in earnest for the NASA meeting. All of them tried to put their anxieties and differences behind them and focus on the work. Vinay tried his best to lighten the atmosphere with his natural humor and engaging friendliness, but it was obvious that he was straining himself to act casually, so it did not have its usual impact on the group. Anya redoubled her efforts to perfect the model algorithms that demonstrated their capacity to convert theoretical principle into AI process. Dan focused on reaffirming his own conviction that this situation would not have come to them if they did not possess the capabilities needed to succeed.

Having finally located *The Book* after such an incredibly long search, Simon had hoped the rest would be easy. He had personally searched the homes and offices of all four of them and had not found a trace of it. Yet he knew he was not mistaken. O'Hara must have been the one who picked it up. His boss had confirmed it.

20. Confrontation

The NASA meeting was scheduled for April 2, 2004. During the intervening period, Vinay spoke to Sam Hunt frequently in order to understand precisely what would occur on the day of their presentation. Hunt explained that the evaluation panel would consist of five scientists, including himself, Edward Roche, Gloria Hoffman, another psychologist who works with Roche, and two astronauts, Meg Wilson and Yuri Pavlov. Originally Roche insisted on a three person committee, but the Russians got wind of the controversy and insisted on being represented. Then Roche brought in Hoffman to strengthen his own position. Hunt continued to be very apologetic. He said in his ten years with NASA, he had never before experienced interference of this type in an area where his team was fully competent to act. When Hunt protested to own direct boss, his boss had initially supported his decision and later come back saying that there is higher level pressure from some source which he is unable to countermand. In reporting this to Anya, Vinay teasingly said he hoped that Yuri was not a relative of Ivan Pavlov, the Russian psychologist who conditioned dogs to salivate; for, if so, he was bound to support the Strong AI contingent. As for the competition, Hunt explained that two other companies had been selected, one by him and one by Roche. Both had done extensive work for NASA and had large teams of psychologists and computer scientists on staff. Later, Anya contacted a few old colleagues at NASA, including her former boss, but he appeared equally surprised and unable to understand the reason for the interference.

As the day approached, they debated who should go and represent MAI. Anya felt that Dan and Ray would do best. In spite of the cost involved, Dan insisted that they all go. Their diversity of skills and backgrounds were their greatest strength, he said. "It is better we go in force and stand or fall together."

In spite of being the only company presently under contract with NASA for this project, Roche arranged that MAI was the last to present their case. In questioning the other two companies, he placed great emphasis on eliciting information regarding their staff strength, specific expertise in this field, prior work for NASA, and the vendor evaluations they had received from NASA for previous work performed. Both companies had spotless and impressive records. Both took similar approaches to the problem. They would conduct in-depth personality profiles of all prospective crew members and identify the most compatible types. Hunt asked the basis for identifying compatibility. Both firms replied that similarity of background and personality characteristics was a reliable predictor of social harmony. Pavlov asked about their experience working with inter-cultural teams. Both firms claimed extensive knowledge and experience working with Russian-American team members in the past. Just as Roche was about to wrap up discussion on the second firm's presentation, Meg Wilson asked a question which she wanted both companies to respond to. "What about boredom? How will you offset the risk of boredom in a psychologically homogenous population forced to live and work in close quarters for an extended period of time?" Both companies dismissed the question as a non-issue, since positive bonding between the crew members would prevent boredom from setting in. Wilson smiled to herself, as if to signify that she knew differently, but she did not press the point.

Finally, MAI was asked to present PAIS. Dan had divided the presentation into four parts. He wanted their presentation to be a visible demonstration of effective cross-cultural harmony within a small group. Vinay began by representing an overview of their approach and the methodology they were following to develop PAIS. Ray explained the theoretical basis for the program and cited earlier work on which they had drawn. Anya explained their means for converted psychological qualities into algorithms. Dan concluded by describing the magnitude of the psychological challenge faced by the crews, something neither of the other presenters had even referred to. He said it was analogous to the pressure placed on Robert Oppenheimer and his Manhattan Project team of brilliant scientists, when they were working against a tight time schedule to develop the A-bomb, under heavy pressure from above, constantly suspect and closely scrutinized for possible security leaks. He emphasized the difficulties inherent in small teams where all the members are experts in their own right and could legitimately claim superior knowledge to that of their colleagues in their specific areas of expertise. Roche noted with irritation that Pavlov and Wilson were nodding their heads in appreciation of this point. He then praised Wilson's insightful question about boredom and said that psychological complementarity rather than similarity was the solution. The crew members must find each other interesting, intriguing and somewhat mysterious, so they are tempted to explore each other's psychological universe during the long hours of close confinement when there is little else to occupy their attention.

Roche interrupted at this point with an air of professional skepticism and condescension. "It sounds to me like you propose to eliminate boredom by consciously rejecting compatibility in favor of contradictory personality types. In order to avoid the slight possibility of boredom you virtually ensure failure arising from

basic incompatibility of personality. This approach is not only unconventional and unproven, it is dangerous. It's a formula for disaster!"

Dan replied, "I admit our approach may be unconventional, but it is not unproven. For the past three years we have conducted our own research in close quarters under conditions of considerable work stress and psychological duress. The approach is born out by that research."

"And who precisely were the subjects of that research?" Roche fired back. "Did you also take into account that our crews will include people from different countries, ethnic and religious backgrounds? We have had enough problems just working with the Russians," he said, then looking over at Pavlov he added apologetically, "No offense intended to my distinguished colleague, I assure you." Pavlov nodded but he did not look reassured.

Again Dan replied, "As a matter of fact our research involved people from four different religious and cultural backgrounds, including Catholic American and Russian Orthodox, with Jewish and Hindu thrown in to boot. I am referring, of course, to the composition of my own four-member team."

Now Wilson interceded, "But how will you ensure cohesiveness among such a culturally and psychological diverse group, Mr. O'Hara?"

"The same way all effective work teams achieve cohesiveness—by commitment to a high and challenging goal which they can only achieve by working closely together; by defining success only in terms of group accomplishment, rather than in terms of performance of individual functions; and by creating a common threat that will meld the team into a single whole, by presenting..."

"Threat?" Roche almost shouted. "What kind of threat? We don't believe in heavy-handed methods at NASA. This is a professional organization where people are free to act without coercions." Dan saw Hunt glance at Roche skeptically out of the corner of his eye, while suppressing a smirk of unexpressed sarcasm.

"If you had permitted me to complete my sentence," Dan replied calmly, "I was going to explain that by threat I meant a challenging situation that would bring out the best in the team, possibly a competitive challenge to exceed the performance of past crews on certain parameters. It might possibly be created by a sense of bonding that occurs when a crew feels that the difficulty of their situation is not fully appreciated by those who remain safely on the ground." Anya saw Wilson and Pavlov both suppressing smiles at the allusion, while Roche's face turned bright red.

Seeing that his intimidating attacks were not having the intended impact, Roche let loose with both barrels. He challenged their competence in the field of individual and small group psychology and dynamics. He challenged their track record on project management and product development. He questioned the financial stability and viability of the firm, as well as their capacity to provide adequate support and maintenance services. He taunted them with the fact that while they were present at this meeting, there was not a single person back in California to even answer the phones at MAI.

Dan sat back and observed Roche carefully. The first thing that struck him was that Roche was confronting them with the very doubts with which they had confronted themselves just a few days earlier. His accusations were only a reflection of their own self-accusations. What was the use of getting angry or defensive with him for pointing out basic truths? No doubt he was doing it in a mean-spirited, intentionally provocative manner. Perhaps he was even professionally threatened and jealous that they had evolved an alternative approach to the problem. But Dan saw clearly that reacting and quarreling with Roche would not do any good. He thought about what he had read in the article on silent will. He decided to remain quiet.

The less responsive and combative Dan appeared to be, the more aggressive and offensive Roche became, as if he knew he had gained an invincible upper hand and he was intent on burying his foe once and for all. He repeated what he considered his strongest accusations over and over again to be sure the other panelists could not overlook them. His monologue continued for a full fifteen minutes and no one attempted to interrupt him. Ray too recognized all the arguments Roche was making, because he had made them himself, but now that he heard them from another person so obviously bent on discrediting MAI, he was able to see the fallacy in that whole line of approach. Instead of cowering in humiliation under the abuse, he began to feel their position was clear and strong for the first time. When Roche finally completed his tirade, all the partners were surprised to hear Ray start defending their position calmly and effectively, and Ray was the most surprised of them all!

"Dr. Roche has a right and duty to draw attention to our limitations, which no doubt are real. But let us put this in perspective. ICC is in the process of doing what no human beings have done in the past. It is a courageous pioneering effort that involves imagination, innovation and fresh invention at thousands of

points. In fact, nearly everything you are doing is unproven, because it has never been tested before under actual conditions. We at MAI believe that the application of artificial intelligence to augment the psychological performance of human beings represents a similar frontier. These are untested waters. Of necessity, you try to create accurate simulations and experimental environments. But no one can be sure they truly reflect the actual environment you will encounter on the ICC. We do the same thing at MAI. We believe, we are convinced, that we have a solution to the problem of small crew dynamics that takes into account the stressfulness of the situation and the cultural diversity of the crews. We believe that the attempt to avoid conflict is fundamentally flawed, because conflict is a natural and healthy component of all human relationships. I assume that as a married man, I am not the only one in the room who can testify to the role it plays in marriage. In human relationships, absence of tension is not enough. We do not select our marriage partners because they never make us tense. That is a negative conception. We select our partners because of a positive dynamics that exists between complementary and in some ways contradictory personalities. That is the source of the energy, vitality, charm, attraction and delight that lies at the heart of human relationships.”

When Ray completed his response, there was silence in the room. Roche seemed to be struggling for something to say, but he sensed that he had lost the initiative irretrievably. Still he could hope to win. Gloria Hoffman had already been instructed how to vote. If either of the astronauts took his side, he could still swing it. Roche decided to make one more attempt, but before he could, Yuri Pavlov spoke up.

“It might interest you all to know that I am a great, great grandson of Ivan Pavlov, the famed physiologist, Nobel Laureate, and the proclaimed father of psychological behaviorism from St. Petersburg.” Vinay turned to Anya trying unsuccessfully to suppress a feeling of unconcealed dismay. Yuri apparently noted it too. “Ah, I see that our colleagues from MAI are familiar with my great, great grandfather’s work. Well, I mention it now for a specific reason. It is evident that the concepts on which Millennium’s PAIS are based are totally incompatible with the mechanistic view of human psychology so unjustly attributed to my great great grandfather. I would like to set the record straight. My great, great grandfather considered himself first and foremost a physiologist, not a psychologist. He recognized that there was a linkage between bodily function and human behavior. But he was a humanist who risked his life to protest against the criminal injustices of Stalin’s regime and, I might add, he had the heart of a Russian mystic. I for one strongly denounce the underlying premises of Strong AI implicit in the approach of the first two firms and cast my vote in favor of MAI.” Yuri maintained a serious and almost pompous expression on his face during this emotional statement, but after he had completed it and attention shifted away from him to other members of the panel, Anya thought she could discern a glint of humor in his eyes as if they were laughing and a beam of warmth cast in her direction.

Meg Wilson took the cue from Yuri and cast her own vote for MAI as well. She said when she led her team to ICC she had no intention of being bored to death by likenesses of herself, if NASA ever managed to find any. She had had quite enough of her own personality without confronting it day and night in those she worked with. She too appeared serious, but there was a playful lilt to her tone that was unmistakable. Roche rose without even waiting for Sam Hunt to cast his vote. He saw the deck was stacked against him. Signaling Hoffman to follow, he left the room. Anya leaned over and gave Ray a strenuous hug and then she walked up to her fellow countryman from St. Petersburg. Ray approached Meg Wilson and said he would like to consult her regarding some of the stress situations they needed to anticipate. Wilson replied that she was an expert on that topic and would be happy to unload on any willing ears. Then she congratulated them on winning the contract and left the room. Vinay approached Sam Hunt and thanked him for his support. Hunt again expressed his bewilderment at Roche’s aggressive and antagonistic behavior. “I know the man for a long time. He can be difficult and annoying, but I have never seen him like this before. It is as if someone put him up to it.”

Gloria Hoffman returned to her office and sent off her latest report to Mossad. Her notes were passed on to the Intelligence Officer monitoring developments in AI. When Kurt Levin read her report, he immediately recognized the names of four AI specialists he had observed four years earlier at the conference in Fort Lauderdale.

The very next day, Gregory Thompson read a report about the meeting at NASA. This was the third installment he had received about MAI since the end of December. First financial trading, now the psychology of ISS crews. “What are these people up to?”

21. Quarrel

While Dan, Anya and Vinay headed back to California, Ray flew up to Boston to celebrate his parents' fortieth wedding anniversary with the rest of the family. When he arrived, his older brother Neil, Neil's wife and their younger sister Judy were already there and settled comfortably, so all the attention naturally shifted to Ray and what he was doing. This was the first time Ray was meeting with his family in eighteen months, the previous time being during the second month of the MAIS beta test with Jake. Ray's father had never been pleased with his second son's career decision. He had always hoped that Ray would choose an intellectual or idealistic pursuit, perhaps as a university professor or a social reformer. He regarded computers and artificial intelligence as impersonal and unrelated to the core of human values. Neil was three years older and already a wealthy man. He had graduated from Yale and Harvard Law School, then joined a leading Chicago law firm where he was made a partner seven years ago.

The two brothers were a study in contrasts. Neil was ambitious, aggressive and arrogant. Ray, on the other hand, did not aspire for any great personal accomplishment. He was clear and firm in his convictions but never pushy or insistent in projecting his views or trying to have things his way. He respected the abilities and strengths of other people and never acted as if he were superior. Perhaps it was inevitable that the two would not see eye-to-eye on many things; but since their interests were so divergent, there was little scope for disagreement—except on one thing. Neil thought Ray was wasting his life and failing in his obligations to Rana and the two girls. He had tried to dissuade his brother from pursuing a technical education, but once he had enrolled, Neil conceded that there were enormous opportunities in the IT industry. When Ray opted for an MA in Political Science, Neil told him he was being foolish and exerted pressure through their parents to get him to change his mind. Relations were tense until Ray finally settled down at a non-profit in Washington. The pay did not compare with what Ray could earn in the private sector, but it would be enough to raise his family in comfort. Arlington Institute was highly respected. Neil could not openly fault his brother for not wanting to be rich, even if though he did fault him in private.

After Ray left Washington for Berkeley in 2001, he did not visit his family for a year and a half, though he stayed in close touch with his father by email and phone. His dad took genuine interest in the work on MAIS and understood the enormous impact they would have if they succeeded. He was proud of Ray for making the attempt. His mother tended to side with Neil and think her younger son was making another misguided choice in life. She wondered when he would ever settle down. Judy was ten years younger and loved Ray dearly. As far as she was concerned, he could do no wrong. She always came to his defense when Neil or her mother complained about him. But when word reached home that MAIS had failed and was being discontinued before it was even launched, even Judy and her father found it difficult to defend Ray's choices any longer. Ray had invested all his savings and his family's security in MAI and now that money was gone. They did not have a product to sell or any idea what product to create - or the money to develop it, even if they did. So Ray stayed away in order to avoid open conflict. He had his own doubts about the rightness of the decisions he had made. He loved what he was doing and the people he was working with, but the thought that he was acting irresponsibly cut deeply. Even if he hadn't had any personal doubts, he lacked the combativeness or the craft to persuade others that he was right. So he decided to avoid confrontation until he could see clear into the future.

Ray's parents had both urged him to come for the weekend celebration. His father was just eager to see him. His mother was anxious to work with Neil to set her wayward son right. Now that NASA had approved their proposal, Ray decided at the last moment that he should not refuse the invitation. He called his father on the way to the airport and said he would catch the first available flight up to Boston for the weekend. As soon as he arrived, all the family's attention turned toward Ray. In response to a barrage of questions, Ray briefly narrated events from the time they had last met, including the development and discontinuing of MAIS and the long struggle for survival last year leading up to the order from NASA. He knew that none of them were interested in technology, but he couldn't help getting a little carried away in excitement about the potential significance of their new product, PAIS. Everyone listened politely, but his father was the only one who could appreciate what he said in some measure. Neil asked a number of probing questions designed to bring out the fact that beyond this single order for NASA, it was not even clear whether a commercial market existed for PAIS. Even if they completed it successfully, they might be back to square one twelve months from now. Ray saw where Neil was taking the conversation but could do nothing to prevent it. What Neil implied was only the truth. He found his brother annoyed and his mother visibly worried, just at the moment when he and his partners were in a mood for celebration. It occurred to him that their conscious decision to give up MAIS counted for nothing in the present context. His father

understood his son had taken a right decision based on higher principles, but even he found it difficult to appreciate an effort which had obviously failed.

After dinner, Ray felt exhausted and somewhat depressed, so he went upstairs to his old bedroom to rest for the night. Everything he had tried to tell them had hit a wall and bounced back. All the excitement, hope and confidence he had felt melted away. He slept late the next morning and still felt groggy after brushing his teeth and headed downstairs in his pajamas for a cup of coffee. As he came down the stairs, he overheard voices speaking in hushed tones in the kitchen. He recognized that it was Neil who was speaking and mentioning his name over and over. Then suddenly he fell. As a child he had traversed those stairs safely hundreds of times in the pitch dark, but this morning he rolled down the last ten steps head over heels and landed with the full weight of his body on his left ankle. He heard a slight cracking sound and felt an excruciating pain. His mother and sister ran in and cried out in concern. His dad followed and bent down to examine him. He immediately guessed it may be a fracture and asked Ray to absolutely lie still. Ray looked up and saw Neil standing in the kitchen doorway, but could not discern the expression on his face. They rushed Ray to the hospital and the X-rays quickly confirmed his dad's diagnosis of a fracture. He said the symptoms were very familiar to him, since he had had a very similar injury at about the same age. The doctor estimated he would have to be on crutches for at least six weeks. Ray spent the rest of the weekend in bed. Sunday evening Neil and his wife left for home. Judy drove back to New Jersey the following morning. He stayed on for another week until the pain had subsided and he felt well enough to travel. The depressed feeling that had come over him the first night never entirely left. Lying in bed the rest of the week, Ray had plenty of time to ponder this sudden reversal of fortunes, but he just could not figure out why he had fallen. His mind kept going back to the conversation at dinner the previous Friday. It left a sour taste in the mouth. As the week proceeded he felt an increasing sense of suffocation, despite the attentive physical care his parents lavished on him. About the only moment of joy he felt all week was when he woke one morning to find a recorded message on his cell phone. It was warm greeting from Anya followed by a hearty Russian drinking song that made him laugh heartily. Ray had an urgent desire to get back to California. So in spite of his mother's insistence that he remain in bed for another week, he made some excuses about urgent work and flew West at the first opportunity.

The morning of Ray's scheduled arrival back in California, Lauren walked into Dan's office. Lauren was their most trusted employee and the person Dan felt closest to in the world apart from his three partners. She was fifteen years younger but their ideas and attitudes on so many things were so different that it felt to Dan as if they were separated by at least two generations. Yet, in spite of the distance, there was something good and wholesome about Lauren which deeply attracted him and her dedication to MAI was total. Seeing Lauren cheerful was an index for Dan of how things were going in general. Seeing her disturbed was a warning and cause for concern. She closed the door of his office and sat opposite him. He looked up smiling and saw a look of serious concern on her face.

During the last two months, Lauren had been given the responsibility of tracking down former MAI engineers to find out if any of them would be interested in rejoining the company in the event NASA approved their design concept. Anya had argued that she could save several months if she had a team that was already familiar with her approach and the work they had done on MAIS. Though the applications were very different, several important modules for translating psychological variables into algorithms could be adapted from MAIS to PAIS. Anya had been particularly eager to get Tony Preston back, since he was the most knowledgeable and qualified of her former team. Tony's presence would be a tremendous asset. When Lauren had contacted him, he said he had recently left another job in New York and would be happy to come back if MAI had an opening for him. After NASA approved their concept, Lauren had called Tony first and he had started work three days ago. Everyone had been so busy concentrating on the assembly of the PAIS team, there had been little time for casual conversation. Since Tony's qualifications were already fully known, no one had bothered to even inquire about precisely what he had been doing for the past one year; no one, that is, until Lauren did it this morning. She told Dan that what she learned disturbed her deeply and she felt it was her responsibility to report it to him.

"When I casually asked Tony what he has been doing since he left MAI, he made some vague general reply, then asked me about my family. I immediately sensed that he was being evasive, so I told him that I needed to record the information in his personnel file. Tony gave me a big smile and began to talk excitedly but in a nonchalant manner that seemed affected. Gradually the facts came out. He spent the last one year working with Jake Talbott on MAIS! He says that after he left MAI at the end of 2002, Jake called him and offered him a job which he readily accepted, since he already knew Jake and his business very well. Personally, I suspect it was Tony who called Jake, not vice versa. Anyway, when Jake learned from Tony that the defect in MAIS had nothing to do with making poor investment decisions that could endanger the

hedge fund's capital, he asked Tony if he could operate the old beta version which Jake had retained but stopped using when he was told it contained serious defects. Tony says he hesitated at first, but then decided there was nothing wrong with doing as Jake asked. He rationalized that MAI had decided to permanently cancel the product and that Jake had already paid MAI seven million dollars on his own initiative as a gift. What could be wrong with Jake using the program which MAI had discarded? He spoke excitedly about the efforts he had made to improve MAIS for Jake and the successes he had achieved. Then he said that after working there for ten months, Jake began to quarrel with him over some bad investment decisions that MAIS had recommended, which resulted in heavy losses for the fund. Tony defended himself by telling Jake that he had warned him in the beginning about the overall negative impact MAIS would have on the markets he was concentrating on, but Jake insisted the losses were the result of the alterations Tony had made to MAIS. Finally, one day Tony got fed up with the unjustified accusations against him. He reminded Jake that he did not even possess a legal right to use the software. Jake got angry and fired him. Tony returned to his office and ran a small program that altered some of MAIS's basic algorithms, rendering the program totally useless. He left a message for Jake and walked out for good."

Lauren paused to observe Dan's response to her narrative. She knew him too well to expect any immediate reaction. Dan would gather all the facts and examine them carefully before he made judgments or responded. But she could see the concern in his eyes and knew she had been right to come to him. Dan thanked her and asked her to wait while he requested Anya and Vinay to join them. When they arrived, he asked her to repeat the story again. Vinay became visibly disturbed as soon as he learned that Tony had gone to work for Jake and reactivated MAIS without license or permission—his program! Lauren could not recall ever seeing Vinay this angry before. Anya remained impassive until she heard Tony had modified MAIS to improve its performance. She was very sure he was incapable of solving the problem they had discovered in the software. So by improving performance, Tony could only mean aggravating the general problem in order to maximize gains for the trader who uses it. They both agreed that Tony had acted inappropriately, even illegally. Vinay wanted to fire him instantly. Anya agreed that they had solid grounds to fire him, but she was relying so heavily on Tony to meet the tight schedule on PAIS that she was very reluctant to do so. Dan said the thing that concerned him the most was Tony's act of sabotage after Jake fired him. "I don't approve of anything Tony has done, but at least he could rationalize some of those actions. It is true Jake paid us seven million dollars. It is true we have discontinued MAIS. Helping Jake use it does not cause any direct harm to us. But having once decided to do so, I cannot see any justification at all for sabotaging the software later. That act is vindictive and unscrupulous! Personally, I am in favor of firing Tony at once; but we agreed when we started that Anya would have total authority over the operation of her department, so the decision has to be hers." In response, Anya said it was only fair to hear Tony's explanation before coming to a final decision.

Two hours later Dan and Vinay drove to pick up Ray at the San Francisco airport. On the drive home, Dan inquired about his visit and his accident. Dan seemed interested not only in the accident, but in every word that Ray and his family members had exchanged. He listened without interruption and became very thoughtful. Finally, Ray asked them about developments back at MAI regarding the project for NASA. Vinay briefly narrated what they had just learned about Tony. Ray was shocked by the news, but seemed too preoccupied with himself to give it full attention.

The following Monday morning Ray hobbled into the office on crutches and they met in the conference room at Dan's request. Anya related to them the follow up conversation she had with Tony. Tony admitted to everything Lauren had told them and apologized for doing anything that they considered inappropriate. He assured her his objective had never been to hurt MAI or any of them in any way. He even offered to resign, if that was what Anya wanted. Of course, Tony knew that was not what she wanted and Anya knew that he knew. At the end of the meeting, Anya informed him he could stay. She looked at her partners to see their response. Vinay's dismay was visible. She had found Ray already depressed and disturbed when he came in, so she had difficulty sensing his reaction to her decision. Dan's face was impassive, but she already knew what he thought of the matter. Anyway, as far as she was concerned, the most important thing was getting on with their work. So she launched into a discussion of the development plan for PAIS. But before she could finish the first sentence, Dan stopped her. He wanted to talk about something else.

"Has it occurred to anyone else in the room that the events of the past few days are unusual?" he asked. He looked around but met with blank stares. "I am referring to Ray's accident and the issue regarding Tony. Doesn't it strike you as odd that the moment we get approval to work on a new project to generate harmony among small work groups for NASA that we are confronted with two powerful instances of disharmony which directly impact on work? A year ago I would have dismissed it as an unpleasant

coincidence. Now I am not so sure.” Suddenly it occurred to Vinay that Dan was referring to some idea he had read in *The Book*. Anya and Ray still looked puzzled by his line of thought.

Dan continued. “When Ray called and told me about the circumstances surrounding his accident, it struck me that the accident might be a response to the quarrel between him and Neil and the pressure being exerted by his family.”

“That’s going a little too far, Dan,” Ray replied. “I fell down the stairs. It is as simple as that. No one pushed me. I simply fell. I was tired and groggy and clumsy, that’s all.”

“Of course, no one pushed you, Ray. But that does not mean your fall and their attitudes are unrelated. Do you recall my mentioning an *Archive* article referring to the *Count of Monte Cristo*? After reading it, I went out and got a copy of the novel. Its full of profound insights into life. Edmond Dantes is thrown into prison on false charges trumped up by Fernand, who wants to steal his fiancé, and Danglars, who wants to steal his job as captain of the ship. They are both jealous. After languishing in prison for years and on the brink of self-imposed starvation, he meets the Abbe Faria, the ‘mad priest’ as they called him, who accidentally tunnels into Edmond’s cell instead of reaching the main prison wall. As they become acquainted, Edmond narrates his life to the Abbe, insists on his innocence and says he has no idea why he was thrown in prison. The wise Abbe knows there must be an explanation and soon happens upon it. He identifies jealousy as the motive of the two conspirators. He also rightly deduces the prosecutor’s motive for imprisoning Edmond after saying he believed in Edmond’s innocence. You told me in the car on the way back from the airport that you felt exhausted and slightly depressed that night and the feeling continued the entire time you were in Boston. Do you still feel the same way now?”

Ray shook his head. “I actually was feeling suffocated there. But the moment I got on the plane, I began to feel better. Seeing you and Vinay at SFO made me feel like smiling for the first time in a week. When I got home to Rana and the girls, I felt like a different person. I really don’t understand why I was so bothered and disturbed in Boston.”

Dan went on to share his own understanding based on ideas he had read in *The Book* and *Archives*. Life is a field of energy. When human beings relate to one another they exchange energy. When they relate positively and expansively, the energy level increases. When they relate negatively or critically, it shrinks. Dan said he hesitated to speak about Ray’s family because he knows how attached Ray is to them all, but it seemed obvious to Dan that Neil’s critical attitude of domination and disapproval was directly responsible for the accident. “If life is a field of force and human attitudes and emotions are expressions of force, then what occurs to us and around us reflects the play of those energies. Physically, it expressed as your fall down the stairs. Psychologically, it expressed as depression.”

Ray seemed disturbed by Dan’s explanation and reluctant to accept it, but when he tried to formulate a rebuttal, he found it difficult to disagree. So instead, he asked Dan in a somewhat complaining tone why he had thought it necessary to raise this discussion in a meeting of the partners. He appreciated Dan’s concern, but after all this was a personal family matter, not business.

Dan replied that the three of them were as concerned for Ray’s personal welfare as they were for his role in the company. But apart from that, he had raised the issue because he believed it is directly relevant to MAI and PAIS. Vinay and Anya both gave him a questioning look. “Ten days ago we had a meeting at NASA that turned into an open confrontation and quarrel between members of the selection panel. We have no idea why and neither does Sam Hunt. Why was Roche so aggressively hostile? Is it merely a coincidence that our proposal to develop a program to promote harmony results in disharmony? Then the next thing we know, Ray flies home, walks into a quarrel with Neil and ends up with a broken leg. Is it a mere coincidence? A few days later Lauren tells us about Tony’s quarrel with Jake which ended badly and that becomes a source of disagreement and tension between the three of us. Can that be a coincidence too?”

Dan stopped at the question mark and waited for a response. Everyone looked thoughtful. Then he concluded. “I have a feeling there is something more that we can learn from these events than just about a few quarrels, something that may hold a key to the success of PAIS. I called you together to raise these questions, so we could pursue them together.”

22. Decisions, Decisions, Decisions

Over the weekend, Dan puzzled over the questions he had raised, looking for a clue. He had the feeling the answer was right in front of him staring him in the face, but for some reason he was unable to see it. He woke up early and spent most of Saturday reading *The Book*. One sentence in particular from the very first chapter jumped out at him.

All problems of life are problems of harmony. They arise from the perception of discord and the search for agreement.

The first sentence struck him forcefully. The idea itself was simple, but it was stated in such an absolute manner that it compelled him to think deeply. He had no difficulty conceding that many problems arose from a lack of harmony, but all problems? Certainly the statement covered marriage fairly well, he thought with smile. What about business? He reviewed all the major problems that they had faced at MAI over the past three years. They had a problem harmonizing their goals with the financial means at their disposal. When they developed MAIS, they encountered a problem of harmonizing the good of their direct customer and their own company with the general welfare of the society; or to put it another way, harmonizing personal values with accomplishment. They faced the constant challenge of harmonizing their personal lives with the demands of work, and their personal preferences and characteristics with those of the other three partners and their employees. It even occurred to Dan that the very mission of MAI was to harmonize the impersonal power of the computer with the consciousness and needs of human beings.

The second sentence was equally compelling. Everywhere a problem occurred, they perceived a discord between divergent goals, values, interests or forces. Everywhere they struggled to find a meeting ground, a basis for agreement and reconciliation. These two simple sentences gave him a whole new way of looking at the challenges they faced in life. Suddenly, the missing clue revealed itself. The word ‘agreement’ was the trigger. Harmony was based on right *choices* that lead to agreements that reconcile opposing views, interests and priorities. Harmony was a matter of making the right *decisions*.

Dan reviewed the three incidents they had discussed the previous afternoon—the three problems of disharmony. The first was the disharmony resulting from differences among the NASA selection panel. It arose from a disagreement regarding the choice of vendor and product concept for the ISS, the best decision. The second was the disharmony Ray confronted in Boston. Again it reduced to a question of the best decision. In this case, the decision or decisions in question were those Ray had taken in his choice of education, his profession and his decision to join with them in establishing MAI. Decisions again. Finally, there was the problem of Tony Preston. He had made a decision to approach and join Jake and to inform Jake about the real problem with MAIS. Tony had decided to help Jake reactivate and even improve the software. Jake had decided to blame Tony for the losses he incurred using MAIS. Tony decided to quarrel and sabotage the software. Anya had decided to hire Tony in spite of the unreliable character traits he exhibited. Decisions, decisions, decisions. *Take away the issues related to these decisions and the disharmony vanished immediately. These were not problems of personality, they were problems of choice.*

Dan was eager to share this insight with his partners. On Monday morning he left for the office earlier than usual. His three partners were already in the midst of an animated discussion when he arrived. He could tell from the tone of their voices that they were in a playful exuberant mood. One look at Ray was enough to see he was rapidly recovering his normal good mood. Over the weekend he had mused for hours about the events in Boston and decided he would not allow family pressure to deter him from the choices he believed were right.

When Dan entered the room, Anya explained that they were trying to take a decision regarding product development strategy, but discovered that they each took a different position. Anya complained that her efforts to explain the superiority of her approach had only raised a protest of laughter from the others. “I even threatened them with a dose of Russian feminine rationality, but they remain impervious to good sense! You’d better talk to them. Dan could see they were having fun with one another and felt that was what they all needed most at the moment. But he also saw the potential conflict beneath the surface. He smiled and stopped them all with a gesture. “This is precisely the issue I wanted to discuss with you this morning.” Ray and Vinay simultaneously asked Dan to wait in line for his turn to come. It occurred to Dan at that moment that if only all human decisions could be handled in this manner, there would be far fewer problems in the world. Again he signaled a time-out and managed to command a momentary silence. “I just wanted to tell you that decisions are the key to PAIS.” His enigmatic statement had the desired effect. They were curious to know what he meant and indicated their willingness to listen.

Dan then reviewed the insights about harmony that he had obtained over the weekend from reading *The Book* and how he related it to their work at MAI and specifically to PAIS. “All along I have been thinking that PAIS must be based primarily on a deeper insight into complementary and contradictory personality types and the ways in which they interact with one another. I thought the main difference between our approach and that laid out by the other vendors would be that we broke with conventional wisdom regarding the compatibility of similar personality types and sought for the secrets of attractions between opposites. Now I realize we have been approaching the problem from the wrong end—from the end of people rather than from the end of problems. Instead of trying to model human compatibility, we should be trying to model human decision-making. If the statement in *The Book* is correct, we cannot hope to eliminate problems by eliminating differences. Work situations inevitably generate problems and contradictions and work on the ISS is no exception. What we can do is to try to develop a more effective and rational mechanism for small groups to take decisions without generating misunderstandings and disharmony. The three problems we discussed yesterday are not problems of personalities. They are problems relating to specific decisions. If we can handle decision-making effectively, we can address the root sources of disharmony among the members of the team. Your playful disagreement this morning only proves the point. If we can evolve a more effective mechanism for taking the decisions we face at MAI, such as the one regarding product development strategy for PAIS, we will have the answer for ISS as well.”

Just then Lauren entered the room with a huge smile on her face, a large bouquet of flowers in one hand and a large brown bag in the other. Vinay looked up and asked, “What’s the occasion? Are you getting married?”

Lauren blushed and shook her head, then smile mischievously. “You wish! You think you can get rid of me as easily as that?” The ambiguity in her comment made everyone laugh uproariously. Even Ray smiled for the first time. Then Lauren went over and presented Ray with the bouquet. “Welcome back! Sorry I missed you yesterday, but I had to take care of my mom.” Then she bent down, hugged and kissed him on both cheeks in French style. By the time she stood up again, his face was three shades brighter and more cheerful. Then Lauren opened the brown bag and passed around some magnificent looking French pastries and cups of Starbucks’ cappuccino.

“A woman’s touch!” Vinay exclaimed in appreciation, “It does wonders.” Anya agreed and felt grateful to Lauren for her thoughtfulness, but she couldn’t help feeling a slight pang of guilt that she had not provided that touch herself when Ray so dearly needed it.

After the meeting adjourned, the three men left the room. Anya lingered behind. Lauren began removing the cups and plates. “That was so sweet of you, Lauren,” Anya remarked when they were alone. “Sometimes it’s so hard to be a woman in a man’s world. I never seem to choose rightly between getting work done and thinking of other people. It’s my constant dilemma.”

Lauren laughed, “For me there was never been any doubt. I was raised in a strict Roman Catholic family where the rule was always do what is right and pleasing to others, never mind what is practical or efficient. That’s why I find the work here so challenging. Everyday I confront decisions in which I have to reconcile people’s feelings with the requirements of work. Sometimes it’s a nightmare.”

“But you are always so kind and pleasant to people, no one ever senses the conflict in you,” Anya responded.

“I don’t know about that. You should have been there when Tony told me what he had done. I nearly exploded. I felt he had betrayed you all, betrayed MAI. Though I kept quiet because it was not my place to judge or comment, I am sure my eyes were like burning coals. That is how I felt inside, anyway.”

Anya nodded, walked over to where Lauren was standing, placed her hand on Lauren’s arm and spoke more softly than before. “Lauren, that is how I feel every day! Do you have any idea what it is to descend from a line of princesses? My great, great grandfather owned thirty thousand acres covering ten villages and a town. His wife was a lady in the Czar’s court. Of course, we lost all the wealth and social position generations ago. But I can still feel that imperial blood in my veins rising up to demand obedience. At NASA they used to call me the Russian flame thrower!” Lauren burst out laughing. “You can laugh, but it’s true. That’s what I was like and I still am, only now I try to control it.”

Still laughing, Lauren said, “Oh, Anya, you are so lucky to have these three guys as partners. They are angels!”

Anya shook her head. “You think so? Let me tell you something. Vinay may be the most beautiful, charming and accommodating man alive, but don’t let appearances fool you. When he decides something on what he calls principle, he is absolutely immovable. He may not shout or push his way around—sometimes I

even wish he would express himself more forcefully—but on things that really matter to him, he is even more uncompromising than I am—only he is more graceful about it. And under all the politeness I believe he is a male chauvinist at heart. And Dan may be calm, quiet, patient, a good listener, but when he thinks he knows something, no amount of pressure can make him agree otherwise.” Realizing the inherent irrationality in her own statement, it was Anya’s turn to burst out laughing. “Then there is sweet, lovable Ray. I used to think he was weak, because he lets Rana have her way at home and he never insists he is right or insists on having his own way. You should have seen him at NASA. That man Roche was so pushy, offensive and irrational, there was no way to reply to him. Even Dan just kept quiet. Then suddenly mild mannered Ray Berger spoke up and blew him away. Ray didn’t accuse him or raise his voice. He simply spoke the plain truth with clarity and conviction. It won over everybody. If you think it is easy working with these guys, I’ll trade places with you so you can see for yourself. They raise the bar so high I often feel I can never make it over on the next jump. That’s when I focus entirely on work and practical results. If I have to start worrying about pleasing people and what they think, I wouldn’t get half as much work done.”

“I’m not so sure Anya. Maybe you are trying too hard to prove something to people who are already convinced. As I understand it, royalty accomplishes by just being royal, not by doing. The Protestants are so obsessed with doing good. The Jews are obsessed with saving the world. We Roman Catholics are taught to be content with just being good. I would have thought it was even more so in Orthodox Russia. Perhaps, seventy years of proletarian dictatorship have reduced everyone there to the status of a worker. Companies and countries need leaders as well as workers. Maybe you should do more leading and less working. I am sure everyone around you is ready to follow.”

Amazed at Lauren’s perceptive insight and touched by her goodwill, Anya leaned over and hugged her. Then she whispered into Lauren’s ear. “By the way, if you have any serious designs on either of my partners, please tell me now. Otherwise, Katia could use two fathers to make up for my deficiencies as a mother. I just might marry both of them.”

Smiling brightly, Lauren replied, “Elder sisters get first choice, Anya. Just promise to make me a maid of honor. That’s all I ask.” Lauren felt a warm shiver of delight travel down through her whole body as a new possibility occurred to her for the very first time.

PART II: THE GNOSTIC STAIRWAY

23. The Matrix

Ray spent the afternoon browsing through some of the *Archives* documents which Dan had brought to work that morning. After an hour he came across an intriguing statement:

Decision is a psychological organization.

Sensing it was relevant to their quest, he was unable to make sense of it. He began to think about what the word “decision” actually means. He formulated his thoughts this way: a decision is an act of will that is based on the goals we seek to achieve, our understanding of a situation and the values and attitudes we have regarding elements of the situation. The nature of the decision we take depends on how we arrange and perceive these different elements and what priority we assign to each. Anya’s decision to not to fire Tony in spite of his betrayal of trust reflects the importance she places on his technical knowledge and skill and the demands of work at MAI. Ray’s reluctance to retain Tony is based on his own assessment that a person capable of betraying Jake is also capable of betraying MAI. Character was as important or more important than capacity in Ray’s view. How could they come to an agreement when they both accepted the same facts but placed different values on them? A situation like this was bound to lead to disagreement and among people with less feeling and understanding for one another than the partners, to disharmony or resentment as well. Was there really a way to eliminate conflict in situations such as this? Ray very much doubted it.

After musing on the problem for a while Ray went back to the *Archives* hoping to find something that would help him see a way out of the dilemma. An hour later he found it. It was an *Archive* article with the remarkable title, *Infallible Method for Taking Successful Decisions*. Ray very much doubted whether such a method did or could ever exist, considering the limitations and fallibility of human consciousness. Intrigued, he read the article carefully. The article examined in detail the elements that made up a decision, but it provided a different organizational framework than the one Ray had adopted. It divided the elements into two basic categories—internal and external—and evaluated each element in each category according to whether it was positive or negative, conducive to a successful outcome or opposed to a successful outcome. Under the list of Internal factors the author included the capabilities and motivation of the person making the decision, elements such as the intensity of aspiration, self-confidence, faith, opinions and attitudes about the feasibility and desirability of a particular choice, and values. Under External factors, the author listed the availability of the required resources, social or market conditions, and the general atmosphere or environment.

It then classified the situation into a matrix consisting of four quadrants. According to the author, decisions lead to successful accomplishment when both the external and internal requirements are fully positive. The matrix represented the four basic types of situations in which people make decisions and the outcome resulting from each type. The upper half of the cube represents the outer conditions and the lower half the inner or psychological conditions. The right half represents positive attitudes and the left half negative attitudes. Combining them results in four possibilities. Quadrant IV is one in which both inner and outer conditions are inadequate or negative. Acting in such a situation leads to total failure. Quadrant III is one in which the external conditions are positive, but the internal conditions are negative. Decisions of this type meet with initial success and then quickly land in trouble and ultimately result in failure. Quadrant II is a situation in which the external conditions are unfavorable but the psychological conditions are quite positive. Decisions of this type face lots of hurdles in the beginning, but if one persists they can be made successful. Quadrant I represents a situation in which both the external and internal conditions are positive—a highly desirable condition for accomplishment. Decisions taken in Quadrant I situations inevitably succeed, only the extent of the success can vary according to how positive the elements are.

<p>Q-II + inside - outside</p>	<p>Q-I + inside + outside</p>
<p>Q-III - inside + outside</p>	<p>Q-IV - inside - outside</p>

Ray struggled to grasp the significance of the approach until he came across several examples. The first was an example from Jane Austen's famous novel *Pride & Prejudice*. Ray knew the incident well because a former girlfriend studying English literature at Wellesley had made him read out the scene with her just for amusement. A clumsy, clownish and uncultured clergyman named Collins visits the home of his cousins in order to select a bride from among the five daughters of Collin's uncle, Mr. Bennet, a well-educated and refined country gentleman. Since Mr. Bennet is without male offspring, his estate has been entailed to his nephew, who will inherit all his property on his death, leaving Mrs. Bennet and the daughters with only the modest dowry his wife had brought to their marriage. Based on his future claim to the Bennet estate, Collins justifies to himself his high marital aspirations and seeks the hand of Jane Bennet, the eldest and loveliest of the five daughters. When he is informed that Jane is already nearly engaged to a wealthy gentleman, he immediately shifts his affections to the second daughter, Elizabeth, who is only slightly less lovely and by far the most intelligent and sophisticated member of the whole family. It is impossible for a young woman like Elizabeth to regard Collins' proposal as anything less than a calamity, a fool of a country bumpkin seeking a prize way beyond his ken. Encouraged by Mrs. Bennet, whose only concern is to keep the property within the family, Collins proposes to the reluctant Elizabeth in one of the greatest comic scenes in all English literature—unknowingly insulting her by his reference to her relative poverty, undermining his own efforts to impress her by his close connection and admiration for aristocratic grandeur, making a total mockery of Elizabeth's ideal of romantic love by his instantaneous professions of unbridled passion, and exposing himself as an utter fool in the process.

Ray very much doubted that even a decision-making matrix could have helped a fool like Collins who seemed utterly incapable of objectively assessing his own situation. The author did not attempt to address that ultimate question. Instead, he empowered Mrs. Bennet with access to the matrix and asked what she would have done had she relied on it for direction. Mrs. Bennet was no genius. In fact, she more closely resembled in intellect her husband's nephew than her own second daughter. But she was the marriage maker in the family and centrally positioned to orchestrate events to bring about a desirable conclusion. She had enough knowledge and sense to know that Elizabeth was too good looking, strong-willed, independent and romantic to marry a man merely for the sake of property. She also had firsthand knowledge that Elizabeth was repelled by her cousin and openly refused to even receive his proposal until her mother forced her to do so. Neglecting all these factors, Mrs. Bennet persisted in encouraging the alliance because she perceived the external factors were so alluring. Collins was to inherit the family property and Mrs. Bennet wanted to keep it in the immediate family. It was as simple as that. Whoever has spoken about the infallibility of a mother's intuition obviously has never met a Mrs. Bennet. And English literature is indebted to Jane Austen for so artfully depicting this instance of immortal folly. Ray laughed out loud as he recalled the scene to his mind and imagined himself explaining the pros and cons of an alliance between Collins and Elizabeth to either the aspiring groom or the expectant mother.

Ray put down the article and began to reflect on some of the crucial decisions he had taken in his own life—decisions so contrary to the advice of his family—to see whether his choices would hold up to objective scrutiny by the model. Finally he could submit his case before an impartial judge to pronounce on the extent of his own folly. He began with his decision to study information science. He readily classified his choice as Q-I. Externally, the demand for MIT engineers was so strong that most of his classmates were hired before graduation on starting salaries at or approaching six figures. Psychologically, he always had a fascination for technology and its potential applications to improve the human condition. He had no doubt that he could convert his degree into remunerative employment any time he chose to do so. He placed his decision to take a MA in Political Science in Q-II. Psychologically, this was a good choice, because his personal interests and aspirations followed the lead of his father into the public sector. As a child, he had been fascinated by his father's stories about the Vietnam and Watergate cover-ups and the continuous threat to democracy from the concentration of power among politicians and their wealthy supporters. Externally, he was not so sure he had done the right thing. The demand for engineers in the field of politics was relatively limited. But he had proven he could make it work when he landed the job at Arlington Institute. He rated that decision a success as well, despite the family opposition. He had not failed at Arlington or even been disappointed. He left because he found something that appealed to him far more—MAI.

For him personally, MAI was the crucial test. Psychologically, he had never been so inspired or pleased by any choice in his entire life, except perhaps his proposal to Rana. Here he was presented with an opportunity to combine his technical and political knowledge for the public good. It was a perfect job description. Externally, the conditions also appeared to be ideal. The IT industry was experiencing the kind of exponential growth that the automotive industry experienced after the introduction of the Ford Model T. In a few years, America's car production soared from a few thousand to more than a million. The growth in computers, Internet and AI far exceeded that. There was virtually infinite opportunity. Again externally, he had managed to find three other people who shared his aspiration and possessed complementary skill sets

and work experience. It appeared then and still appeared to him now as a perfect match. They had sufficient money of their own, at least until the market collapsed, and succeeded in raising enough to complete MAIS. They had succeeded in creating a product that outperformed financial systems created by the large brokerage houses over five to ten years at a cost ten to twenty times higher than MAIS. How could they deem that a failure? But, in fact, it was a failure. MAIS failed in spite of their talent, commitment and the conducive external environment because their personal values and standards far exceeded those of other people in the field. Had they applied the matrix to analyze that decision, they might have realized that their standards and expectations were so high that the probability of failure would also be high. Would it have made a difference to their decision? He doubted it very much. Not to his anyway. He believed it was worth an attempt. He had been willing for the adventure and thrilled in the endeavor. Even now he was not so sure he would have done anything different.

Ray chuckled to himself that he liked this matrix approach. The more he examined his own choices according to the matrix, the better he felt about what he had done with his life. It was heartening to be told—even to tell himself—that he had not been an utter fool like Collins. But self-justification could only go so far. After all, his brother Neil had been right when he insisted that thus far Ray's choices had led to failure. Would it always be that way? Ray turned again to the matrix and re-examined what he had learned. Perhaps, he thought, the decision to start MAI had not been a Q-I decision after all. In spite of their expertise and the conducive market, perhaps their internal aspirations and values had exceeded their external capabilities. Their choice fell in Q-II. If so, what did the matrix have to say about it? According to the article, a decision taken in Q-II might start off badly but it could always be converted into a success over time because strong inner aspiration and conviction had the power to create the positive external conditions needed for accomplishment. In such instances, the author counseled patience and perseverance to work until the obstacles were overcome. That was encouraging. Moreover, it corresponded with Ray's own deepest inner convictions. In spite of what had happened, he still felt he had made the right choices, including the choice to start MAI. The matrix not only confirmed the course he had taken. It also dispelled the blanket of self-doubt and guilt that had been sapping his energy and initiative. He suddenly felt stronger, more determined and more confident than he had in years.

The following morning Ray asked for a meeting of the partners to discuss what he had discovered. He presented the model and illustrated how the matrix could be applied in various situations. Anya raised some questions regarding how the process actually works, so Dan suggested they test it out on her decision regarding Tony Preston. Each of them drew their own matrix and assigned values to the internal and external factors. Then they compared notes. They were all in agreement regarding the external situation. They were short of staff to meet the project deadline and Tony was without doubt the best person they could get for this type of work. Where they differed was on the psychological aspect. Dan, Vinay and Ray all believed that keeping a person who had demonstrated his lack of reliability would prove to be unwise and, perhaps, even dangerous. When the situation was presented in this light, Anya did not disagree with them. By analysis they arrived at a consensus that rehiring Tony was a Q-III decision—easy to begin, but likely to fail in the end. She too saw the danger and regretted her decision. She even said she would consider reversing it and letting Tony go after all. Dan was not in favor of reversing her decision. “You made a decision. Let us live with it and learn. Hopefully the fact that we are alert to the possibility will help protect us in future.” Dan praised the power and simplicity of the matrix. “If this works, it might cut six months or more off product development time for PAIS.”

Then Dan raised another point which had been puzzling him for some time. “Do you realize what it would mean if the matrix works for PAIS? It would mean that we really did not need Tony in the first place because the matrix would save us so much time.” None of the partners grasped the point he was trying to make. Dan referred back to the title of the article Ray found, *Infallible Method for Taking Successful Decisions*. “When I first heard that title, I thought it sounded too definite and emphatic. Could anyone really say there was an infallible method? Ray mentioned having the same doubt. Now I am beginning to connect this article with other things I have read. According to *The Book*, our inner attitudes have power to change external circumstances and conditions. The matrix seems to be based on the same principle. The author seems to be saying that provided the inner aspiration and determination are sufficiently strong, the external conditions can be altered in response to the inner intensity. That is why a Q-II situation can be converted into Q-I over time. Our own experience confirms it. We founded MAI with a shared aspiration and created MAIS, then discovered we lacked some essential knowledge needed to make the program do what we wanted. After some time *The Book* and *Archives* have come, providing us insights which I feel sure will tell us what we need to know. Our decision to found MAI was in Q-II. Over time it is moving to Q-I. It is the same thing with PAIS. We said we needed eighteen months to complete it, but NASA offered us only twelve. So Anya naturally concluded Tony would be essential for success. But now Ray's discovery of the

matrix may abridge the development time to twelve months or even less. Are these just another string of coincidences? Or do they reflect a pattern and a deeper truth of life as *The Book* seems to suggest?

“If I am right, then the author’s claim to offering an infallible method arises because he understands the process of decision-making at a level we have never conceived of before. Up until now, I have understood that decision-making was a matter of making the *right choices*, choosing the best alternative for success. But the *Archives* seems to be saying that if we truly understand the process, we can make our choice, any choice, into a *right* choice, because the decision itself has power to determine the result. It’s a parallel to Heisenberg’s uncertainty principle in which the observer influences the object of observation. In this case the quality and intensity of the psychological components of the decision have the power to influence the external conditions and the final outcome. At least, that is what it sounds like to me.”

As an initial step to test the approach, the partners decided to apply the matrix to one hundred decisions taken at MAI within the last one year to see what outcome the matrix would predict based on the analysis of each situation. They also decided to start applying the matrix in their own personal work to see what impact it had on the quality of their future decisions.

That night Dan went home to study thoroughly the *Archive* article Ray had found. Then on an impulse he Googled the phrase “Infallible decision”. To his surprise, he came upon another article by the same author titled *Advanced Decision-making Matrix*. The basic approach was the same as in the earlier article, but it went further. Here the author divided each of the four quadrants into four subquadrants, so that Q-I was now broken up into Q-I-1, Q-I-2, Q-I-3, and Q-I-4. The same principles and logic applied to the quadrants and the subquadrants. Q-I-4 was a decision that would definitely lead to success, but that success would be at the minimum level because the inner and outer requirements were barely sufficient to qualify for accomplishment. In Q-I-3 and Q-I-2 either the inner or external factor was present in greater measure than the other, leading to higher than minimum success over time. When both factors were present at the optimal level as in Q-I-1, the result would far exceed expectations and keep on expanding. Dan sensed that the arrival of *The Book* had moved MAI from Q-2 into Q-I-4. They had access to the knowledge they needed for high accomplishment but had not yet mastered it. They had the aspiration, but perhaps not sufficient intensity, faith, confidence, determination or patience to achieve the maximum results. After all, just a few weeks ago they had wavered on the brink of quitting. Only a thin line had prevented them from falling back. Dan decided he would not make that mistake again. If the inner has the power to determine the outer, then regardless of the external circumstances he resolved not to give up until they accomplished what they set out to do.

24. PAIS

The next two weeks became a pilgrimage of self-reflection into the past for virtually everyone at MAI. All work on PAIS was suspended while the partners and core staff of former employees who had returned to the company applied the matrix to examine decisions taken at MAI and in their personal lives. Ray developed a methodology for systematically analyzing each internal and external element of the decision, standardized definitions and set norms for evaluating intensity, direction and results. Each decision was loaded into a database so overall performance could be assessed. They met in small groups to review each case to ensure the approach they were all taking conformed to the model.

In the second week the atmosphere in the company underwent a noticeable change. Formerly extroverted people became quiet and thoughtful. People became preoccupied with examining crucial decisions in their own lives and reflecting on questions of purpose and values. Randy Stephens, head of accounting, decided he had made a mistake separating from his wife and took initiative to reconcile with her. Jean La Brec, a project leader from Avignon, confided in Lauren that he had decided to break his secret addiction to drugs.

A remarkable insight arose from analysis of the Tony Preston–Jake Talbott affair. It was Tony’s idea to raise the issue and see what the matrix could tell him about his past action. His analysis showed that the external factors were favorable since he possessed in-depth knowledge, contact with Jake and knew he could earn twice as much as he had been earning at MAI. Psychologically, he reflected on his own motives and attitudes as well as Talbott’s. If Jake was greedy enough to disregard licensing agreements and MAIS’ negative impact on the market, then surely he would not be a reliable and fair employer. He was one who would take advantage of any situation and not hesitate to cast blame when it suited him. Tony also perceived more clearly that the very use of MAIS was bound to generate performance problems sooner or later as its impact on the general market spread. Therefore the gains were likely to be short-lived. He concluded that the decision fell in Q-III—easy to start but most likely to end in failure—which is exactly what had happened. Tony’s findings became even more interesting when they were compared with those of Eric Green, a recently recruited engineer with an MBA in finance who had previously worked with McKinsey. Eric decided to analyze the same issue from Jake Talbott’s perspective. If Jake had consulted the matrix before hiring Tony, how would it have guided him? To everyone’s surprise, Jake’s decision also fell in Q-III. The matrix predicted an easy start and short term gains followed by losses and failure, which is precisely what happened. In both cases the decisions taken threatened to have repercussions that extended into the future. Tony had jeopardized his reputation at MAIS. Jake had attracted renewed attention from the SEC and had ensured that MAI would never sell him another version of MAIS if they did develop it. When they compared notes with Anya’s own analysis, they realized that regardless of who conducts the analysis or from which perspective it is conducted, the matrix always returns the same finding, provided they adhere to the guidelines of objectivity. If this proved to be the case all the time, it meant that the matrix could serve as an effective basis for reconciling differences between individuals in perspective, priorities and values. It meant that the matrix could become the heart and soul of PAIS.

When they compiled and analyzed the findings from their review of one hundred past decisions, they found that the matrix successfully predicted the outcome in 91 percent of the cases based on initial conditions. Subjecting the remaining nine percent to further analysis, they discovered that in all but three cases the results had not been properly evaluated. They found that this occurred in instances where the matrix predicted success but the success had not occurred according to the original criteria or in the original field. In one typical instance, a project concept developed for one large client had been rejected although it appeared to qualify for Q-I status, only to be later accepted by another client for an even higher value. The result had been deferred or deflected but proved even greater than expected. When Ray persisted in investigating the reasons for the exceptions, he found in all three instances the people involved had failed to objectively evaluate their own psychological motivation. They had reported that they were intensely committed to achieving a certain goal, whereas in fact they hesitated, feared or actively aspired for a very different outcome.

Two other types of analysis proved very revealing. Ray’s study of Q-II situations that eventually evolved into Q-I helped them isolate specific strategies that could be used to accelerate movement to a positive outcome. The other involved a further breakdown of Q-I situations into four subquadrants. Out of the one hundred decisions, they identified only one that fell into Q-I-1. Although it had nothing directly to do with work at MAI, it proved very instructive. It involved a decision by project manager Allen Shores’ wife to quit a good job at Microsoft one year ago to set-up an Internet based business. Her proposal had met with considerable resistance from Allen. He had just lost his former job at MAI and thought that the risks were too high at a time when they and their three children depended solely on his wife’s income. They had

quarreled for months before he finally agreed to withdraw his opposition for the sake of marital harmony. Allen initially rated the situation Q-I-4, meaning it would succeed at the minimum level. He was shocked to find that when he factored in his own change of attitude toward the decision, it jumped to Q-I-1, indicating exponential growth potential. During the first year she generated a net income of nine hundred fifty thousand dollars, seven times what she had been earning previously and she expected her earnings to at least triple during the second year. Once again, the matrix confirmed the fact that an attitude change can migrate a decision and have profound impact on its ultimate consequences.

The following week the partners announced that with immediate effect all future decisions at MAI would be taken based on matrix analysis and cataloged in the database for future tracking. The first decision was to send a team to NASA for interviews with former astronauts in order to test the matrix against past decisions taken under actual mission conditions. It was initially agreed that Ray and Vinay should go, until Lauren produced a matrix analysis showing that she was highly qualified to join the team and that her knowledge of psychology would be particularly helpful for the assignment. The matrix revealed that her intense aspiration to contribute more substantially to the growth of MAI was a decisive factor. Ray contacted Sam Hunt, Meg Wilson and Yuri Pavlov, all of whom offered full support. Meanwhile Anya and her team began working on algorithms to translate the matrix into an expert system.

The team returned from NASA in mid-May with data and analysis pertaining to one hundred seventy-three mission-based decisions, ranging in importance and complexity from the type of food to be included on their menu to the allocation of responsibilities in case of dire emergency on the ISS. Seventeen present and former astronauts participated in the research, many of them getting into the spirit of the project and enjoying the opportunity to second guess and critique their former choices and their consequences. A few of the astronauts expressed their discomfort with the exercise, since they had been involved with controversial decisions and mission failures. Participants reported that serious tension or open quarrels had surfaced during and with regard to forty-seven of the original decision-making situations. Therefore, particular attention was focused on these cases of known conflict. Although it did not figure within the scope of their assignment, the astronauts insisted on also including an analysis of the Columbia Space Shuttle mission that ended in catastrophe and took the lives of the seven member international crew fifteen months earlier. The matrix supported the view of the astronauts, who unanimously faulted the higher level decision not to retire Columbia, the oldest of the shuttle craft which had flown its first mission in 1981, in spite of the repeated safety concerns expressed by some NASA engineers.

The astronauts were uniformly surprised to find that the matrix endorsed the decisions they had taken in every single instance where the decision had led to fully satisfactory results. Four instances in which the matrix predicted better than expected results also conformed to actual experience. In twenty-nine of the forty-seven decisions that had generated various levels of disharmony among the crew members, the original decision taken later proved to be incorrect or suboptimal. In all twenty-nine cases, the matrix identified the error and recommended an alternative course. What remained were eighteen decisions involving crew disharmony in which the matrix concurred with the original decision. The astronauts agreed that in spite of choosing the correct course of action, the process of decision-making itself had generated a sense of disharmony which could have been avoided by the application of the impartial matrix-based approach.

After analysis of these cases, the team then asked the astronauts to prepare a comprehensive list of conflicts, quarrels and tensions arising during the missions they participated in and to identify the source of these problems as far as possible. To their own surprise, the astronauts found that more than eighty-five percent of the problems were directly associated with the same forty-seven controversial decision points. Another seven percent were indirectly associated because of the latent feelings of discontent that those decisions had created among crew members. Only eight percent of the crews' interpersonal problems were not directly related to a decision. In half of these exceptions, disgruntled astronauts conceded that prior decisions by another crew member had permanently prejudiced their attitudes toward the decision-maker and that negative attitude had surfaced in some apparently unrelated context. Only four percent of problems were left unexplained. The astronauts were in full agreement that if the remaining ninety-six percent of difficulties could be removed, this remaining four percent would be far easier to control or eliminate.

Appreciation and enthusiasm among the astronauts was so great that word spread rapidly among supervisory and administrative staff throughout the ISS division. Before the MAI team had completed their discussions with the astronauts, they began receiving requests from higher level offices in NASA for presentations and explanations about PAIS and the matrix approach. The only department head who did not insist on meeting them for discussions was Edward Roche, who remained aloof and unapproachable. But Gloria Hoffman and two other psychologists who worked for Roche did request a meeting and expressed considerable interest in MAI's findings. After that meeting Hoffman sent off a detailed report to Mossad. Soon afterwards she received a call from Kurt Levin asking for more information. The MAI team returned

home with more than sufficient data and internal support at NASA to confirm the suitability of the matrix approach.

Meanwhile Anya's team had made rapid strides in the development of the algorithms. By mid July, MAI was able to present the first prototype version of PAIS to NASA for assessment, just five and a half months after the project began and three months ahead of NASA's accelerated project schedule.

25. AIS¹

Soon after the MAI team returned from their May meeting at NASA, Dan turned his attention from PAIS to other matters. During the past two weeks, he had gradually become conscious of an extraordinary opportunity that engaged all his waking time and energy. This was something much bigger than he had ever dared to dream of before, something that could have incredible consequences. He felt he was on the verge of a momentous discovery. He tried unsuccessfully to calm the growing restlessness in his mind and excitement in his nerves, but the idea besieged him and consumed all his attention. He spent almost all his spare time reading *The Book* seeking confirmation and support for the idea. Everywhere he turned, he saw connections and possibilities that lay previously hidden. From a tiny seed the idea grew into a small kernel, from a kernel into the outlines of a concept, from an outline it grew in weight and density into a concentrated mass, then began to gradually spread out in multiple dimensions from an isolated body into a network of connected concepts and then into an increasingly ornate and tightly woven fabric of rare beauty.

This transformation was not the result of any mental effort on Dan's part. On the contrary, he was trying his best to still his mind and settle his nerves. But the more he tried to withdraw his mind and ego from the idea, the more it seemed to acquire an independent existence of its own; and to grow of its own accord until it connected all the isolated nodes of knowledge and experience which constituted his conscious mind, and extended further in each direction out into the boundless unknown. Dan found the experience at once exhilarating and exhausting. The exhaustion came from his struggle for self-mastery. The exhilaration issued from the self-multiplying expansiveness of the seed idea as it acquired depth, richness, beauty and a life of its own. At some moments his mind thrilled with the experience. At others it fell into a dull fatigue from which he feared it might never recover. Then suddenly a few hours later the clarity and intensity would return in greater measure than before and he would see that the idea had been all the time growing while his conscious surface mind slept.

Dan felt a powerful urge to call his partners and share his experiences with them. But something restrained him. Somehow he sensed and knew that it was not the right thing to do or the right time to do it. He could not expect others to suddenly embrace the vision that had sprouted and grown of its own accord in his mind. He would need to find an appropriate way to enunciate that vision to himself and communicate it others. Meanwhile, he returned to *The Book* whenever he found mental energy and delved far deeper into the secrets it held in reserve.

The more he tried to quiet and master his own mental activity, the more conscious he became of how disparate and unorganized his mind actually was. He observed thoughts rising up from below from his nervous impulses and bodily sensations. He also observed the reverse process of intangible bodiless thoughts converting themselves into nervous impulses and physical sensations. He saw other thoughts which seemed to sail into his mind out of nowhere and suddenly demand his attention and claim his allegiance. Through it all, he felt a rising sense of impatience and an increasing urge for action to express what manifested in his thoughts.

In order to resist the temptation, he began to isolate himself from others for long hours, remaining home until late in the morning, leaving early to return to his apartment. Most people at MAI were too busy to notice so he was able to avoid explanations, until the team returned from NASA. Lauren was the first to observe Dan's new pattern of behavior. At first she thought it might be a health problem and inquired whether he was feeling well. But the moment she asked, she knew it was not that. His face looked radiant and his gait exuded energy. Something else was happening. She noted how quiet he was during the meeting when the team reported their astonishing reception at NASA. He listened attentively and expressed great satisfaction with the results they reported, but somehow she felt he was not totally there. Immersed in algorithms, Anya was slower to note the change, but once she picked up on the concern in Lauren's eyes, she was quick to discover the reason. Unlike Lauren, she did not hesitate to ask Dan for an explanation right in the middle of the meeting. He responded naturally and sincerely without revealing anything essential. Others were satisfied, but Anya perceived behind the calm exterior an intensity and a light she had not seen before. Once alerted, she never again lost the scent of truth. Considerate of his freedom and his privacy, her unexpressed feelings became inwardly concentrated as a vibration of sweetness and goodwill.

As the weeks passed, the excitement at MAI gradually subsided into concentrated work on PAIS. NASA's approval of the prototype left them only one step away from completion, a step that Tony, Jean and Allen were fully qualified to perform with little guidance or interference. It was only natural for the other partners to begin to think of the future beyond the immediate NASA project and to mention ideas that had occurred to them about how MAI could build further on this foundation. Dan was pleased to see their thoughts turning in this direction and encouraged them to develop and share their own ideas, but he said

nothing of his own. This was too important a decision for them to take just because he believed it was correct or out of deference to his leadership. It was imperative that they all understood and fully endorsed the ideas as their own. He decided that his best course was silent will.

The partners met frequently as a group with a higher level of confidence, energy and enthusiasm than they had exhibited since the beta testing of MAIS. The scars of MAIS fully healed, Vinay exuded his native enthusiasm and irresistible humor. Ray's mind was in peak form. Anya looked dazzlingly beautiful as the lines of worry and fatigue receded and the joy resurfaced. Gradually the conversation came around to how they build on the power of the matrix to create a product with wider application and greater market potential. It was evident to all of them that if the matrix worked for decisions taken by individuals and small groups, it could work for larger groups and larger decisions as well. It was also evident that harmony was not the only reason for wanting to improve decision-making processes. If applications based on the matrix could improve the quality of decision-making in business, government, education, social and personal life, it could have immense impact on human productivity and accomplishment and unimaginable market potential. Dan listened attentively to each successive insight and encouraged each of his partners to elaborate on their own views. Slowly the bigger picture began to emerge and its significance became increasingly apparent to them all. This truly was a momentous opportunity. Ray concentrated his attention on identifying the whole range of possible applications for the matrix. Vinay focused on identifying areas with commercial potential and monetary value. Anya explored ways to augment the processing capabilities of the program to handle more complex situations involving a large number of variables and how to reduce subjective assessments to quantitative parameters.

By early July a larger vision had emerged within the group by their combined effort, and a strong consensus emerged that this was the opportunity they had been searching for when they set out to establish MAI. Their vision as they described it was fully in consonance with what had evolved in Dan's mind, though it stopped far short of the possibilities he saw in several directions. But it was a good starting point and basis for them to proceed. And what Dan considered most important of all, they had arrived at the decision by a process that denied any claims of authorship or ownership to any of them. It was a group creation with which they could all identify as their own. If it succeeded, they would all feel the total joy of that accomplishment. If it failed, they would all equally share the burden of failure. But Dan knew in his heart that failure was out of the question. The only questions he could not answer were with regard to how far they could take the idea and how big it could really get. Finally, Dan proposed a name for the new product, Advanced Intelligent System-1 or AIS¹. When Vinay asked him why he had added the number one, Dan replied, "Because this is just the beginning." After that meeting the company began redirecting its efforts toward development of a more generalized decision-making tool applicable to a far wider range of situations. Initially the partners decided to focus on the business sector, excluding financial markets, since that was the field with the greatest commercial potential. But they soon discovered that life had its own ideas.

26. An Irish Lesson

During the last week of July, Ray flew to Houston for a meeting with the NASA project team. On his return flight to San Francisco, he was seated next to a scholarly looking Englishman reading a book on the conflict in North Ireland. Half-way through the flight, his neighbor took out his PC and started working on some kind of concept map. The map was titled, “Strategy for Peace in Northern Ireland”. The map had a number of constellations representing major players. Ray could not read the small print on the screen, but he could not help seeing the names IRA, Republic of Ireland, UK Government, SDLP, Ulster, US Government, EU and several other parties representing major players in the issue.

At one point, the man turned off his computer and glanced in Ray’s direction. Ray smiled and casually commented, “That’s a weighty problem to solve on a flight to SFO.” The man was pleasantly surprised to discover Ray was both interested and knowledgeable on the subject. For the next two hours, the two of them discussed the issues, facts, options, possibilities, problems, barriers, and initiatives regarding the history and current status of the conflict in Northern Ireland. Finally he introduced himself as Richard Courke, Professor of History at the University of Dublin. He explained that he was on his way to a seminar at the Stanford Research Institute on strategies for conflict resolution. Since the breakdown of the Good Friday agreement in 1998, repeated efforts to revive peace negotiations had failed and sectarian violence again threatened to rear its head. It seemed like every possible strategy had been tried and failed. Courke was looking for a new approach and hoping the seminar might indicate some new options.

Courke then casually asked Ray about his own work. In response, Ray spoke briefly about MAI, their recent work for NASA on conflict avoidance and resolution among small groups, and their current work on AIS¹. Then he tried to illustrate how the decision-making matrix was relevant to the problem in North Ireland. At that point Courke brightened up and began to ask questions. Toward the end of the flight, he asked Ray for his card and said he would like to learn more about AIS. Their conversation reinforced Ray’s conviction that the approach they were working on was directly relevant to the resolution of political problems and international affairs. But he never imagined where their casual conversation would lead. Three days later, he received a call from Courke. Courke said he had completed his work at SRI and was wondering if he could drive over to Berkeley to learn more about what they were doing.

He arrived three hours later and Ray introduced him to all the partners. It was something of a novelty having someone so interested in their new product—especially since AIS¹ was still only a concept less than two weeks old. After two hours, Courke dealt them a surprise. He revealed that he was not simply working as a lone university professor. He was chairman of a confidential working group set up by the Government of Ireland to evolve a new approach to Northern Ireland before violence flared again. Courke narrated in more detail all the facts and approaches he had briefly mentioned on the airplane. This time they took detailed notes. After he was finished, Dan and Ray started asking questions. That resulted in another round of narrative which went on until late in the night. Then Courke asked if they thought AIS could help.

Dan replied with another question. “A conflict can be solved only when the parties to the conflict want a solution. No force on earth can persuade people to willingly give up a problem they are attached to. Before answering your question, I need to ask one in return. “Are the parties you represent willing for a solution or are they seeking a justification to perpetuate the problem?”

Courke smiled and nodded his head. “As an Irishman, I see that you have some insight into the problem. The answer is ‘yes’. I can answer with confidence that the people I represent are genuinely eager for a solution. That was not always the case, but it is now.”

Without hesitation, Dan responded, “Then I am very confident that AIS can help evolve that solution.” He then suggested that they resume the discussion the following morning and Courke agreed.

“Ireland?” Vinay exclaimed after Courke had left for the night. “Can’t we start with a more modest goal than solving one of the most intractable problems of the twentieth century? Dan, what do any of us know about Ireland? The only time I have ever heard you mention the word is when you narrate stories about your grandfather’s role as an Irish freedom fighter and I always thought there was a good deal of blarney thrown in for good luck. Apart from that the only fighting Irish I am acquainted with is the Notre Dame football team.” Ray thought of mentioning that he had studied the Irish problem as part of his MA thesis in political science, but he feared eliciting one of Vinay’s rhetorical quips, so he refrained.

How do we get into situations like this? Vinay wondered to himself. He had thought they should focus on developing a commercial product for the stock market. Without any initiative on their part, opportunity had presented itself in an entirely different field—outer space. Once again they all recognized that

life had presented them with an opportunity and they decided to welcome it, but none of them felt prepared for the occasion. Why was it that opportunity seemed to always come from unexpected quarters? They set out to create their first product for making money on the stock market and ended up creating one for generating human harmony on the ISS instead. From harmony among small crews of professionals in outer space their focus now shifted to harmony among irreconcilable communal enemies in what might well be the longest enduring instance of terrorist violence in human history. Could there really be a pattern, a principle or law that governed and explained their experience at MAI?

After Courke's departure, the partners agreed on a plan of action. Anya and Vinay began searching for information on the most recent developments in Northern Ireland. Ray reviewed the origin and history of the problem to refresh his memory. Dan browsed *The Book* and *Archives* for ideas or principles that might be relevant. When his confidence faltered, he recalled to mind *The Book's* emphatic statement,

All problems of life are problems of harmony. They arise from the perception of discord and the search for agreement.

If the source of the problem was a perception of discord, then the solution lay in changing that perception. That was precisely what the matrix did. It showed the means to reconcile apparent opposites, to migrate from discord to reconciliation. Around two in the morning, he came across a statement in the *Archives* that caught his attention, though he could not immediately say why.

The most powerful and compelling human aspiration is not for freedom or prosperity. It is for social recognition and respect. Most men will willingly relinquish their freedom in order to acquire status and prestige, which are the roots of power in human relationship and the foundations for the ego.

The next morning the partners reconvened at eight to compare notes. Courke arrived on schedule two hours later. Ray began the meeting. "As you know, Professor Courke, the problem of Northern Ireland dates back four hundred years, to the British conquest of Ireland in 1609. It is considered one of the most intractable political problems in the world, second only perhaps to the Israeli-Palestine conflict. It is the result of deep rooted religion, ethnic, political, social and economic factors. As we understand it, your immediate objective is to achieve a permanent cease fire in order to create more conducive conditions for a final resolution of the underlying problems." When Courke nodded his ascent, Ray stated emphatically that AIS¹ had the capability to help them achieve this objective.

They all waited with bated breath to see how their visitor would respond. Courke raised his eyebrows, looked around the table at each of them in turn and spoke one word, "How?" In response, Ray handed him a copy of the decision-matrix and began to explain how they had analyzed the situation. Courke listened and studied the paper intently and asked several questions. Initially he seemed to reject their approach: "Ray, you seem to be ignoring the most crucial factors in the equation—religion, politics, British nationalism, demography. Without addressing the concerns of the Protestants that they would soon be a minority in Northern Ireland and Catholic concerns about discriminatory behavior by the police and judiciary, no democratic set up will work here. Ray listened to all his doubts and objections and then proceeded to explain their approach. He emphasized again that the focus of their work would be on convincing all sides of the desirability and necessity of a permanent cease-fire, a goal that had thus far defied innumerable efforts by London, Washington and Dublin over the past three decades.

"As long as you believe that the source of the Irish problem is religion and politics, it looks unsolvable, just like the problem in Palestine," Dan explained. Courke seemed to be particularly intrigued when Dan insisted that while the roots of the Irish problem may be religion and politics, the answer to addressing it lay in the economic development, social accomplishments and self-esteem of the Republic of Ireland. Dan explained that the domination and utter humiliation of the Irish throughout the whole country during a few hundred years of British rule had built up a powerful sense of inferiority and resentment. No amount of arbitration could eliminate the painful memory of those experiences. Dan personalized his views by relating stories he had heard as a child graphically illustrating how inferior and bitter the Irish felt after centuries of English overlordship.

"I agree with that assessment," Courke replied. "But how then are you so confident that it can be overcome?"

"Because for the first time in three hundred years, the situation has reversed," Ray explained. He went on to recite recent economic data showing that Ireland had overcome its traditional status as the poor boy of Europe. Its per capita income exceeded that of the UK for the first time on record. It was growing faster than any other country in the EU, had lower unemployment and was attracting more foreign

investment relative to its size. This represented a dramatic reversal in Ireland's social position, which impacted the people both economically and psychologically. "The moment you concede that the source of the issue is status and respect, there is something you can do about it. We believe that the astonishing recent economic progress of the Irish Republic has already changed the equation, but people viewing the problem in terms of religion and politics might have failed to note its significance."

"I assume that other conditions have changed as well," Dan added. "I would venture to guess that after September 11, tolerance and support for terrorist violence has come way down among the Irish in America, which has ten times as many people of Irish ancestry as the Republic of Ireland. In view of the good job opportunities south of the border, it is probably becoming more difficult for the IRA to recruit new members as well." Courke did not comment, but he regarded Dan with a heightened sense of respect. The discussion continued all day. When Courke left at 5:00 pm promising to get back to them shortly, none of them had any idea what he actually meant.

Three days later Courke called from Dublin and requested Ray to send a team over for a meeting with him and his committee. He added that he could provide first class tickets for whoever was coming and offer a five thousand euros per diem for their time. A week later Dan and Ray were in Dublin. Ten days after that they had signed a five hundred fifty thousand euro contract to model the Northern Ireland situation with AIS¹. This gave them the funds they needed to add five more people to accelerate work on AIS¹. They were almost back to the peak strength they had attained before the decision to abandon MAIS twenty months earlier.

Although they had sufficient technical staff to work on PAIS and AIS¹ simultaneously, Dan and Ray found that they had to devote nearly all of their attention to the Ireland problem for the rest of the year. Only Vinay was left relatively free to research and explore other opportunities for growing the company.

When Gregory Thompson first received word of MAI's association with the Ireland Committee in late August 2004, he was shocked. Based on the limited information then available, he was yet to come to a final conclusion regarding their work for NASA. Now they were working in an entirely different field directly related to his own official responsibilities. This only reinforced the suspicion raised by his colleagues. He decided to take the matter more seriously and ordered a detailed report on MAI. In September Thompson was contacted by Levin from MOSSAD. Levin explained that the Israelis had learned about the clandestine committee and wanted further information about MAI's involvement. MOSSAD was interested in Ireland, because efforts at resolution might have relevance to the Palestine problem. Levin flew to Washington and introduced himself to Thompson for the first time. In the course of their discussion, Levin asked, "Do you think they could have any idea that they are actually dealing with representatives of the IRA? O'Hara's grandfather was an Irish freedom fighter. Could IRA have approached MAI for that reason?" Thompson only shrugged in response to both questions. Since this was official government business, they agreed to formally work together. But personally, neither of the two men fully trusted the other. Each tried to assess how much the other knew without disclosing their own suspicions.

On November 2, George Bush Jr. was re-elected as President, a decision which most of the staff at MAI strongly disagreed with. Although AIS¹ was still in a prototype phase, Tony and Jean went through the motions of consulting the program regarding the best candidate for the job. There were cheers throughout the office when AIS voted for John Kerry. Ray was unimpressed when they proudly informed him of the result. "You don't need a million dollar expert system to tell you that. And what good does it do anyway? Anyone who would vote for a man who has destroyed a booming economy, wiped out the strongest fiscal position in decades, insistently denied the threat of climate change in spite of overwhelming scientific evidence, and landed the country in an unwinnable war in Iraq is certainly not going to listen to an intelligent system." The final version of PAIS was delivered to NASA in mid November—without the election results module—incorporating refinements based on feedback from NASA astronauts who tested the software on a variety of simulation protocols.

Just after Christmas 2004, Lauren walked into Vinay's office one afternoon. Vinay looked up from his computer and saw tears in her eyes. When he asked her what the matter was, she burst out crying and then immediately controlled herself and apologized for her immaturity. Vinay had a facility for making people feel comfortable with him and good about themselves. He soon had Lauren laughing at her own silliness and relieving herself of the pent up frustration that had driven her to distraction. "It's Jean," she confessed. "I know I should not let him bother me so, but I am unable to keep from being provoked. He has such a supercilious and offensive manner when he talks to me, as if a twenty-five year old woman without

an engineering degree could not possibly know anything or do anything except cook and bring coffee. I used to do it when he asked, just to be nice. But that only made things worse. So I told him once that I was not hired to bring him coffee. That man is sarcastic about everything and everyone. I know it's not personal but it just cuts through me to the bone and hurts so much I could scream. I even suggested we apply the matrix and PAIS to the problems we are working on together. He only laughed and scoffed at the idea. It makes me doubt the very rationale for PAIS. I don't think even the matrix can avoid conflicts with a man who seems to thrive on creating them. I wonder, why the astronauts have not raised this issue with us?"

Vinay wondered as well. He knew exactly what Lauren was talking about. There were people, and Jean was certainly one, who expressed no interest in being reasonable or rational or harmonious. Vinay had known some traders and financial analysts like that at Rothman & Lazurus who missed no opportunity to demonstrate their superiority and put other people down. He and his friends referred to them as androids. But that was not really a good description, because androids take no delight in offending or dominating over other people. That was a strictly human characteristic. He had also known engineers who could relate to a computer or a machine, but not to other people. But Jean's problem went beyond that. He did not just ignore people, he seemed to consciously provoke them. How did the astronauts deal with situations like that? Perhaps they eliminated people of that type in their selection process. The astronauts he and Ray had interviewed must represent the cream of professionals who were able to subordinate petty questions of ego and focus on work. If that were the case, then the success of PAIS was at least partially due to the special circumstances in which it was operating. As a general program based on the same approach, AIS¹ was sure to encounter people like Jean sooner or later and at that point its recommendations would break down. It might help identify solutions, but it could never ensure harmony. Vinay wondered how the Ireland Committee was going to respond to their initial recommendations. Would human perversity undermine their approach?

In early January 2005 Dan and Ray presented their report to the Ireland committee. Courke and his associates liked what they saw and wanted more. Within another three months they had worked out a comprehensive decision-matrix for establishing a permanent cease-fire. After factoring in additional information generated during a series of meetings in Dublin and Belfast, MAI submitted a final report in early June. Unknown to them at the time, two members of the Committee were senior officials of the IRA. The rest is public knowledge. Six weeks later on July 28, 2005, the IRA announced a permanent end to the campaign of violence that had wracked the country for more than a century.

The strategy AIS¹ endorsed did not even attempt to resolve the political, economic, religious, demographic and social issues that underpinned violence in Northern Ireland. Those were issues that lay beyond the scope of their assignment or the capabilities of AIS¹. The existence of the Committee and MAI's role in Northern Ireland remained under wraps for many months. MAI was prevented by a confidentiality agreement with the Committee from disclosing any information that was not in the public domain. Occasionally MAI was contacted by parties asking them to confirm their involvement with the cease-fire agreement. Their response to all these requests was the same. They kept silent.

Simon was becoming impatient. He had been camped in Berkeley for months and had thus far failed in his mission. His periodic clandestine visits to O'Hara's apartment and MAI's offices had been unsuccessful, but he was now convinced that his boss was correct. O'Hara did have *The Book*. There could be no doubt. His boss confirmed that the notes and related documents he photographed match the description of subject matter covered in *The Book*. He had taken extreme pains to eliminate all traces of his visits in the hope that one day O'Hara would become careless. But he was becoming restless. His boss cautioned him not to hurry. He wanted things done right. He had waited so long, a few more months did not matter. But Simon sensed that even he was becoming impatient and would not endure further long delays. Simon had retained Diego for some time, but the boy had become increasingly uncomfortable and suspicious. Finally Simon paid him another five thousand dollars and sent him on a wild goose chase to Texas, just to remove him from Berkeley and distract his attention from *The Book*. In another month or so, he would simply dismiss Diego altogether as he had already dismissed a dozen others who participated in the search. If his present approach did not bear fruit soon, Simon decided he would be forced to resort to more direct methods to accomplish his mission. If it came to that, Diego would not be useful in any case.

As he sat glancing out the front window of his Kensington apartment, he saw O'Hara emerge from his own residence directly across the street as he did every morning at this time in a Cal sweatshirt and running shoes. Simon had concluded long ago that O'Hara must be carrying *The Book* with him wherever he goes. Otherwise he would have found it by now. That made his morning run the only time when he would leave it behind. But in spite of repeated searches while Dan was out running, he had found no trace of *The*

Book. Simon still did not know how or why his boss was so sure O'Hara did not keep *The Book* at his office, but his boss insisted that was not the case. Simon's cell phone rang. He was expecting the call. "Yes, professor, I am watching. I will make another search today and inform you."

27. Tires

Opinions create reality. It's a fundamental principle of the process of creation.

Archives

On Ray's return from Europe in January 2005, Vinay walked into his office and asked: "What do you know about rayon tire cord?"

"Not much, Vinay," Ray replied. "I vaguely recall that my dad had a pickup truck with rayon tires in the 60s. I remember because a few years later he replaced them with nylon. A few years after that he proudly bought a set of poly/glass replacements which came into vogue during the 70s. By the time I bought my first car, almost all the tires were poly/steel radials."

"That sounds about right. You seem to be an expert on rayon tires." Vinay sat down and explained that on his flight back from India after New Year he had met a guy named Leo Dekker, the CEO of a Belgian rayon tire cord manufacturer, Accor Tire. Vinay and Dekker exchanged stories about their companies. Dekker explained that demand for rayon tire cord had been in steep decline in Europe and North America since the early 1970s and his Belgian plant was one of only four remaining in the world. Profits had been declining for decades and he was approaching the break-even point. Now he was seriously thinking of closing it down before it actually started generating losses. Vinay nodded agreement at what appeared to be a sensible, indeed an inevitable, business decision. "It's only a question of timing, I guess."

"Yes," Dekker replied, "but that timing is crucial and there are so many unknowns. If demand surges again for SUVs, we could make money on rayon for another three to five years. And developing countries like India are still a big question mark. India has one of the fastest growing automobile and truck markets in the world and rayon is still widely used because of the poor quality of the roads. Premature closure could cost us millions in profits. Undue delay might cost even more. That's my dilemma. Do you think your decision-making program could help us make the right choice?"

Vinay said he would discuss Accor's situation with his partners and get back to him with a response shortly. After consulting Ray and Dan, Vinay prepared a proposal for a one hundred ninety thousand euro management study of Accor based on analysis by AIS¹. In financial terms it was a relatively small project, but Vinay argued that if they succeeded it might open up a much larger field of opportunity. His partners agreed. Three days later he sent it to Accor, Dekker called and said he'd like to proceed with the project.

Vinay flew to Brussels to interview key executives of Accor. Lauren once again persuasively presented her qualifications for the assignment, mentioning in this case that her knowledge of French would be particularly helpful in Belgium. Lauren had demonstrated her capabilities on the NASA project, so Vinay readily agreed. Three weeks later they returned with some five hundred pages of information. Vinay went back for a second round of interviews and some additional research, while Lauren processed the information back at the office and worked with Dan devising a matrix for analyzing the data. Even before running an analysis with AIS¹, Dan knew the answer the software would provide. It would conclude that there was no future potential for rayon because that was the input provided by the people at Accor. It would simply tell them what they already knew, or rather what they already believed that they knew.

Dan soon realized that AIS¹ was not really suited for this new assignment, because it failed to discriminate between a real fact and a mere perception of fact. The problems that PAIS had handled at NASA related to decisions involving known physical variables such as work schedules and responsibilities, technical priorities, choice of food, etc. The Ireland project focused on the objective benefits of a permanent cease-fire to both parties. But in the case of Accor, the problem was based primarily on perceptions or opinions regarding what would happen in the future. There were no sure facts available to base the decision on. Viewpoints differed widely within the company and the industry. No one knew or could know precisely what the demand for rayon tires would be a year from now. AIS¹'s matrix model did incorporate opinions as one internal factor, but in this case opinion seemed to be the only relevant determinant factor. The more Dan thought about what opinions actually were, the less sure he was that he knew the answer.

That led him back to *The Book* for guidance. Like a set of Russian dolls, each of which contains a smaller doll inside, his effort to understand the nature of opinions led him to further questions regarding the nature of thought, mental knowing and mind itself. Dan found it difficult to comprehend and work out the implications of all these ideas by himself. He would have liked someone to discuss the ideas with, but at the moment Ray was preoccupied with Ireland, Vinay was in Brussels and Anya was deeply immersed in refining the algorithms for AIS¹. He thought of calling Lauren into his office and telling her about the existence of *The Book*. He was sure he could trust her to keep the information confidential. She had earned his trust and gratitude when she came to him a year ago and offered to invest her entire inheritance in MAI. He could not accept it at the time, because the risks were too great and it did not seem fair to burden her with

their problem. He hesitated to even appreciate her offer too much, for fear that once she understood how much they needed the money, she might insist on giving it anyway. He had seen that streak of insistence in her. Now that MAI was at least on a stable footing, he thought of offering some shares to her and was just waiting for the right occasion. All these thoughts passed through his head, but finally he decided not to call her, not now. There was so much going on. Things were complicated enough as it is.

He started by trying to distinguish the word opinion from idea and thought. A fact is not an opinion. Information is not an opinion. Opinions apply only to things we cannot know for sure, such as perceptions, viewpoints, perceptions. *Opinion is an idea or a thought which the mind accepts as true.* From what Vinay reported, the widely shared opinion at Accor was that rayon tire cord had no future and the company should bail out before it began losing money. The executives stated it as if it was a fact, but Vinay's reports did not provide any certain information to confirm that view. There seemed to be many possible scenarios for the future, some of which could actually expand the market for rayon. Even if demand continued to decline, no one could say for certain whether that decline would take a year or a decade. According to one view, it should have happened thirty years ago when nylon tires were introduced, but it did not. Dan thought that all this would be of limited relevance were it not for the fact that opinion plays such an important role in other spheres of life as well. Their own decision to establish MAI and create MAIS¹ had been based on nothing more substantial than an informed opinion. Even now, their investment in AIS¹ was founded on a similar basis. Accor's situation was not an exception. It was the rule. Dan was convinced that if they could find a way to model decisions in this situation, it would have vast applications elsewhere.

Dan struggled to make clear to himself a thought lurking at the back of his mind. He sensed there was something even more important concealed within the Russian doll called opinion. According to the matrix, decisions could be made to migrate from one quadrant to another by a change of consciousness. Facts could not be changed. External conditions could not be directly changed. The only things that could be directly changed by the decider were the person's opinions, attitudes and values. Opinions were not fixed variables such as the dimensions of a door or speed of a computer. They were altered by a change in perception. Bill Gates had once confessed that he had underestimated the potential of the World Wide Web in the mid 1990s. Then there was the classic example of Thomas Watson, founder of IBM, who had dismissed the potential of computers in the late 1940s by estimating annual market demand at only five units. Those were not facts. They were opinions, opinions that proved to be wrong. An opinion was not merely an educated guess, which could be right or wrong. It was a *psychological force*. Suppose, Dan thought to himself, that making a decision was not so much a question of having the *right* opinion, but of making *right* the opinions that one had. Had everyone accepted the opinion of Watson and Gates, the world would have missed an infinite opportunity because *opinions have the power to determine the outcome of our actions*. If this was correct, Dan thought, then the right answer for Accor was not whether to bail out of rayon but rather to affirm the future potential for rayon and leave no stone unturned in an effort to prove that this opinion was true. Dan realized immediately that this conclusion was completely contrary to conventional wisdom and the logic implicit in the Strong AI view. Both insisted on the validity of an objective reality, even in areas where that reality was strongly dependent on subjective perception. The matrix, on the other hand, insisted on the validity of the subjective reality, even when it appeared to be strongly circumscribed by objective limitations.

The following morning, Dan asked Anya to incorporate a new principle in AIS and to run scenarios for Accor with the modified program. By the time Vinay returned from Brussels, Anya had two preliminary reports ready for discussion. Both related to Accor. One was labeled AIS¹ and the other AIS². She explained that the apparently small modification Dan had asked her to introduce in the software radically altered the nature of the program and therefore she had assigned it a different name to differentiate the two approaches. Vinay and Lauren expressed the most surprise at the results. As Dan had expected, AIS¹ projected a rapid decline in demand and recommended immediate liquidation. But AIS² came to a very different conclusion. It indicated a potential for raising the profits of Accor's rayon business by a factor of two, three or six times. Vinay initially scoffed at the second report and interrogated Anya to find out what she had done to distort the findings. Anya knew how to defend herself against assaults of this type—challenges brought out the best in her—and quickly gained the upper hand. Dan tried to head off a clash by claiming full responsibility for the differences in the two reports. Now that he had everyone's attention, he took the occasion to share with them all the thought processes he had been going through. He surprised all of them by affirming his belief that the findings of AIS² were correct. "The results of AIS¹ are simply a self-fulfilling prophesy, like so many results that go under the name of strategic planning and scenario building. They are based on the premise that reality is independent of our perceptions and our actions, just like Strong AI. The results of AIS² are based on the premise that our perceptions and opinions determine our reality. Instead of taking the opinions of Accor executives for facts, it takes them for what they are, just opinions."

Vinay and Ray were intrigued by what Dan said, but it still was not clear to any of them how AIS² came up with such an optimistic prognosis based solely on negative inputs from Accor. Anya laughed and explained, “Now, that’s the interesting part. You see, the data Vinay and Lauren gathered was full of positive inputs, only they were perceived and presented negatively.” Anya enjoyed the sense of bewilderment her statement evoked from Vinay and Lauren. “The negative assessments by Accor executives were punctuated by doubts and limitations on all sides. They did not know this, they did not know that, they said there was almost nothing they knew for sure, yet they concluded the outcome was almost certain failure. I simply took all their negatives and inverted them, as in mirror, to see the positive opportunities concealed by the negative approach. I was stunned to discover that the positive prospects actually turned out to be greater than the negative ones. That is the basis for AIS²’s prognosis.”

Vinay had the feeling that his head was being turned inside out. In fact, they all did. Even Dan, who understood best of all the logic by which they had arrived at this apparently improbable conclusion, found it difficult to accept or reconcile these findings with the known facts, until he reminded himself several times that they were not known facts at all, only opinions colored by conventional wisdom. Gradually the power of the approach dawned on Vinay. “Do you realize how immense are the implications, if this turns out to be correct?” he said. “Why it could dwarf the power of MAIS. If it is really true that the nature of mental processes tends to so fully blind us to opportunities, then all the opportunities humanity presently envisions must be only a small part of the actual potential. AIS² could be revolutionary!” Then thinking it must be too good to be true, he reminded himself that this was all an unproven supposition. “It’s just another opinion,” he said and they all laughed

Ray was more certain. “Regardless of what happens at Accor, I believe this approach is based on sound logic. We don’t need to consider Accor to know human opinions are based on past experience and what other people think, which is inherently irrational. Just because something has not happened in the past, does not mean it will not happen or has a low probability of happening. If it did, every new invention and development must be discarded as a chance occurrence. Just because most people believe a thing to be true, does not make it true, though it certainly has a power to make it appear true. History is filled with self-fulfilling stupidities of that sort. Americans thought things were going badly in the 1990s and that they needed a change of government. Sure enough things have gone from good to bad. That is the power of opinion. What Dan and Anya have done is to build true rationality into AIS². Not the rationality of Strong AI which insists that only objective facts are true, but the rationality of the matrix which recognizes that objective fact and subjective perception are both powerful determinants of reality.”

An air of excitement tinged by uncertainty and skepticism circulated around the room. What Ray said sounded rational, but would experience confirm it? They were all eager to complete the report for Accor and find out. But no one envied Vinay’s task of having to present their findings to Dekker and his team of executives. It would take more than rationality to overcome their views on this issue. Dan tried to mitigate Vinay’s concern. “Why do you think Dekker gave you this assignment in the first place? He did it because something in him told him that the opinions of all his experts might be wrong. He was looking for an independent and impartial viewpoint and that’s what we are offering him.”

Ten weeks after their initial meeting, Vinay handed Dekker a report and recommendations, the first project run on the latest version of the software, AIS². Dekker promised to read it that night and meet him in the morning. “You, or rather AIS², concludes that Accor can raise the profitability of its rayon operations three to six fold within twenty-four months. Do you expect me to believe that? I see the logic behind your findings. I am convinced that we should keep the plant open for a few more years, no argument. But raising profitability that much is too much to accept.”

Vinay was relieved that Dekker’s first response had not been laughter. He could not blame Dekker for being skeptical when he had himself struggled to accept the possibility. That would not be rational. It was his task to patiently explain their approach and help Dekker see the underlying truth. “Leo, our job was to give you a recommendation and support it. I believe you agree we have done that.” Leo nodded his head in affirmation. “The report does identify at least a dozen ways in which performance can be enhanced. But it was not our assignment to provide detailed strategies regarding how to raise the profitability of the plant if you decide to keep it open.” Leo again affirmed with a nod of his head. “If you would like us to do it, we are prepared not only to map out the strategy, but even to link our fees to the increase in profits we claim can be earned. Of course, we would expect a substantial portion of the increase, if we prove to be right.” Dekker smiled and mumbled something about considering the new proposal. Clearly he was satisfied with MAI’s findings and reluctant to give away anything more than he had to.

The following day, Vinay was asked to present MAI’s report to the Board of Accor. He was bombarded by questions and inundated by skepticism, but strangely the very intensity of the opposition

helped Vinay make his point. The more vehemently board members protested his conclusions, the easier it was for him to demonstrate that their own views were based on partial, inconclusive and often unsubstantiated suppositions. The turning point came in response from one of the French speaking directors, a small, beady-eyed man with a hawk nose named Pierre Lestrade. During Vinay's presentation, Lestrade made numerous critical comments to his colleagues in French which evoked mild laughter. Lauren, who had accompanied him to provide assistance and moral support, translated a few of his remarks and whispered them to Vinay, so he had some idea what he was up against. Finally Lestrade made bold to express himself in English. "Excuse me for being blunt, Mr. Menon, but I fail to see why Accor agreed to pay one hundred ninety thousand euros for a report which any optimistic MBA could have written after a week's research. Your conclusions imply that the managers of Accor's rayon subsidiary must be stupid or incompetent."

Lauren was filled with admiration for the clarity and forcefulness of Vinay's presentation and response to the challenges posed by the board. She had never seen Vinay angry before. In fact, he did not actually become angry. Lestrade's rude comment simply made him drop the extreme politeness which she had always admired in him. Vinay looked straight at Lestrade and replied, "No need to apologize for being blunt, Mr. Lestrade. It is apparent from your remark that I have not expressed myself clearly enough up until now. Let me summarize our findings for you this way. We find that the gradual decline in the financial performance of Accor had been the direct result of a series of conscious decisions by the senior management of the company based on the erroneous supposition that the company's rayon business will fail. The problem lies in the supposition, not in the company or rayon. AIS² finds that there is scope for expanding the market even at a time when competitors have withdrawn or are cutting back. I recall reading how Sears Roebuck expanded their department store business right through the Great Depression at a time when overall department stores revenues were down by 25 percent. IBM did the same thing in the office equipment industry." Vinay paused for a moment and saw that rather than evoking resentment from the other board members, he was earning their respect and understanding.

Lestrade was unwilling to be dismissed so easily, especially by a good-looking man of Indian origin half his age. "And what exactly are these erroneous suppositions you refer to, Mr. Menon?"

"Obstacles that aren't there, opinions that conceal facts," Vinay replied. "In the mid 1960s my own country, India, suffered from two successive years of severe drought. The UN estimated as many as ten million people might die. They predicted that India would be dependent on food aid for years to come. One visionary politician became the Food Minister and decided to take decisive action to totally eliminate dependence on food aid. The idea met with sarcasm and derisive laughter in parliament. Within five years, India's foodgrain production rose fifty percent and within ten years it doubled. India became a net food exporter. None of the scientists and politicians saw that possibility beforehand. Why? Because they were blinded by erroneous suppositions that prevented them from seeing the real facts."

Lestrade interrupted. "That is a lovely story, but we are not in India now and Accor does not produce food," he said with a caustic laughter.

"That's true, Mr Lestrade. But I believe this is a universal human trait. How many people do you know who had the foresight to say in early 1989 that within a few months the Berlin Wall would collapse, the Cold War would end, and soon afterwards Germany would be reunified and the USSR would cease to exist? How is it that no one saw things that were going to happen so very soon? Because we were all blinded by opinions that prevented us from looking at the facts objectively. That is a common human condition, not one unique to political leaders or the Board of Accor." Vinay paused, then added, "Have you seen *The Matrix* Mr. Lestrade? That movie depicts this condition very graphically."

A repulsive expression came over Lestrade's face as he replied that cultured Frenchmen do not watch Hollywood movies. Instead of being deterred by that response, Vinay was encouraged. "You will find it enlightening. It depicts how the human mind is capable of accepting completely fictitious suppositions about the nature of reality which totally blinds it to the actual facts. People end up living life within the narrow confines of a prison because their minds are incapable of looking beyond their mental conditioning. It is the story about one man who finally succeeds in breaking out of the conditioning and seeing the world for what it is. If you think you are killed in the matrix, you die. It is the same thing for companies and industries in the real world. If you think your company or your market is dying, you are probably right." Lauren observed a blank look on the faces of most of the board members, but she was quite sure Dekker was struggling to suppress a knowing smile. Perhaps he was the only one in the room who watches American films. "Anyone who has ever freed himself from the limitations of even a single opinion knows that it is a liberating and exhilarating experience. Let me conclude by saying that we do not fault the managers of the rayon division at all. I have the highest regard for Mr. Dekker and his team. We believe the responsibility lies at a higher level. Thank you."

The aging chairman, who had remained quiet during Lestrade's attack and Vinay's reply, now resumed control of the meeting. It appeared that he was himself somewhat intimidated by his French colleagues aggressiveness and used to giving him free rein to express himself. When Lestrade tried to respond once more to Vinay, the chairman intervened and indicated that the discussion was over. He turned to Vinay and thanked him for his informative and insightful report and apologized on behalf of his colleagues for any excessive zeal exhibited in their effort to comprehend his message. "I believe you have made yourself very clear and that the company will benefit from your advice." Without putting anything to a vote, the chairman turned to Dekker and said that the board would look forward to seeing profit growth from the rayon division in the coming year. Then he generously commended Dekker for seeking the views of an external consultant.

Vinay and Lauren flew back to California that same evening and met with the partners at MAI the very next morning. Lauren was bubbling with enthusiasm and insisted on narrating the events of the previous day without interruption from Vinay. When he heard her appreciating him so generously, he was happy to remain a modest recipient of praise. "The best part," Lauren concluded, "was at the very end of the board meeting when Vinay advised Lestrade to watch *The Matrix*. I don't think there was a single director less than seventy years old. You should have seen their faces. No one except Dekker had any idea what he was talking about."

"What was he talking about?" Anya asked. "How can you watch the decision-making matrix?"

Lauren laughed and explained that Vinay was not talking about MAI's matrix. He was referring to the Hollywood movie called *The Matrix* by the Wachowski Brothers. She then related how Lestrade so rudely dismissed it in typical French style as a vulgar American movie, even without seeing it. Anya shrugged and said, "That might be one subject on which I agree with the French. I hate all the violence in your American films. What sort of film is this *Matrix*?"

Lauren saw that her joke was going awry and was beginning to regret she had raised it. Just then Vinay jumped in and addressed Anya with a straight face, "*The Matrix* is the story of an incredible artificial intelligence program similar to AIS and the heroics of a brave and brilliant hacker named Trinity with an extraordinary mind, a true heart and long, graceful legs like yours who saves her lover from the evil advocates of Strong AI. In essence, it's a classic love story."

Lauren, Dan and Ray were full of admiration for Vinay's agile thinking and adept response, but they had to suppress their laughter when Anya replied, "That sounds like a good movie. I would like to see it."

It would be at least a year before the veracity of AIS²'s prognosis could be confirmed, but Vinay kept in close contact with Dekker in the hope of sensing the trend much earlier. Two week before IRA announced the permanent ceasefire in July 2005, Vinay received an email from Dekker reporting that the first quarter earnings of Accor's rayon division were up by 67 percent. In mid October Dekker again sent him a message saying the earnings for the first six months were up 91 percent. In May of 2006 it became official. Vinay received a copy of Accor's annual report for 2005-6 by FedEx. It reported that the profitability of their rayon operations had already risen by 290 percent over the previous year. When Vinay read the Accor report, he reflected back on the skepticism he had exhibited when Anya had first presented AIS²'s report and Dan explained the reasoning behind it. "Opinions!" he said to himself. "We are all prisoners of our opinions."

28. Mind Games

The world is not an illusion, but the limits humanity confronts in the world are illusions imposed by his mind on the backdrop of infinite potential.

The Book

The following Monday morning Anya wandered into Dan's office wearing a cream-colored knitted turtleneck with a high collar and a beige woolen skirt that accentuated her perfect figure. She had a childlike pouting expression on her face. She carried two cups of coffee in her hands. She handed one of them to Dan, asking him to be careful not to spill it because it was very full. "Vinay was making fun of me and making me look foolish," she said. Dan glanced up from his computer with a questioning look. "That film is not a love story. It's a horror movie! Personally, I hate women in black leather. It is so unfeminine." There was nothing unfeminine about Anya's appearance, Dan thought. "And that ghastly scene with all those human fuel cells, it almost gave me nightmares. But I did like the ending," she added with a mischievous smile. "Human consciousness conquers the machine!" Then she laughed. "How do they come up with such bizarre stories? It is impossible to tell what is true and what is imagination in the story. Is the Oracle real or just a program? Is Nero really the One and only One or is the One anyone who believes he is the One? Do you really think all that means anything?"

Dan nodded. "Actually I find *The Matrix* has helped me understand several passages in *The Book* that had previously defied my comprehension. I think the Wachowskis have brilliantly depicted certain truths about the mind. The movie brings out the profound truth that whatever the mind believes to be true becomes a reality at least as far as its existence is concerned. That's why Vinay's reference to *The Matrix* at the Accor board meeting was so appropriate and effective. The company had accepted a particular view of their industry as real and that made it real for them. Vinay tried to change their perception. It generated resistance and conflict from people like Lestrade who are so immersed in their opinion that they cannot see it is distinct from objective truth. AIS²'s report presented a mirror image of their opinion, revealing all the facts concealed by their viewpoint and identifying very real potential for higher profits.

"Most of the human beings in the story believe the Matrix is real. The policemen even fight to defend that illusory view just as Lestrade did. That shows the mental notions of positive and negative, good and bad are only relative. Law abiding citizens in the Matrix reinforce their own subjection to the machine. Isn't that exactly what people do in real life? We create technologies and become dependent or even subordinate to them, just as we create money and then become a slave to our own creation. I think all these movies about the machines taking over are a projection of humanity's subconscious awareness. It is not the machines that conquer humanity. It is humanity that surrenders its freedom willingly and even consciously to its own creations and then elevates those creations to a divine status. That's the Strong AI view of reality."

Anya loved to look at abstract, philosophical issues in practical terms and Dan had a knack for making the abstract seem so alive. "But why do we do it?" she asked. "If the trait is so universal, there must be an underlying reason."

"That is what I am just beginning to understand with the help of *The Book*. It contains a wonderful chapter on the nature of mind and mental consciousness. I know it sounds far-fetched, but I even wondered for a while whether the Wachowskis had actually read it. *The Book* explains that the basic nature of mind is to divide reality into parts and then treat each part as a separate whole and further subdivide it into smaller parts which it again regards as wholes in themselves. Having done that, mind loses the perspective of the whole and the precise relationship and interdependence between the parts, which is the real reality. So to compensate, it combines the separate parts and tries to reassemble a constructed view of reality out of the parts it has created. In other words, it divides and then aggregates what it has divided. Academics do it with knowledge by dividing reality into dozens of separate disciplines and then further subdividing those into specializations. It often reveals wonderful insights into the intricacies of the part which are missed when we view it as part of the whole. At the same time, it falsifies knowledge by abstracting the part from its context. Nuclear physicists have done it with a vengeance in their quest for the ultimate unit of matter, only to discover that matter cannot be reduced to individual particles that exist separately and independently from one another. That is only a view generated by the dividing mind. They now know matter behaves as a unified, undivided field spread throughout the universe with differing concentrations of intensity at each point just like an electromagnetic field.

"Each time the mind divides reality and partitions it, it creates a new and distorted view of reality, but that view has power because we accept it as real just as Neo accepted the reality of the Matrix. In a similar manner, economics regards money and markets as if they existed independently of the human beings who have created them by their aspirations and attitudes, like Jake and the other hedge fund traders who regard financial markets as an independent reality. But when a wave of intangible, evanescent fear wipes out

a trillion dollars of share value in a week, the traders are reminded of their mortality and of the human consciousness that ultimately determines all economic values.

“We all live in a matrix created by mental division. And the ultimate denominator is that which divides each of us from the world around us and makes us regard ourselves as an independent ego existing separately from everyone else and struggling all our lives to overcome that sense of separation by romantic union. We divide the whole world into one big equation consisting of subject and object, with ourselves on one side of the equation and everything else on the other. Our notion of objectivity is to view the rest of the world without distorting it with our own needs and preferences, but the real distortion lies deeper—it lies in the original sense of separation that makes us relate to the world and other people as something other than ourselves. Matrix brings out that truth beautifully. The world is what we think or believe it to be, what we want it to be, and ultimately what we decide it will be.”

Anya mind went back to the movie. “Vinay says the desolate world portrayed in the movie is what you get when you fall prey to the illusions of mind. The appearance may be pleasing, but the reality is stifling confinement. A really beautiful world is created, not by falling into mind’s daydreams of wish fulfillment like Cipher, who told Agent Smith that ignorance is bliss. All the problems of the world—ignorance, wrong-doing, evil, suffering, even death—are ultimately products of mind and the mental ego that divides the individual from the rest of the reality. But I still don’t get it. If the matrix was unreal, why do Neo, Trinity and Morpheus have to fight the machines even when they have escaped from the illusion? The real world seemed just as bad as the matrix program. And why wasn’t knowing the truth enough to give them mastery over the machines?”

Dan laughed as he saw how perceptively Anya had entered into the spirit of the Matrix. “That is what finally convinced me that the Wachowskis had not read *The Book*. The movie contains that inherent ambiguity. They do not seem to be able to make up their mind whether the machines are a real threat or not. Ultimately in the movie the Strong AI view and the Weak AI view remain unreconciled and in conflict.”

“But if division is illusory,” Anya exclaimed, “there must be a higher perspective that reconciles and harmonizes both views. There must be a third view of reality that does not wipe away all distinctions but still reveals the true relationship between all the parts.”

Dan was amazed at the speed and depth of her insight. It had taken him months to come to that conclusion and he was still unable to resolve the riddle. If neither objectivity nor subjectivity was the whole truth, what was? The materialists affirmed the ultimate reality of matter, while mystics proclaimed the ultimate reality of the One, Shankara’s Brahman, or the Zero, Buddha’s void. *The Book* seemed to hint at a third possibility, but Dan had still been unable to grasp it.

Meanwhile Anya’s mind shot ahead. “Then what about mathematics?” she asked. “Mathematics is a science of number and quantity, which arises from division. I warn you that if this discussion is a clever attempt to convince me that mathematics is illusory as well, I am quite prepared to fight for my discipline!” Then she raised her fists and assumed a pugnacious pose that reduced them both to uncontrollable laughter.

Dan raised his hands in a non-combative gesture of innocence. “Far be it from me to attack the highest and purest of all the mental sciences,” he replied. “All language is symbolic and mathematics is the ultimate language of symbolism. The question is symbolism of what? Ultimately what is the reality that mathematics represents so precisely? According to *The Book*, the answer lies in understanding the true significance of two concepts—the zero and infinity. What do we really mean when we say that something is zero or nothing? What do we really mean when we say it is infinite? Physicists now believe that material energy emerges spontaneously from a vacuum or zero point energy field. A vacuum is something with nothing in it. What do they mean when they say that something emerges from nothing? If your mathematics can answer these questions for me, I am prepared to listen all day long and elevate your sublime science to even greater divine heights.”

As Dan finished the last sentence, the mug of coffee he had been sipping since Anya brought it in suddenly slipped from his hand and spilt on the keyboard of his notebook computer. They both rushed to mop up the mess and remove the excess liquid from the keyboard before it was too late. Dan inverted the notebook to allow the coffee to drain onto the floor. A few minutes later he placed it back on the desk right side up. The moment his hand touched the keyboard, it began to type a series of numbers and letters unrelated to the keys which he pressed. An expression of annoyance and self-disgust replaced the radiant countenance that had been there a few minutes earlier. He sighed deeply and then looked up at Anya, “Do you think this sequence of characters has a hidden meaning?” Then he shook his head in disbelief at his own clumsiness and he laughed. But behind the laughter a question lurked. Why did that happen now?

Anya got up to leave the room saying, “Well, I guess I have done enough damage here for one morning.” But all the time she was wondering to herself who had actually suffered the greatest damage from their exchange. At the door, she turned back again and remarked, “I still don’t understand this thing about being the One. If Neo was the One, why did the Oracle tell him he wasn’t? And if he wasn’t, then how did he become what he was not?” She looked at him in a curious appeal, but Dan had already decided he had spoken too much. “I guess they are trying to say that no one can tell you the Truth about reality or who you actually are. You have to discover it for yourself. You have to see yourself and the real reality for yourself. Then you won’t have to dodge bullets and coffee cups anymore.” Then she added with her loveliest smile, “Until then, please be careful.”

She moved toward the door again, and then stopped and turned once more. “In the final analysis, it was not mind that set Neo free. It was Trinity’s love. So don’t place all your faith in books.” An indescribable expression appeared for a moment on Anya’s face and then she was gone.

The next morning Anya called in sick and she remained in bed the remainder of the week. When Dan called to see how she was, she insisted that it was nothing serious, but her body ached and she had hardly enough energy to sit up in bed. She suddenly wondered whether her illness was real or simply a product of mental conditioning. “I think my mind has broken,” she said, but she was too tired to even smile at her own joke.

On the second evening of Anya’s illness, Vinay dropped in at Anya’s apartment to see how she was feeling. Katia answered the door and made a wry face when Vinay asked about her mom. Then he handed Katia a bag of pastries. She peeked inside and smiled broadly. “I’m sure she’ll be feeling better now. These are mom’s favorites.” Vinay couldn’t help thinking Anya’s ten year old daughter would one day be even more lovely than her mother.

Vinay knocked at the bedroom door and found Anya reading in bed. Her long jet black hair fell loosely over light blue silk pajamas and a navy woolen robe, setting off emerald colored eyes that sparkled when she saw him. Vinay thought that very few people looked this good even when they were feeling perfectly well. He considered it fortunate that she seemed to be so unaware of the physical impression she made on others. Just then Katia ran by him and jumped on the bed shouting for Anya to look into the bag of pastries. Once the bounty had been distributed somewhat unevenly between the three of them, Katia ran off.

“I understand I owe you an apology for upsetting you with that movie last weekend,” Vinay said as he sat on the edge of the bed, “though I am not sure who got the worst of it, you or Dan’s computer.”

Anya shook her head in playful disagreement. “He told you about our little chat, I see. Well, forget about all that for now and listen to this. I have been doing research on the Matrix.” Anya waved a newspaper article in front of his eyes. “It’s a clipping from an issue of the Wall Street Journal in 1998 that I found on the web about the placebo effect. A study found that placebos are about sixty percent as effective as most active medications like aspirin and codeine for controlling pain. Another study showed that placebos work for baldness as well. More than eighty percent of the men who took a drug for baldness either maintained or showed an increase in the amount of hair on their heads, but so did fifty percent of the men taking a placebo. Another study was carried out in Japan on thirteen people who were extremely allergic to poison ivy. Each of them was rubbed on one arm with a harmless leaf which they were told was poison ivy and touched on the other arm with real poison ivy which they were told was a harmless leaf. All thirteen broke out in rashes on the arm touched by the harmless leaf. Only two reacted to the real poison leaves. Isn’t that incredible?”

Vinay replied, “That reminds me of something my mother told me when I was a child. When we were ill and she took us to the doctor, she used to tell us not to listen to what the doctor said, just to take the medicine. She said that if the doctor told us we had a serious illness and we believed him, the illness would actually become serious. I always thought it was some ancient Indian superstition that she had learned from her grandparents.”

“Listen, Vinay,” Anya continued. “I haven’t come to the best part yet. It’s the story of Mr. Wright. It’s right out of the Matrix, only it’s true. In 1957 a man named Wright was hospitalized down in Long Beach with terminal cancer and given only days to live. He had tumors the size of oranges in his abdomen. It seems that Wright heard about a horse serum called Krebiozen that scientists had found effective against cancer. He begged his physician, Dr. Philip West, to administer the horse serum to him as a desperate measure. West reluctantly agreed and gave him an injection on a Friday afternoon. The following Monday, the doctor found his patient out of his ‘death bed’, joking with the nurses. West was amazed. He wrote later that the tumors had melted like snow balls on a hot stove. Two months afterwards, Wright read medical

reports that the horse serum was a quack remedy. He suffered an immediate relapse and the tumors reappeared. West realized something extraordinary was happening. So he told his patient not to believe what he read in the papers. West told him he had located a new super-refined double strength version of the drug that was sure to work. Then he gave Wright an injection of water. To his astonishment, the tumors melted away again. For two more months, Wright was the picture of health—until he read a definitive report stating that Krebiozen was worthless as a treatment for cancer. He died two days later.”

“If illness is just a mind game,” Vinay asked teasingly, “then what are you doing in bed?”

“You remember in Matrix how Cipher told Agent Smith that the steak he was eating still tasted delicious even though he knew it did not exist? Well, that’s how I feel about being home in bed just now—it’s delicious!”

29. Gravity

Vinay was working late in his office when Lauren knocked gently at the door and asked if she could speak with him. Vinay, who had an artist's or poet's love of all things beautiful, could not help thinking of Anya every time he looked at Lauren, comparing and contrasting the impressions they made on him and marveling at the mystery of femininity. Both were extremely pleasing to look at, but very different in appearance. Anya was tall, slender and elegant. Lauren was three inches shorter with a graceful softness of curves that compensated for what she lacked in imposing height. Anya was strikingly majestic, like sculptured alabaster, with black hair on marble white skin flushed with the warmth and vibrancy of life and bright emerald eyes that danced in merriment. Lauren was more like a flower, with a soft rosy complexion, dimpled cheeks and large brown eyes that saw deep inside you. Anya had the strength of inherited character, a formed mind and emerging individuality. Lauren had depths of faith and rich emotion. If looks have scent, he thought, Anya's is an exotic bouquet of jasmine, lavender and passion flower; Lauren's the sweetness of fresh honeysuckle. If looks have a heart, Lauren's is goodness, Anya's delight.

Both women made Vinay uncomfortably aware of his own weakness and limitations. He felt a sharp pang in his heart composed partly of pain and partly of joy. Whether it arose from conscience, love or fear he could not say. His conscious aspiration had always been to create and accomplish something that would last. He had been raised with the ideal of giving something to the world and he had embraced it. But when he encountered beauty of feeling or of form, he felt all his aspirations melting away before a more powerful compulsion. It was not pleasure or satisfaction that lured him. He was too inwardly secure and conscious to succumb to that cheap substitute for joy which overwhelmed so many Indian immigrants to the sexually-emancipated West. He couldn't help wondering about the impact of unlimited social freedom in the absence of psychological restraint. The whole world envied what Americans possessed, but how far was humanity really qualified for it? It required real formed individuality and values to use freedom constructively. Otherwise, it had a tendency to reduce everything and everyone to crass materialism and unmitigated selfishness. Vinay was not a prude or a puritan or a saint, but he knew the law of human gravitation that inevitably reduced the highest human sentiment to the lowest physical denominator, like a stone rolling down hill, and he wanted something more than that. He was an emotional, more than a social, climber. When faced with the prospect of real human relationship, he was disarmed, but he knew better than to fully trust himself to fare better where so many failed the test. Fortunately for him, both women seemed unpretentious and unconscious of their impact on him, focused on the work at hand, at least consciously. Anya loved and demanded attention, but it was mainly in the form of respect for her capabilities and recognition for her contribution, not for the way she looked or felt. Lauren aspired intensely to give and be part of something greater than herself, not to possess or command.

It was not as if Vinay was blinded by appearances. A wise grandmother had taught him more about human nature and propensities than most psychologists learn in a life-time. He knew very well that Anya was self-centered, domineering, and much too wrapped up in her own career to be all the mother that Katia needed. She could be stubborn, petulant, demanding and unreasonable, too quick to suspect and too slow to forgive. Worst of all, she could be harshly and aggressively unfeminine at times. He knew less of Lauren, but he knew enough to know that every human endowment has its obverse or inverse expression. It was a law of nature. Lauren's goodness was at least partially born of naivety. Would it survive intact the inevitable disappointments and betrayals of love and life that make people defensive, suspicious and selfish? Or would it cool and eventually turn into meek bitterness or aggressive cynicism? Vinay knew the difference between wanting to be loved and being capable of loving. His ideal of romanticism did not seek a perfect other. It sought to discover the perfection in another, even where others found only blemishes and defects. Scars and blemishes did not frighten him, but meanness, falsehood and perversity scared him to death.

Awakening from his muse, Vinay suddenly realized that he had hardly heard a word that Lauren had said since she entered the room. He strained to reclaim words that had already been spoken and fallen back into the silence. "Greg, work, Lempe, business, meeting..." He gestured to Lauren to sit down, apologized for being distracted by other matters, and asked her to start again at the beginning. Lauren explained that her younger brother, Greg, had completed his engineering degree at Cal and recently been hired by a machine tool manufacturing company in Hayward. One day she had driven down to Lempe to take Greg out to dinner for his birthday and her brother had introduced her to Michael Lempe, the owner. In the course of their discussion, Lauren had mentioned her work at MAI and recent assignment for Accor. Lempe had expressed interest in receiving some help for his company and asked whether she thought MAI could provide what he needed. Lauren had spoken enthusiastically—probably more than objective facts justified—about AIS and the company's capabilities. She said she had reminded herself of what Vinay had

said to the board of Accor—that opinions can conceal facts and potentials—and told herself this opening would not have come to them, if they were not capable of handling it successfully. She had offered to set up a formal meeting with Vinay and Lempe said he would think about it and get back to her if he were interested.

Vinay thanked Lauren for her initiative and asked her to follow up with Lempe to schedule a meeting. It is fortunate, Vinay thought to himself, that she can keep her mind on business, while his own was so tempted to flights of fancy.

30. Vanishing

It is an illusion to think that Knowledge can be preserved. Words can be preserved, not knowledge. Books can be preserved, not The Book.

Messages XXI

NASA's positive reception to PAIS had exceeded their hopes. The endorsement of the leader of the Training and Crew Operations Group at the Marshall Center in Huntsville, Alabama ensured the program would be given a fair trial and evaluation, especially with so many astronauts already supporting it. In January 2005, just two months after delivery of the product, Ray had been contacted by NASA's Intelligent Systems Division in Sunnyvale to present an overview of PAIS to their senior development team. In spite of some resistance from Strong AI advocates within NASA who were skeptical of MAI's approach, there was sufficient appreciation of their work to warrant a call from Human Resources at NASA's Washington Headquarters to explore the feasibility of developing a similar program for ground station personnel and intra-department coordination. By mid-February, Ray presented the detailed strategy for Ireland to the Courke Committee based on AIS¹ and by end-March Vinay had completed the Accor project based on AIS². Two weeks later, MAI signed a second contract with NASA for \$1.2 million to develop a prototype and working system. AIS² represented a significant enhancement of the decision-making matrix, but even before it was fully operational, Dan began to see limitations in the underlying assumptions and applications. So he began working with Anya on another version.

As time passed, Dan's attention gradually shifted more and more from *The Book* to AIS. It was now nearly fifteen months since *The Book* had fallen off the shelf. During the first six months, Dan had spent virtually all his spare time reading, analyzing, discussing and applying whatever he could learn from it. It became an all-consuming preoccupation. But as the practical applications of *The Book* became more evident and success for product ideas began to evolve, his attention gradually shifted from trying to learn to trying to apply what he had learned in his own work and to share his insights with his partners. By the time Vinay submitted the final report to Accor, it had been several months since Dan had even found time to open the cover of *The Book*. He continued to value it and to carry it with him wherever he went, partly out of habit and partly because he had never been able to fully dismiss the unsubstantiated suspicion that someone might be trying to steal it. The very idea was too absurd to contemplate, no less to share with his partners; but at least on one and perhaps on two occasions he had the unshakeable presentiment that someone had searched his apartment in his absence. Since there was nothing else of significant value among his sparse possessions, his mind naturally thought of *The Book*, but he immediately dismissed the idea as ridiculous and pushed it from his mind. Nevertheless, since then he had carried *The Book* with him wherever he went. The only exceptions, were when he went for a jog each morning. He could not very well take it with him, so he searched for the most unlikely place to leave it and eventually decided on the coat pocket of his trench coat hanging in the hall closet. Often he felt ridiculous and embarrassed as he concealed *The Book* before going out for a run, but he persisted in the practice in spite of the shame he associated with it. It is not that he had any doubt about the value of *The Book*. He considered it priceless. The fact that all his efforts to discover its title or the identity of the author or anything else about it had failed only reinforced his feeling that he could not afford to take any risks for the sake of appearing rational to himself or to others.

As far as Dan could tell, until recently only he and his three partners were even aware of the existence of *The Book* or where it was. That changed one Saturday morning when he sat down on the couch in his apartment to read a passage from *The Book* for the first time in weeks. There was a knock at the door and Dan was surprised to find Lauren standing there when he opened it. She said she had been out for a longer than usual weekend run and had found herself in Kensington without ever really thinking about where she was headed. She told Dan she had wanted to meet him during the week to thank him for the generous bonus she received for her work on Accor, but had been unable to catch his attention even for a moment, so she took this occasion to drop in and express her gratitude. Lauren looked remarkably fresh and presentable for someone who had just run three or four miles. The cool morning air made her cheeks even rosier than usual. Dan asked her in and offered her a cup of coffee.

As he was pouring it, Lauren glanced over and observed *The Book* lying on a glass coffee table. Partly to quell a mild sense of nervousness for having intruded on Dan's privacy and partly out of curiosity, she strolled over and picked it up. She examined the brown leather cover, then opened it and browsed through the pages. She was immediately struck by the bluish white paper. "Handmade paper," she said. Dan looked over the kitchen counter in surprise and asked her what she meant. "It's hand made cotton paper. I'm sure of it. I love paper and paint on paper like this when I do water colors." She held up the book to the light and looked through one of the pages searching for a watermark. "It's beautifully formed. You can see tiny

silk threads blended with the cotton for greater strength. See how it has retained its pure whiteness. It will still look the same after a few hundred years, long after any mill-made paper would have fallen to pieces. There is a tiny watermark in the corner. It looks like the letters 's' and 'a', but I can't be sure without a magnifying glass. Perhaps it's only a design." Dan listened attentively. Again she examined the cover looking for a title and then searched for a title page, but without success. Intrigued, she turned to the first chapter and began reading. The prose was elegant and inspiring. She drank it in like a warm beverage and felt exhilarated. As Dan walked over and handed her a cup of coffee, she remarked, "It's so lovely. I have never read anything like it before. What is it?"

Dan sat down and explained that he did not know. He related to her how *The Book* had first come into his hands and how profoundly it had influenced the course of his life and work over the past fifteen months. To Lauren, his story sounded like a fairy tale, though she never doubted for a moment that what he said was true. Reading a single paragraph was sufficient to convince her how special it was. Lauren was not particularly inclined to philosophy or even to logic. People and human relationships were the essence of existence for her, but she shared with Vinay the sensibilities of an artist and a poet and could recognize beauty when she saw it in any form. To her, the book was beautiful. She asked Dan to share with her a few of the insights he had gathered from his reading. To oblige, he related to her something of what he had discerned about freedom, harmony, life, mind and accomplishment, but he avoided the references to love for some reason he could not explain to himself.

Lauren listened without a word or question to everything he said, taking in the impressions and assimilating them intuitively, not as objects to chew and digest or ideas to think about, but as essence of life experience to absorb and make her own, just as she tried to absorb the lessons of her own personal life experience without formulating them as thoughts or explanations to her own mind. By the time he finished, she felt a deep quietude inside and an inexplicable sense of joy. She picked up *The Book* again and began browsing through the chapter titles. Suddenly she noticed that the printing on some of the pages in the middle of the book was significantly lighter than at the beginning. She leafed further through subsequent pages and found the printing lighter still. At first she thought it might have been due to some variation in the quality of the paper or perhaps an excess of sizing added to fix the ink to the fiber. She knew that lack of uniform sizing was a common deficiency of handmade papers. But the steady lightening of print intensity from one chapter to the next could hardly be explained in that manner. It must have been done intentionally, she thought, though she could not imagine why. So she looked up to Dan and asked him for an explanation.

Dan had been sitting lost in thought and just watching her turn the pages without knowing what she was looking for. When she referred to the faded color of the printing, he became alert and alarmed at the same time. He took *The Book* from her hands and flipped through the pages as she had done. There could be no mistake about it. The color of the ink was fading. The reduced contrast between text and page was making it increasingly difficult to read. "You are right?"

"You mean you never noticed this before, Dan? How is that possible. In fifteen months you never turned further than page 100?"

Dan shook his head, as a deeply puzzled expression crossed his face. "No, I meant it was never like this before. I have read at least excerpts from all 56 chapters and never noticed any difference in print intensity until today. This is not how *The Book* appeared a month or two ago. It is changing."

"How is that possible?" Lauren asked. "Books don't change, printing inks don't change, not in a month or two anyway. Why this book has got to be at least fifty years old, perhaps one hundred. You can see the paper is perfectly intact. Perhaps if you have exposed the pages to intense sunlight or intense heat for a prolonged period, such a change could have occurred. Not otherwise."

Dan shook his head again. "This book has not seen daylight since the day I found it and there hasn't been much sunlight in Berkeley the past few months anyway. As for temperature, it has been indoors the entire time. I don't see how either is possible. But the fact is that the print on many of the pages is disappearing." Deep lines of worry appeared on Dan's forehead as he contemplated the magnitude of the calamity. He gradually dawned on him that the entire book might be lost to him in a matter of weeks or months and there was absolutely nothing he could do about it.

Lauren sat motionless watching the mounting distress that came over him. She knew too little to fully understand the importance of *The Book* to him, but she very well knew how to read the pain he was undergoing. After some time, she began to feel embarrassed for intruding on him at a time like this. She even felt a trace of regret that it had been she who made the discovery and pointed it out to him, as if in some way she might be the cause. That was silly, but she couldn't help feeling an irrational sense of responsibility and guilt. Seeing that her presence was only preventing Dan from fully attending to his concern, she said

goodbye and left his apartment. As she walked out into the brisk morning air, she happened to glance up at the window across the street and glimpsed a small, frail looking man staring out at her. For some indefinable reason, the man's look filled her with dread.

After her departure, Dan examined the book more carefully than before looking for a pattern or an explanation. At first he thought that the color change might be confined to the specific group of pages in the middle of the book. But he soon realized this was not the case. Then he noticed the strange fact that the pages in the beginning of book which he had read and reread often were much less faded than those toward the end, especially chapters which he had not yet read even for the first time. But even the early chapters were definitely less clear and defined than a few months ago. He wondered that he had not noticed it before. At one point it occurred to him that perhaps the very act of *not reading* the chapters was reducing their visibility. It was almost as though the pages were protesting the lack of attention by threatening to disappear. Dan then got the strange notion that the book was subject to some kind of programmed self-disintegration, kind of like the self-destructing messages in *Mission Impossible*. Except in this case the process of deterioration was very slow and it seemed to strongly effect those portions which he had not read far more than the ones he had studied intently. Then he considered other possible explanations for the differential rates in declining visibility. Could it be that the exposure to light had helped preserve the pages he read several times and that by exposing the other pages in a similar manner he could slow the process of deterioration? Fast or slow, the fact was, he was running out of time! The more clearly he realized what was happening, the more alarmed and disturbed he felt. In truth, he panicked. He suddenly became short of breath, overwhelmed with fatigue and filled with a deep foreboding.

The simplest solution would have been to go out and buy another copy; but after endless searches on the Internet, he had long ago given up hope of finding another copy for sale. If any existed, they were not being offered for sale—at any price. The next obvious solution was to make photocopies of the text. He had thought of doing it much earlier, so that he could provide copies to Ray, Anya and Vinay, but to his surprise—and, frankly, it still surprised him—none of them ever asked for a copy of their own. They seemed to be quite content referring to the copy he kept on his desk whenever he was in the office or simply asking him to tell them what *The Book* had to say on one subject or another. Even after they came to recognize and deeply appreciate the value of the book, it was as if they preferred to keep a respectable distance from it!

Anyway Dan had considered making photocopies just in case, but he never felt the necessity until now that he realized that the original copy was in danger of vanishing forever. Although it was a Saturday, he drove to the office and immediately headed for the photocopier. He opened the book in the middle to two facing pages that were partially faded and made a copy. Perhaps the bright light of the copier would even retard further fading until he could find a permanent solution. The photocopy was not quite as clear as the original, but it was still clearly readable. Without thinking, he started to copy subsequent pages from that point forward in the book. Each time a page was copied, he felt a slight sense of relief, a greater sense of security, a confidence that something precious which he was afraid of losing would now be safe.

But after copying a few dozen pages, his confidence suddenly disappeared. For when he turned back and examined the copies he had just made, he noticed a clear trend. Each successive page was lighter and less readable than the previous one. At first he concluded that the copy machine needed more toner, so without even checking he inserted a brand new cartridge and resumed printing again. But this did not make any difference. Each successive page was lighter than those which came before it. His sense of panic increased. Then it became even worse. For when by sheer chance he flipped back in *The Book* to the place where he had started copying, he noticed that the original pages seemed visibly less readable than they had seemed just twenty minutes earlier. He tried to assure himself that he was only imagining things out of his anxiety to preserve *The Book*. So he copied the original two pages again and compared the new copy with the one made minutes earlier. It was noticeably fainter. By this time he had copied pages 152 to 178. When he flipped back through the pages, he also noted that the pages from 152 onward were significantly lighter than those just before 152. It was as if his very attempt to copy the pages was somehow accelerating the process of deterioration. When he realized this, his anxiety rose so high that he stopped everything. He did not know what to do. He felt cornered. He could not proceed in any direction.

Dan had spent perhaps the equivalent of 180 out of the past five hundred days studying *The Book*. He had finished a first reading of only 25 chapters and did not feel that he had fully comprehended the contents of even one of them. In fact, he read the first chapter, entitled *Human Aspiration*, five times and each time it revealed entirely new insights that he had missed in the previous readings. Now suddenly he was confronted with the fact that the book was disappearing and everything he did to prevent it from disappearing only seemed to accelerate the process.

Much later it occurred to him that he should have consulted the matrix in AIS² for guidance, but at the time he lacked the presence of mind to refer the dilemma to the program for a solution. The idea never even occurred to him. His mind simply shut down. He shut off the photocopy machine, picked up the photocopies to scan them once more, and noticed that they too were beginning to fade. Why wasn't he surprised? Everything was collapsing around him. He closed down the office, drove home and spent the rest of the day with a splitting headache and a wrenching ache in the chest. It never even occurred to him that *The Book* was offering him a profoundly important lesson.

31. Nightmare

At five the next morning, Dan's phone rang. It was Ray. He was still only half awake when he answered it. Ray was speaking so fast and so loud that Dan found it difficult to follow what he was saying, but he could tell that he was very upset. More than that, he was terrified. Dan asked him to slow down and explain what the matter was. Ray told him he was speaking from a hotel called the Queen's Inn, near O'Hare airport in Chicago. He had been planning to connect on a flight back from Washington to SFO last night, but his flight out of Dulles was delayed and by the time he landed in Chicago, there were no more connections until the next morning, so he took a room for the night. Then it occurred to him that this might be a good opportunity to meet his brother, Neil, and try to overcome the unpleasantness that occurred during their meeting in Boston. Ray decided he would call Neil first thing in the morning and see if they could meet for breakfast or lunch, and then catch a flight to SFO.

Looking at his watch, Dan realized that it was only seven in Chicago. "Did you call him?" he asked.

"Not yet," Ray replied. "That's what I want to discuss. You see, last night was an absolute nightmare. I have never been so scared in my entire life. The whole night was one continuous nightmare. Only thing was that it was absolutely real. No dream."

Dan interrupted Ray's torrent of words. "Slow down, Ray. I am not following you. What was the nightmare?"

"What happened here. What happened in the hotel. I think the guy is dead."

"Dead? What guy?"

"The guy in the room next to mine. He ran out into the hall and was shot by the police. They thought he was the criminal."

Dan tried to get Ray to calm down and explain what had actually happened from the very beginning. Ray told him that he had checked in, got into bed at about midnight, and fell asleep immediately. At about 2 am, he was awakened by some shouting in the hall. At first he thought it was someone who had had too much to drink. The man kept shouting something Ray could not make out. Then Ray heard a bunch of men talking loudly right in front of his door. It went on for ten minutes. Finally, Ray was so annoyed that he got up and opened the door to shout at them for being so inconsiderate. When he did, he saw three policemen standing right in front of his door with guns in their hands. They seemed to jump at the sudden sound, turned toward him and rudely gestured to him to shut the door. Their behavior seemed to radiate fear and Ray felt that vibration passing through him like a shiver. He closed the door, called the front desk and asked what was going on. The operator apologized and said the police were here to arrest a man on the same floor. She asked Ray to simply remain in the room and said he would be safe there. She apologized again for the inconvenience and promised to call him as soon as the incident was over. Until then, she asked him to remain in the room.

"I got back into bed, but I could not sleep. I could still hear the policemen talking. I heard them talking on a radio phone as well. This seemed to go on for hours. There was nothing I could do. Finally I began to drift off into sleep. Suddenly I heard a shout, followed by several other shouts and then a gun shot. I rolled out of bed onto the floor on the opposite side of the room and lay flat on my stomach. The shot was fired right in front of my door, I am sure of it. It echoed throughout the room. I was afraid there might be others who fired back. Maybe one of them would come through the door into the room. Then there was further shouting and stamping of feet. I heard the policeman shout, 'Oh God, I think I killed him!' The man actually started whining. Several people seemed to be running. Then I heard, 'Call an ambulance.' More running. Then dragging of feet. I lay there for another fifteen minutes or so. By that time, everything had become quiet. I could no longer hear the police. Occasionally I heard a door open and close in the distance. Finally I got up and called the front desk. The same woman answered. She apologized again and said it was all over. I was free to leave me room. I asked her what had happened. She said the police had gotten the man and taken him away. She would not say more. By this time it was 4 or 4:30 am. I went back to bed and dozed restlessly till about 6. I got up, showered and went down to the lobby for a newspaper and a cup of coffee and to see if the hotel staff would provide more information. As I walked into the lobby, local morning news was on the TV. A criminal had been apprehended by the police during the night at the Queen's Inn. During the encounter a hotel guest had run out into the hall in violation of instructions from the police and had been accidentally shot. The innocent man died en route to the hospital. His name was Joseph Burger from California."

Ray paused for a second to let his words sink in, then he repeated himself. “Did you hear me, Dan? His name was Burger. B, U, R, G, E, R! He was shot right in front of my room. He was a guest, like me. He is dead!”

Dan tried his best to help Ray calm down, assure him the nightmare was over, and offer thanks that it was not him, only his name sake. Dan knew Ray must be exhausted and suggested he go back to bed and get some real rest, then fly back in the afternoon. Then he asked Ray whether he had spoken to his brother yet.

“No,” Ray replied. “I have been so upset, I had not made up my mind whether to call him.”

“Ray, its better you don’t call him. This is not the time. I’ll explain why when you get home.”

Ray said he did not want to remain in the hotel or Chicago for a moment longer than necessary, so he planned to go straight to the airport and catch the first available connection to any Bay Area airport. Since Rana was away in Bangalore, Dan agreed to pick him wherever he landed.

After the call, Dan lay back in bed and tried to fall asleep again, but he could not. At first his mind was filled with Ray’s terrifying experience. It was frightening even to think about what he had been through. A man named Burger in the room right next to Ray’s is accidentally shot and killed right outside his door. Why did it happen? If this is life’s way of playing with people, Dan thought, then life has a very strange sense of humor.

Suddenly Dan thought of *The Book*. Since he had found it, it had always provided useful insights for understanding their personal experiences. But when he thought of it, he suddenly remembered his own nightmare. *The Book* was disappearing. Now there were two perplexing problems to resolve. Why did Ray have a near-death experience in Chicago? Why was Dan losing the most precious possession he had ever acquired? Then it occurred to him. Perhaps the two problems have something in common.

He finally got up, showered and had some breakfast, but he was in no mood to go to the office, so he decided to remain at home until he heard from Ray and then drive straight to the airport to pick him up. He waited for a call back from Ray. It did not come. Finally at 8:40 Dan called Ray’s cell number. Ray told him that the plane he was on was just leaving the gate and he had forgotten to call. His flight was due into SFO at noon. Meanwhile, Dan had enough to occupy his mind. He desperately needed to find a solution to save *The Book*. He also needed to come up with a satisfactory explanation about the incident in Chicago before Ray landed. He sat back and tried to look for a connection between the incidents. He recalled a statement from the *Archives* about time.

Simultaneous events are always related causally or correlated by some common underlying principle or element. Events that happen at the same time are related, even when they occur to different people or on different sides of the planet. There are no exceptions!

What, he pondered, could possibly be the relationship between the death of a man named Burger and the disappearance of *The Book*? As he was asking himself that question, Vinay called and told him something that added still another question to the list of imponderables. Ever since he had found *The Book*, Dan had been experiencing a sense of certainty that had never been there before. Suddenly, he was faced with a growing list of questions that he could not answer.

32. Bill Tate

Vinay apologized for calling on a Sunday morning, then explained why he did not want to wait another twenty four hours to talk. “Dan, remember, I told you I was invited to address a dinner meeting of the Bay Area Software Association on AIS²?” Vinay began. “Well, the dinner was last night. After the meal, I did our standard presentation on the program followed by the Accor case study. I went through the four quadrants of the decision-making matrix and fielded some interesting questions about why Quadrant II decisions often get successfully completed over time, whereas Quadrant III decisions start off well and then fail. I used Accor to illustrate the hidden potential behind an opinion and how that potential could be tapped by reversing the opinion. That seemed to go over very well with the group.

After Vinay had completed his presentation, he was asked a question by an entrepreneur named Bill Tate about change of attitude. “How does AIS² take into account the power of a change of attitude?” he asked Vinay. Tate illustrated his question with a personal example from his own business. His company was a network service provider to mobile telecoms in the Bay Area. He started only four years ago. Last year his revenues were about twenty million dollars and his net income was around four million dollars. Then, he said, in the past twelve months, his net income had tripled. Vinay nodded approval, congratulated him, and replied by asking Tate to tell the group how he had done it.

“I changed my attitude,” Tate replied. Vinay remained silent, waiting for more. Then Tate elaborated. “Last year I attended a Dale Carnegie Management Course. On the last day, our instructor gave us one final assignment. He asked us to identify the person in the world whom we disliked the most and go make friends with them, genuinely, not just as a pleasant behavior. Immediately I knew what my assignment would have to be and I cringed at the very thought. It was the contract manager of my single largest customer, a forty-five year old engineer, a thorny, aggressive, irritating woman who I simply could not tolerate. Every time I meet or speak with her on the phone, it ends in a quarrel. It had gotten to the point where I avoided her calls and passed them on to someone else in the office. Last year I hired a sales manager just to handle this woman, since I knew I was incapable of doing it myself without quarreling with her. Anyway, I knew she would have to be my assignment. At first I did not do anything. I just reflected on my attitude and the past history of our relationship. I had to concede that she had not always been wrong and I had not always been right. It occurred to me that she probably disliked dealing with me as much as I did with her. I tried to recall any isolated incidents in which she had actually done something nice for us and was surprised to discover how many I could list. I realized that part of my resentment against the lady was because she reminded me of my ex-wife.”

After reflection, Tate decided to make an effort to change his attitude and relationship with the woman. He accompanied his manager on his next visit to her office. She was surprised to see him. Initially she was defensive and even somewhat aggressive. But when she found that Tate had not come to cause any trouble, she gradually relaxed. By the end of the meeting they were both smiling over nothing in particular. Tate started taking her calls when she asked for the sales manager. He made a couple more visits over the next three months, always along with his sales manager. After that he just forgot about the assignment. Last week Tate reviewed last year’s financials. He knew his business with her company had grown, but he had no idea that it was up four hundred percent. When they did a detailed cost benefit, it turned out that business from this company alone had tripled Tate’s bottom line. “So my question is, if a simple change in attitude can result in a tripling of net income, how does AIS² factor in the potential of changing one or more attitudes in assessing the growth and profit potential for a business?”

Vinay said that when Tate sat down, the whole audience turned back to him looking for his response. Vinay responded that together with opinions, attitudes constitute one of the most important internal components of the decision-making matrix, so any change in attitude would be reflected in the model. “I knew what I said was true in principle, but I was also painfully aware that we have not really developed a methodology to analyze and factor in attitudes the way we have done for opinions. Lucky for me, time was running out and the association chairman took the mike to thank me and call the meeting to a close. I don’t know whether anyone noticed how uncomfortable I was with Tate’s question.” After the meeting, Tate came up to Vinay and asked him for further clarifications on AIS². Vinay promised him an answer in a day or two.”

Dan was still staggering under the impact of Ray’s calls and his crisis regarding *The Book*. He had no spare capacity to apply to Vinay’s question at that moment, and was eager to put off Vinay’s question until later. He replied that he was just leaving to pick up Ray and promised Vinay he would discuss it when they met on Monday.

On his way to SFO, Dan reviewed the events of the past twenty-four hours. His mind went back to the *Archives* quote about the relationship between simultaneous events. He found it hard to believe that so much had happened in so short an interval. Lauren had come by to thank him for the bonus, the first time she had ever visited his home. He had been happy to see her and glad she had taken the initiative. She had told him something he had not known about *The Book* being printed on handmade paper and then she had made the astonishing discovery that the pages were disappearing. If she hadn't come along, who knows how long it would have taken him to notice it himself. He had been so preoccupied with AIS², it might have gone undetected until it was too late to do anything about it. Perhaps it was already too late. After she left, he made the even more disconcerting discovery that his efforts to preserve a copy of the pages actually accelerated the process of their disappearance. He had been too exhausted and upset to apply his mind calmly to think about why that was happening or what he could do to stop it. Then Ray had called early in the morning and related his nightmarish experience in Chicago and now Vinay comes back with a question that essentially challenges the validity of AIS².

If simultaneity implies relationship, how was he to understand the fact that Lauren's visit coincided with the discovery about *The Book*? Should he be grateful for her visit or regret it? What would have happened if she had not shown up? And how were these events related to Ray's experience in Chicago and Vinay's dinner meeting? Or were they even related? Then there was another coincidence, if there are any such things as coincidences. Ray had decided to call his brother Neil the next morning and the next thing he knows a man with the same last name is shot right outside his hotel room. The last time Ray and Neil met, Neil was aggressive and perhaps angry and Ray had ended up with a broken leg. Dan did not really think it was an accident that Dan fell down the stairs. He believed it was an expression of Neil's aggressive hostility, but felt it would sound preposterous if he tried to convince Ray of that view. Now once again, proximity to Neil results in danger to Ray. It couldn't purely be a coincidence. Not that Dan believed Neil consciously did or would do anything to hurt his brother. But he did believe Neil's anger could act through life events. When he had suggested it to Ray earlier, Ray had dismissed the notion with annoyance. Would he do so now? And what was the link between *The Book*, Ray's experience and Tate's question about attitude?

Then he saw a connection. It was staring him right in the face and he wondered how he had missed it up until now. Attitude must be the link. It was very clear that Neil did not approve of Ray's life and decisions. More than just disapproving, it disturbed and provoked him. Perhaps he wanted to exercise authority over the life of his younger brother. Perhaps he was jealous that Ray had chosen a life he believed in and not just succumbed to the lure of money and social success as Neil had. Either way Neil's attitude to his brother was intensely negative, that was evident. If attitude has power, then that power might act positively as it did in Tate's case because he tried to make his attitude to the woman positive, or the power might act negatively as in the case of Ray's brother. Either way, the same principle was expressing. But what did any of this have to do with *The Book*? Dan wondered. But what if his problem with the book was a problem of attitude as well? He tried to step back and think through the issue calmly, but his mind was too tired and disturbed to see things clearly. He needed to gain mastery over his mind, to quiet the chatter so a clear understanding could emerge. "I won't think about that now," he said to himself and burst out laughing as he recognized the words of another O'Hara, Scarlett O'Hara in *Gone with the Wind*.

He tried to forget these problems for the time being and think about something else. There had been something else about Vinay's story of Bill Tate that had intrigued him. If behind every opinion there is a hidden opportunity and behind every attitude there is a hidden profit potential, then where were the limits to growth? Perhaps *The Book* was speaking literally and not figuratively when it spoke about infinite potential. It reminded Dan of a statement he had read in the *Archives*.

The physical sciences regard infinity as a mathematical concept. We have not yet come to realize that in human life infinity is a practical concept. There really is an infinite potential for creation.

Could infinity really be a practical reality? Dan laughed at his own question. He had more pressing issues to deal with at the moment.

33. Non-locality

Dan arrived at SFO and saw Ray already standing out at the curb waiting for him. His flight must have been early. Ray looked haggard as he walked to the car and Dan hoped he was too tired to even raise any questions on the drive back home. But the moment he got into the car, Ray turned to him and said, "I know what you are thinking. You think this incident is somehow related to Neil. Isn't that it?" Dan waited to see if Ray would continue, but that seemed to be all he wanted to say.

"Well, since you insist on asking me my opinion, the answer is 'yes'. No matter how fantastic it may sound, I am quite sure of it. When you met Neil last, you broke your leg. Now you were lucky not to get shot or die of fright. I know all the objections you will raise, all the excuses and explanations you will give. I have raised and made them all to myself a dozen times already, because that is how the mind works. Rather, that is how our minds have been trained to work. But I notice when I say something like that to Vinay, he readily sees the truth in it and accepts it without discussion. He was raised with a different conception and understanding of life and is not even aware of it. We call the Indians superstitious for believing things that cannot be explained in terms of material causality. I am beginning to think we are the really superstitious ones who refuse to even explore phenomena that cannot be seen through a telescope or a microscope. We go even further. We simply refuse to take note of plain facts presented before our eyes."

"What facts?" Ray asked grudgingly, even though he agreed with every word Dan had spoken.

"The fact that whenever you think of approaching Neil to reconcile with him, something very bad happens to you. That is an undeniable fact. You may reject my explanation, but you cannot deny the fact. I am saying that we are trained to ignore facts such as this simply because they do not conform to our notions of causality. If you and I are in the same room and I push you so you fall down, people readily concede a cause and effect relationship because of our spatial proximity. But if we are in different rooms and I suddenly feel a surge of anger or a surge of love toward you, no one will concede it can impact on your physical or psychological experience because of the spatial separation between us, even when the timing of my feeling and your experience directly coincide as they did in Boston. That is because we do not accept the validity of temporal proximity.

"It is exactly one hundred years to the year since Einstein formulated his Special Theory of Relativity, which provides the conceptual framework for the unification of space and time into space-time. He proved that time behaves precisely like a fourth dimension of space. Since then physicists have outgrown the superficial notion of spatial causality and accepted the principles of quantum entanglement and non-local connections, which are consistent with the concept of time as another dimension. But the logic of conventional materialism still insists on a concept of causality as outdated as the geocentric universe. I am not asking you to accept the fact because it is consistent with Quantum Theory. There is much in that theory that I do not accept myself. Nor am I asking you to accept it because it is totally consistent with what is stated in *The Book*. My confidence in *The Book* is my affair and I do not wish to impose it on others. But I am asking you to accept the fact of your own personal experience and give serious thought to its possible meaning, before something even more serious happens and it is too late. Beliefs are secondary, as far as I am concerned, provided you are safe. The matter is just too serious to be casually dismissed. I am also asking you to consult you own feelings and tell me whether deep inside you do or do not sense that what I am saying is true. In areas where I lack knowledge, I find my deepest feelings are a truer guide than my mind."

Dan was still parked at the curb, because he did not wish to drive in the middle of a heated discussion. But a policeman came over and signaled him to move the car, so he started it and drove toward the airport exit. "But, Neil did not even know I was in Chicago or planning to contact him," Ray replied. "He had no idea. And even if he knew, what could a police shooting possibly have to do with him?"

"That only means the action of thought and feeling is not limited to our surface consciousness, anymore than the electromagnetic spectrum is limited to the wavelengths of visible light that we perceive. If life is a field of energy and thoughts, attitudes and emotions represent forms or waves of energy, then they must be able to act whether we are conscious of them or not. Last week I asked Eric Green for a budget review report on AIS² to see how much he had run over his initial estimates. He came into my room, chatted about something for a few minutes, and then walked out again with the report still in his hand. When I reminded him, he looked genuinely surprised and immediately handed it to me. Haven't you ever seen a person who did not know they were angry or upset until someone told them? They feel it intensely but the conscious mind denies it. Neil may not have been conscious that you were in Chicago or intending to call him, but your thought and intention forged a relationship just like an electrical circuit and his subconscious feeling flowed through that circuit and expressed itself right outside your door. Mothers intuitively sense

these things about their children, even without conscious information. Some wives have a similar sense about their husbands. Call it intuition, sixth sense or anything you wish.

“As for why it expressed as a shooting...” Just at that moment, another car came rocketing out of one of the side roads which was blocked for construction, heading in the wrong direction on a one-way road and headed straight toward them. Ray saw the car coming and shouted. Dan swerved to the left and jammed on the brakes. The other car stopped just two feet short of impact. The driver looked angry. Then he put his car in reverse, backed up, turned around and went on his way. Dan turned back to Ray and said, “Let’s postpone this discussion till we reach home.” Ray readily nodded his consent.

Dan decided to focus on something non-controversial. He was still too upset to mention the problem of *The Book* in a moving car, so he reported to Ray the substance of Vinay’s call earlier that morning and put the same question to Ray: “How does AIS² factor in the power of a change in attitude?” Ray seemed somewhat baffled by the question. He had never been one who felt too comfortable with psychological conceptions. This topic engaged them the rest of the way back to Berkeley. As they pulled up in front of Ray’s house, Dan was tempted to mention the non-local connection between Ray’s experience in Chicago and Tate’s question, but he knew this was not the time to discuss anything. He suggested that Ray take Monday off to fully recover his energies and said he was also planning to spend Monday at home. Ray was exhausted and readily agreed.

34. Facades

On Monday morning Vinay arrived at the office still preoccupied with the question raised by Tate. He was impatient to get an answer and disappointed that Dan had postponed their meeting until Tuesday. It was clear to him that the question had major implications for the future of MAI and AIS. As he walked through the hall, he encountered Anya walking briskly from the Research Department toward her office. It took only an instant for him to perceive that her face was flushed and distorted by a powerful reaction. He followed her into her office and closed the door behind him.

She looked up, tried to smile and seeing that he was already aware of her emotional state, burst out in frustration. “Sometimes I feel like strangling those three men. They behave so very differently from each other, but underneath they are all the same. I’d fire them in a minute, if I thought I could find anyone better. What is it with these people? Don’t they have any basic human feeling for others?” Then noting the questioning look on Vinay’s face as he silently listened, she identified her three senior project managers, Tony Preston, Jean La Brec and Eric Green. “Tony is so accommodating and agreeable when I speak with him. He understands and accepts the logic of all my arguments when we discuss, then he promptly turns around and does precisely what he wants. It is just as you warned me when I hired him back for PAIS. He is totally unreliable and deceitful! Jean, on the other hand, is rude, offensive and sarcastic, and not just to me—to Lauren and everyone else who works for him or with him, but especially to women. His sarcasm is like a razor blade. It mutilates whatever it falls upon. He thinks he is being so clever, when he is really just being mean. I wonder if he has any idea how much damage he causes with that blade. Does he really think anything good and positive can be accomplished with that weapon? It does not help people improve. It only tears them down and generates bitter resentment. It’s the instrument of a brute. At least, Jean I can handle, because he is honest about how he feels, so I treat him exactly as he deserves. I dispense with all the formal politeness that is so highly praised in America and treat him as roughly and sarcastically as he treats his co-workers. He respects that. He admires strength, but it does not change him. Instead, it changes me. It makes me feel dirty and vulgar, like I am descending to fight with mud balls. I hate myself when I do it. I hate him when I don’t. I let him pull me down and degrade me and I feel like crushing him. Just because I am a woman, a Russian and a mathematician, rather than an exalted electronic engineer, he insists on his imaginary sense of superiority, even when it is abundantly obvious that he is wrong—and he is wrong at least seventy-five percent of the time. But right or wrong, his behavior is abominable.

“But I can manage with Tony and even with Jean because I understand them, even if I do not like them. But Eric is the worst of the three. His behavior is impeccable! He is invariably polite. He always says the right thing. He does whatever I ask him to do. He never behaves badly with me, Lauren, or anyone else. For a while I thought I really liked him. Finally I had found someone I can work with, a mature professional. But I now know that he is a complete hypocrite. His perfect behavior is a screen. He tries so hard to behave perfectly that he has no energy left over to be even modestly decent inside. He strives so hard to appear to others as considerate, respectful, generous and unselfish, that there is hardly a thing which he does which is really genuine and not tinged with offensive condescension or meanness. At least, Jean is capable of an occasional genuinely kind or sincere act, when he is not too busy being offensive, but not Eric, and he expresses it in the smallest, most innocuous ways. Some time ago, Allen Shores spent three days working overtime on a work-around for a glitch in one of Eric’s matrix algorithms. Allen didn’t have to do it, but he knew Eric was overworked and could use some help. He sent it to Eric with a very brief note saying he hoped it would help, with a copy to me. Allen’s fix not only solved the problem, it improved processing speed by forty percent. Eric never replied to him. Seven days later when I asked Eric whether he had seen Allen’s fix and found it useful, Eric effusively praised what Allen had done for ten full minutes, at a time when neither Allen or anyone else was present to witness it. He had received and incorporated the fix, yet never said a word of it to Allen! If I were Allen, I would never help him or any of them ever again. When Eric found out that I had discovered his sleight-of-hand, he put on a big show, just for me. Underneath the surface he is meaner than Jean, more unscrupulous than Tony and more selfish than both of them put together. But his surface behavior is flawless. I’d prefer a lean, mean, hungry looking Cassius to Eric’s polished pretensions of goodness any day. How many times have I heard people here speaking about the boorish behavior of Russians, Indians and other foreigners, because they are not accomplished masters of disguising their true feelings? And the Chinese and Japanese who are more even masterful at it, they say cannot be trusted!

“I know I am not perfect, far from it, and I don’t expect others to be either. I also know, not everyone is like those three. Lauren is an absolute angel to work with. So are Allen and Randy. Ray does not have a mean streak in his body. He is humble and unpretentious, even when he is most brilliant. Dan never assumes or presumes anything. I believe he is usually so quiet because he spends so much energy trying to

improve himself rather than to impress other people. But these three—I have to work with them all day long, month after month, and I am finding it impossible. Kindly tell me, how am I to deal with that?”

“The first thing I would do,” Vinay replied when he sensed she had finished unloading, “is to raise Eric’s conduct in the next department meeting.”

Anya immediately interrupted. “How could I? Ever since then Allen has been home sick with a high fever. It’s as if life conspired to protect Eric’s graceful facade. I spend so much time trying to patch up the wounds created intentionally or unintentionally by these three that I sometimes think I could accomplish more without them. If those three had Allen’s attitude or if Allen had their talent, I am sure we could accomplish three times as much.” Anya then apologized to Vinay for her outburst and said just sharing it had helped relieve her frustration.

As he walked back to his office, Vinay was struck by Anya’s last statement. She had said that with a change of attitude they could accomplish three times as much. It was precisely what Bill Tate said he had done and he was speaking after actually having tripled his company’s profits. “It leads back to the same questions,” he thought to himself. “How can AIS² access the potential gains from a change of attitude? And, assuming it can, how can we get other people to see that potential and take the effort needed to tap it?” Then he began to wonder about his own attitudes and what hidden treasures they may conceal.

For some time he had been mulling over his priorities in life, his urge for accomplishment and his urge for a family. He could feel the weight of gravity that kept him from springing loose and rising, just like the ropes tethering a helium balloon to the ground even as it hovered above the treetops. His parents called him every week, reminding him incessantly of what they considered important, never really considering whether it was equally important to him. He felt as much pressure as Ray did, only without the animosity and blatant disapproval. Ray really knew what he wanted for himself in life. His problem was only his attitude toward his family and their attitude toward him. For all their talk of freedom, his family did not appear very tolerant of difference or dissent. Ray was held back by an attachment and an attitude of obligation to his family, even when they bitterly opposed him, not by any real confusion in his own mind about what he wanted or what he should do.

But in Vinay’s own case, he knew that a major part of that pressure came from within himself, from that in him which had not fully made the commitment that he knew he should make and he had decided to make. His own attitude, his own ambiguity, was a tether that kept him from rising higher, at a time when he was just beginning to glimpse how much higher that could be than anything he had dreamed of in the past. In the final analysis, it all boiled down to a matter of seriousness. How serious was he about higher accomplishment? How much did he really want it? Would he be content with achieving respectability or did he want something more than simply boosting his own ego? He told himself he did and wanted to believe it. But he knew he had a casual side that enjoyed being just where and what he is today. Dan met Vinay’s criteria for seriousness, yet Dan lived and enjoyed the challenges and adventure of life as much as anyone he had ever met, he just did it quietly, unostentatiously without presumption. Dan was his conception of a true romantic. Yet Vinay knew that people like Tony, Jean and Eric made fun of Dan behind his back, made fun of his seriousness as if it were an affront to their own smallness. Vinay knew he had to make a choice. It all came down to a question of attitude.

As for Anya, family was not her problem, but society was. She was always trying to prove something to those around her, to prove she was as competent as the men in her life, when anyone with eyes could see she was even more competent. She was driven to prove something to herself and to others, when she could be better spending her prodigious energies on creating something entirely new. She had brought with her from Moscow the atmosphere of suspicion that had pervaded public and professional life under communism and she was not able to shirk it. She had seen and suffered too much of back-stabbing and ruthless ambition at the Institute not to be highly sensitive to the first sign of it in others over here. Not that she was wrong about those three. Vinay had understood their true characters long before Anya, Ray or even Dan had perceived them, but he had never spoken until they began to note the character traits he had observed. But there is a way to relate to people—an attitude—that deemphasizes those traits and encourages the other person to overcome them, and there is a way that pinpoints, highlights and activates the very trait they so badly want to avoid. Vinay had learned from his grandmother not to give attention to something that you want to go away, because the very act of giving it attention makes it grow. Now he was learning from Dan, or rather from what Dan had read in *The Book*, that reacting to what is negative in others energizes the negative even more powerfully. You cannot master a vibration that you react to. That only reinforces it. As a bare minimum, you must refuse to react, like a piece of styrofoam used to dampen sound. But as in physics, a human vibration can only be eliminated by superimposing on it an opposite or complementary vibration that cancels it out by interference. That’s what Bill Tate had done and the results were simply astonishing.

Vinay wondered if he was capable of a similar effort at MAI and what the consequence would be if he were to succeed.

35. Gratitude

On Tuesday morning they all assembled as agreed. Anya and Vinay were looking particularly bright, while Dan and Ray looked worn out before the day had begun, as if neither of them had slept the night before. Neither Anya nor Vinay knew anything about what had occurred in Chicago, so Dan asked Ray to relate his experience to them. With Rana in Bangalore, he needed someone to share it with to get it off his nerves. Both of them sat motionless during Ray's narrative and speechless for sometime afterwards. They relived the terror that Ray had passed through vicariously. As they did, Ray gradually regained a bit of his normal energy and appearance, while the brightness vanished from the faces of his colleagues. Both of them involuntarily looked to Dan for a comment, but he remained silent and let them draw their own conclusions.

Eventually the discussion turned to Vinay's encounter with Tate. "I've been giving a lot of thought to this issue in the past thirty-six hours," he began. "It's all about the power of attitude. Attitudes are powerful, whether or not we are conscious of them." Ray glanced at Dan to see if he derived some satisfaction from Vinay's statement, but Dan's face was impassive. "It seems to me that it wasn't really Tate's actions that made the difference. It was his change in attitude towards that woman. If he had gone through the same actions without the change in attitude, I doubt if it would have had any impact." Then turning to Anya, he commented, "It would be just another form of pretense, like Eric's politeness." She nodded agreement. "The one thing I am not clear about is whether a change of attitude alone can generate results, even without a change in behavior. That takes me to my main question, "How do we incorporate the potential power of a change of attitude in AIS?"

Vinay then related an experience he had when he joined Shell as a project manager prior to his job at Rothman & Lazurus. "There was a fifty year old guy in the department named Don Gray. He had been with Shell all his career and worked on the legacy planning systems developed in the 1960s and 70s. Unfortunately he was never given or never took the trouble to upgrade his technical knowledge to keep pace with the revolution in supercomputing. When I joined Shell, Gray was No.2 in the department and he had expected to be promoted to the top. They brought me in and put me in charge. I was half his age. The outgoing department head warned me that Gray was a sour apple who was demotivating everyone in the department and throwing up obstacles to every new idea and initiative. He apologized for leaving me with this problem to solve and advised me to get rid of Gray as soon as possible." Vinay found that everything he had been told about Gray was true. It was actually worse than that.

Shell was just about to launch a new generation of scenario software—something totally new—which no one in the department was qualified to handle. Vinay decided to take a big risk and select Gray as the project leader. Gray was stunned when Vinay asked him to take up the assignment and he only half-heartedly agreed, as if he suspected a trick of some kind. "I sent him for a six week training program with the software developers in Palo Alto. When he came back, he was a different person. He looked at least fifteen years younger. His usually lethargic and sardonic manner was completely gone. He was full of energy and enthusiasm. He no longer responded with doubts and resistance to suggestions from other people. He seemed eager to listen and accept whatever he could of their ideas. To make a long story short, he became a cheerleader for the whole team and the single most valuable member of the department. When I left Shell, I recommended him as my replacement. His attitude was totally transformed. But until it happened, no one had conceived that it was possible. If your biggest human liability can become your greatest asset in just six weeks, that is something too important to overlook. Imagine if such a change could be brought about in every member of the team or in even half the members. Why a team like that would perform like world champions. They would *become* world champions in their respective field. We all know that every sales training and motivational program on earth emphasizes the importance of attitude. If AIS cannot factor in this basic element, then we are going to become the laughing stock of the Artificial Intelligence community. Maybe we got lucky on North Ireland and Accor, but we can't expect to grow if we ignore this issue. The question is how will we factor in the power of attitude to release hidden personal capacities?"

Anya had been listening intently to the entire conversation without saying a word. She was too busy thinking about her conversation with Vinay the previous day regarding Tony, Eric and Jean. Only now she began to reflect on her own attitude, rather than on theirs. She suddenly saw yesterday's conversation in a very different light. Everything she had said about them was true, but it was not the whole truth. She had failed to take into account her own attitude and its impact on them. As Vinay's story about Don Gray illustrated, if attitude is powerful, then her attitude as their manager also must have power. Vinay had turned around an impossible person by adopting a different attitude to Gray than his predecessor had. Previously she had been too upset and too self-righteous to even consider her own contribution to the problem. Lucky for Vinay he had not mentioned it to her yesterday. It suddenly occurred to her that Vinay may have told the

story of Don Gray for her sake today, but directed his attention to Ray and Dan in order to make it less obvious. She wasn't sure whether she liked the idea of a subtle, indirect hint. Then she caught herself again feeling the suspicion and defensiveness she knew she had to overcome.

The meeting went on for another hour and ended inconclusively. They agreed to meet again the following morning to consider the issue further. Dan decided to postpone any discussion about the disappearing pages of *The Book* for another day. He still needed more time to clarify his own thoughts on the matter.

That evening Vinay's stories about Don Gray and Bill Tate kept coming back to Anya's mind. For some reason it made her think about Grigori Niconov, her professor and guide at the Moscow Institute before she came to America in 1996. She had not seen or heard from him after leaving Moscow and it seemed like ages since the thought of him had entered her mind. Grigori was a brilliant mathematician, but a very difficult and unpleasant person to work for. A typical Russian male boss-dominating, arbitrary, self-important, full of ego, jealous of his own students and subordinates. Even now she could feel the latent anger and resentment for the way he used to treat her. He ran a tight ship at the Institute, produced brilliant people, but everyone disliked him. After leaving Moscow, Anya rarely thought of him and when she did it was always his insults, slights, sarcasm and teasing that she remembered. His cutting, pointed sarcasm could slice through the thickest self-confidence and the best goodwill in minutes and reduce you to tears. She hated that the most. Recollecting his behavior infuriated her.

Thoughts about him kept coming into her head that night and she could not get rid of them. At one point she recalled something her mother had told her about trying to remember the good about other people as well as the bad. Anya took out an old diary she had written during her last years in Moscow and found some entries about Grigori that she had not remembered. When she tried hard to recollect their relationship from the very beginning, she recalled how much he helped her during her initial years at the Institute. It was he who had gotten her admission, secured her scholarship and ensured she got the courses she wanted. He had even coached her through some rough patches when her grades were falling. She was amazed that she had forgotten so much.

She woke in the middle of the night still thinking about Grigori. Lying in bed, she began to regret all the negative feelings she had harbored against him for years. She even began to feel grateful to him for all the help he had given her. She recalled a statement she had read about gratitude in the *Archives*.

Conscious awareness of God acting in human life is called gratitude.

Anya had given up all religious feeling when she was a small child. The authorities had demanded it. But her Russian soul had always retained some indefinable sense of a divine existence of some kind. She never prayed, but she always felt she owed a debt of gratitude to some Being or Force in this mysterious universe that had made her what she was. Almost involuntarily she began to offer gratitude to Grigori for all he had done for her. At first, it was mixed with bitter recollections about times he had made her angry or sad. She even found herself punching the pillow to let off pent up frustration against him. Gradually the anger subsided and was replaced by a peaceful, sweet feeling and then a deep warm feeling of gratitude. She realized that she would not be where she was today had it not been for his help and even for the hardships he imposed on her. The feeling lasted for just a few minutes, then it faded, and she got up.

The following morning, Anya rose earlier than usual feeling more refreshed and enthusiastic than in months. She made some coffee and went over to her computer to read the news and check for email. When she walked into the office two hours later, her face was positively glowing. No one could miss the sudden change. When her partners arrived, she narrated her experience of the night before and then told them what had occurred when she awoke this morning. When she checked her email she had found a message from Grigori. "He is working in New York on a project to improve employee morale and productivity at Citibank. He said that he had heard about our work on PAIS and AIS and thought that our expertise was exactly what they need for the project. He has already spoken to his boss and attached a copy of that email. In it he refers to me as his most brilliant student, ever!" Anya struggled to suppress the huge smile that came on her face. "Anyway, I called Grigori an hour ago and we discussed the project. He asked me whether AIS could be accommodated within their budgetary allocation of five hundred thousand dollars. I said I was not sure, but I thought it might be!"

Her partners stared at Anya in amazement. The response of Grigori was almost too much to believe. Anya had changed her attitude to him and he had suddenly materialized out of the blue after a decade of silence. The simultaneity of Anya's change and Grigori's response were too great even for Ray to dismiss as

coincidence. They all agreed to begin work on development of AIS³ immediately. For the rest of the day, Anya kept reflecting back on what had occurred. In spite of her delight, she had a nagging feeling of discomfort which she could not immediately identify. It made her wonder, if changing a ten year old attitude to her professor could make such a difference, what would happen if she could overcome her reaction to Tony, Eric and Jean? The very idea of trying to change how she felt about them made her intensely uncomfortable. After all, it was they who needed to change, not her. So she quickly pushed the notion out of her mind.

Before the project for Citibank was completed, it had generated revenues of close to \$1.7 million and provided crucial inputs for AIS³. The most important modification they made in upgrading to the new version was incorporating algorithms to accommodate radical changes in personal attitude.

36. Re-materialization

Dan had been planning to explain to his partners about the problem with *The Book*, but when Anya related such wonderful news about Grigori, he did not have the heart to spoil it. He decided it could wait another day. He had another reason for not speaking. Something that had come up during the meeting made him feel there must be a solution to the problem.

The following morning Dan awoke from a dream at 3 am. An ageless woman appeared in the dream radiating light. She was resplendent yet very approachable, warm and compassionate. In the dream, Dan told her that she had come to him in a dream and told him something important, but he could not remember what it was. She started laughing. It was a gentle, kind laugh but he felt offended by it, as if she were making fun of him and he woke up.

Dan had read in an *Archive* article that if you lie very still after waking without moving or thinking, you can sometimes enter back into the world of the dream and work your way backwards from the end of the dream to beginning, like replaying a movie in reverse or retracing one's steps on a journey. He lay motionless in bed trying to recall the dream and the dream within the dream in which the woman had spoken. He strained to recall what it was she had told him, wondering why she had laughed and why he had been offended by her gentle cheerful laughter. She obviously meant to help, yet he felt almost resentful because she would not repeat her words. Then he thought to himself that perhaps his attitude was not right and it is not her fault that he forgot what she had told him. Perhaps the dream revealed something about him. Again he lapsed into a dreamy state for a while, then awoke again without feeling any closer to an answer about the dream or *The Book*.

He got up, made a cup of tea and sat down in his favorite chair to review the events of the previous day. He recalled Ray's harrowing endeavor and the explanation he had given to Ray about the event. He knew it sounded fantastic to link the shooting with Neil's attitude, but hadn't the book referred to life events as a mirror of our own attitudes? If Neil were really angry or jealous of Ray, was it necessary for him to know of Ray's presence in Chicago for his anger to express itself? Or was it enough that Ray thought of Neil, thought of approaching him and reconciling their differences? Did that contact in thought and feeling constitute a real contact between them? Of course, it sounded far-fetched. But 'Burger'? Life must really have a sense of humor to kill an innocent man named Burger right outside the bedroom door of another man named Berger. Could Neil's attitude really be that powerful?

Then he recalled again Vinay's narrative about Tate. That was also amazing. A simple change in attitude resulted in a tripling of profits. Assuming Tate told the truth about his profits, maybe he was understating the things he did to increase their business with that client. He insisted that his main action was psychological and apart from that he had simply accompanied his sales manager on two or three calls. Did those calls make the difference or was it his change of attitude? Dan could not say for sure.

But Anya's story was more difficult to discount. She had not taken any external action at all. She had simply changed her attitude to Grigori and offered gratitude to him. Dan had tried doing it himself on several occasions and found it almost impossible to generate a genuine feeling of gratitude. He could be mentally appreciative and thankful, but an emotion of gratitude proved elusive. But he could see on her face as she narrated her story that she had really felt it. And what a response! Incredible. After 10 years without contact, he calls the next morning and offers her a big contract. Simultaneity was a hard fact in all these instances. That only question was how to interpret or explain it. What he had said to Ray in the car about non-locality was only a logical argument to make the occurrence plausible to a scientific mind. If thoughts and emotions were forces with a power to act in life, there was no reason for them to be limited to the constraints of physical proximity required for physical forces to act. If thought travels in the physical sense at all, it must travel at the speed of light, so physical proximity cannot be a constraint. These were issues that lay altogether beyond the current reach of scientific knowledge. Yet, the modern mind still feels more comfortable with a scientific explanation, even if it is strictly speculative. It's another form of superstition, he thought with a chuckle, to which he was as susceptible as everyone else.

Tate's question seemed like a godsend. It pointed out a big gap in AIS, a flaw that would have surfaced sooner or later and challenged the basic premise that AIS is applicable to human accomplishment. Expert systems that apply to physical phenomena and management of technology don't need to concern themselves with psychological factors, but MAI had claimed its system works with people. Aren't people just complex bundles of opinions and attitudes? Maybe Ray was right that they were simply lucky on the Ireland project, because the economic development of Ireland had recently emerged as such an important factor, but hadn't AIS indicated that it was actually a change in social attitudes in Ireland, rather than a physical or economic fact, that made possible the breakthrough in the North? Attitude had emerged as the

factor even there, only they had not directly factored it into their model. Even in the case of their work at Accor, attitude had turned out to be important. It was only Dekker's receptive attitude that had made possible the study in the first place. Most CEOs would have given up without throwing good money after bad. Dekker said he hoped their report would change the attitude of his board of directors and major investors, and it had.

All these thoughts presented themselves to his mind successively and simultaneously. Everything pointed to one thing—attitude. His mind went back to the dream. Why couldn't he remember what the woman had said? Why did her laughter bother him? Could it be his own attitude that was the problem? He did not see how. Then again he thought about *The Book*. Could the disappearance of the writing in the book have anything to do with attitude? Suddenly he saw a connection. In the dream he was told something very important and did not remember it. Perhaps he had not paid sufficient attention or given it the importance it deserved. Only later he regretted the lapse and wanted the woman to repeat. He had missed a message in the dream. He was afraid of losing a message in the book. Could it be that he was not paying sufficient attention to the book either? Could the writing in the book be disappearing because he was not taking it seriously enough?

The more he thought about it, the more he felt it might be true. In the first few months after *The Book* had first fallen off the shelf, he had felt that it was an answer to the deepest aspiration of his heart and mind. It contained all the knowledge that he had been searching for and much more than he had believed possible. Until then, he had all but given up hope of finding really meaningful answers to his questions about personality, life and spirituality. Everything he read was interesting. Nothing was satisfying. Then *The Book* fell. Everything changed. He felt like a new person. Life felt like a new life. *The Book* gave a new direction to MAI, it gave birth to a product that had the potential to change the world—it had already proved that, at least to Dan's understanding. Had he been sufficiently grateful for what had come? Could that be the reason the writing was disappearing? In the initial months he did feel grateful to who or what he did not know—to the author certainly, to *The Book* itself, to life for bringing it to him. Then over time he became so immersed in the work, in applying the ideas, in AIS and the company, in raising money and answering questions. Gradually his focus had shifted from *The Book* to other things. It was always there in the background. He relied on it. He carried it wherever he went, both for safe keeping and because it gave him a sense of security. He depended on it, but he was no longer immersed in it. He had initially vowed to finish a first reading of the entire book in twenty-eight weeks, that's at a pace of two chapters a week. That would have been easy to do with any ordinary book, even a book of pure philosophy, but for this one he felt it was an ambitious goal. In practice, he never got past chapter 25 during the whole first year and since then he had only reread some of the earlier chapters and browsed some of the later ones. He did not even know what the rest of the book had to offer.

Could it be that the disappearance of the writing in the pages was merely an external expression of his own fading interest in the contents of the book? Yes. He still valued it very much as a possession, but did he sufficiently value the knowledge it was offering him? Perhaps not. Was he taking all the effort he was capable of to receive and comprehend its message? Clearly no, just like in the dream. The woman spoke, but he did not hear her or remember. The book sought him out and offered its knowledge, but he had not paid sufficient attention. His fading interest was reflected in the fading clarity of the text. It was as simple as that and suddenly seemed obvious and self-evident. This line of thought made sense to him. It also felt right. It felt like it was true.

But how could he explain to himself what happened the previous Sunday morning when he tried to photocopy the text? Here he was clearly paying attention to the book and yet the more attention he gave it, the faster it seemed to fade. There had to be another reason. Then it struck him. When he first found *The Book*, he was seeking knowledge. When he first read it, he was paying attention to the knowledge in *The Book*. He had wanted to learn. On Sunday he was simply paying attention to *The Book* itself. He did not want to lose it. He wanted to possess it securely. He wanted to ensure that its knowledge would always be available to him. It was not the loss of knowledge he had felt on Sunday, it was the loss of security. He had come to feel dependent on the book as a sacred object. It was as though he had made the book into a religion and worshipped the form of it as an idol, instead of its contents, which were its real spirit and divinity. Everything began to make sense. Ray, Vinay, Anya and he were all presented with the same lesson, each in their own lives—the importance of attitude.

Dan decided on an approach to test his hypothesis. If ignoring or trying to possess the book made it fade, perhaps there was something that would make the text become brighter. He decided to give the book more serious attention. Instead of thinking or worrying about losing it, he decided to start relating to the knowledge in the book as seriously as he had when it first arrived. He started immediately by reading Chapter 26 and completed it in one sitting. He found the reading far easier than he remembered and the ideas

far clearer, the way it had been when he read it the very first time. He even began to wonder why studying *The Book* had become such a labor. He was energized by the reading and was filled with a rich warmth. He felt more alive than he had in many months. When he got to the last page of the chapter, he suddenly burst out laughing. The page began with the following words:

There is a consciousness in all things, even the most material, which responds to conscious attention.

Including *The Book*. He suddenly noticed that the text on the page seemed easier to read than when we began reading earlier in the morning. It seemed brighter. He flipped back to the beginning of the chapter and then back to earlier pages. All the pages had been restored to their original brightness.

37. Katrina

*On this dumb bosom of the ambiguous earth,
Here where one knows not even the step in front
And Truth has her throne on the shadowy back of doubt...*

Sri Aurobindo's *Savitri*

If simultaneity of occurrence signifies relationship, then the events of August 2005 provided clear indications of what was to come. News became progressively worse as the month advanced. On August 1, King Fahd of Saudi Arabia died. On the second, Air France Flight 358 overshot the runway in Toronto and burst into flames, but with no loss of life. On the sixth, a flight from Italy to Tunisia crashed into the Mediterranean killing fourteen people. On the fourteenth, one hundred twenty-one people died when a Helios Airways flight crashed into a mountain. Two days later, one hundred fifty-two passengers died when a West Caribbean Airways flight crashed into another mountain in Venezuela. The following day, a terrorist bomb explosion rocked Bangladesh. On the twenty-second, a meteorite crash landed in Zimbabwe. And the following day Hurricane Katrina began its devastating and deadly march across Southern Florida and along the Gulf Coast through Mississippi and Alabama en route to New Orleans, where it landed six days later, in what became the costliest and one of the deadliest hurricanes in American history. By the time it departed, it had wrought more than eighty-one billion dollars in damage and killed eighteen hundred thirty-six people. Subsequent events showed that the movement was not yet spent, when a week later a Mandala Airlines plane crashed in Indonesia killing one hundred seventeen more people. And on October fourth, Hurricane Stan hit Mexico and Central America, killing another sixteen hundred twenty. Before the end of the month, 2005 had experienced a record setting thirteen hurricanes.

Ray studied such events, tried to make sense of the patterns, and concluded that he was becoming cynical, as his father had after Vietnam and Watergate. He regarded Katrina as a quintessential example of the power of opinion to conceal facts. For long before and after the event, the American public remained secure in the knowledge that its own consumption behavior was unconnected with the fortuitous string of recent environmental catastrophes. They had been assured of that by what the New York Times ungenerously termed "President Bush's incorrigible stubbornness" and a continuous stream of White House disinformation based on carefully edited EPA reports asserting that the apparent weather anomalies did not lend any credence to the never-ending series of suspect scientific studies documenting the reality of global warming. In plain English, the American people were innocent and there was nothing to worry about. The December 2004 Tsunami that killed two hundred twenty-five thousand people had been rightly disregarded as a prior anomaly—after all, even singularities repeat occasionally—and, anyway, it was too far from home to be a cause for concern, except for those rare few who considered earth as their home. The US maintained its unchallenged position as the world's leading oil consumer, with a twenty-four percent market share, a consistent two percent annual growth in oil consumption, and the lowest average vehicle fuel efficiency of any country in the world. There would be time enough to call for restraint after energy consumption in China and India exceeded US levels.

Ray was relieved to observe that not everyone was rational enough to be convinced by the government's assurances. A wholesale left-wing conspiracy spread like cancer through the country's scientific institutions in 2003 when the American Geophysical Union, the American Institute of Physics, the American Astronomical Society and The American Meteorological Society—for all they know—joined hands in a blatant attempt to challenge the President's credentials as a climatologist. The ensuing breakdown in traditional family values was further demonstrated the following year when NASA's top climate expert, James Hansen, had the presumption to publicly accuse the White House of tampering with his reports and spreading misinformation a full year before Katrina. Conservative Arnold Schwarzenegger lost his nerve and became unjustifiably distressed by premonitions of a rising sea level along California's thousand mile long coast line. Even the Pentagon seemed to have been carried away by alarmist frenzy. Six months before Katrina, the media got hold of a secret Pentagon report, suppressed by US defense chiefs, warning that "major European cities will be sunk beneath rising seas as Britain is plunged into a 'Siberian' climate by 2020. Nuclear conflict, mega-droughts, famine and widespread rioting will erupt across the world. Climate change over the next twenty years could result in a global catastrophe costing millions of lives in wars and natural disasters." According to the usually sober *Manchester Guardian*, which should have known better, the document predicted that abrupt climate change could bring the planet to the edge of anarchy, as countries develop a nuclear threat to defend and secure dwindling food, water and energy supplies. Fortunately, the US public knew better than to be swayed by such disturbing rumors during the 2004 elections, clearly demonstrating that AIS²'s rational approach to decision-making had little to do with the way candidates are

elected. Eventually even the National Academy of Sciences tried to override the constitutional safeguards that entitle the Administration to decide what is scientifically true for the American people, but at least they had the decency to wait until after the elections. But even truth cannot hold out forever against a continuous barrage of misinformation. During the first four months of 2005 SUV sales in America declined nineteen percent as panic finally drowned out the Government's voice of reason.

The people at MAI probably felt as secure as everyone else in America. The company's prospects had never looked brighter. Its revenues and employee base were growing rapidly. While the projects for the Courke Committee and Accor required little direct involvement of staff, other than for product development, the Citibank contract that came in early April and the second contract from NASA to develop a version of PAIS for ground-based personnel necessitated a significant expansion. This was compounded by the fact that both AIS¹ and AIS² had become outdated almost as soon as they were completed, placing enormous pressure on Anya's R&D team to accelerate development of new versions. From ground zero in early 2004, \$7.5 million in contracts had come in during the following eighteen months and total employment at MAI rose from nineteen in August 2004 to seventy-six one year later. In addition an increasing volume of work was subcontracted to software companies in Bangalore and Moscow. Even this was not enough to handle the increased workload, for development of AIS³ required a much broader set of skills and a deeper knowledge base than previous versions. This trend may not have been so disturbing, if the company had started with a sufficient capital base to support new product development or had maintained a steady growth in business in subsequent months. But so much attention was focused internally on staffing up and rapidly developing a better, more marketable product that little effort was made to maintain a flow of fresh contracts, which up until then had been coming in on their own. Ray recalled raising a question at one point and recollected that he had been too readily satisfied with glib, reassuring answers, like everyone else in the world.

Those attuned to reading the auguries of life might have known how to read global and national events during this period and interpret their significance for MAI, but that would have required knowledge and skills the partners did not possess. So like everyone else, they had to take what life offered blindly, one day at a time. As environmentalists oft said of American politicians and the voting public, Ray believed that the partners should have seen what was coming. Everything is so obvious in retrospect that almost anyone can become a historian. Those with true foresight are more rare. The fact that the partners were in the process of creating a revolutionary new product, the likes of which the world had never seen before, counted for nothing with pragmatic executives who always kept their sights firmly leveled on physical reality. But how many of them ever created a new world? Not that the partners' made excuses for their oversight, far from it.

Once their situation became clear, they all reproached themselves severely and mercilessly for their foolishness. Dan had never even mentioned the disappearing pages to his partners, for fear of raising unnecessary controversy and skepticism at a time when they all needed faith to face a challenging future. Although he redoubled his attention to *The Book*, rising an hour earlier and retiring an hour later every night and spending every spare moment on weekends trying to plumb its secrets, he never made excuses for not attending to his responsibilities at MAI. But the fact was that in directing more attention to *The Book*, he had failed to ensure that someone else at MAI was compensating for his private preoccupation.

All the four partners had prior experience managing larger teams than they employed at MAI, but that was under circumstances when they did not have so many other responsibilities. Here their highest priority was creating a new product, which was a 24 x 7 task all by itself. Recruiting proved to be extremely tough, because most of the people they interviewed with experience in AI had an orientation that simply did not match their requirements. They tried retraining some experienced people, but most of those left within a few months. Their only choice was to recruit raw graduates and train them from scratch. Ray and Anya took up that responsibility, but it began to tell on their health—both physical and psychological. Ray complained of incessant back pain, Anya of recurring headaches. Both became more irritable and short-tempered with staff, subcontractors, the other partners, and occasionally even with a client. Their problems were further compounded by the fact that they received at least twenty relevant inquiries a month from a wide range of potential clients—governments, companies, universities, research institutes, several mainframe manufacturers, video game producers, and even several college and professional football teams. Vinay and his small marketing team worked tirelessly to field questions and assess opportunities, but they still had to come back frequently to the design team for fresh answers. Ray urged that the company simply stop responding to further inquiries until it had completed design of AIS³, but Vinay knew that a steady stream of new business was essential for cash flow. Unfortunately it did not come.

All this was bad enough, but on October 7 it got worse. Dan later wondered about the relationship between the events of that day. First thing in the morning he had stopped at a gas station to refuel on his way to work. While he was inside paying the bill, a short man with a beak nose approached his car, opened the

right front door and reached in. Dan was unaware of what was going on until he heard the voice of the cashier shouting over the loud speaker for the man to step away from the light blue Toyota Prius at the pump. Dan looked up just in time to see the man lift his head and look his way, before turning and running away from the station. In panic, Dan rushed outside and ran over to his car. He looked in the window and saw his briefcase lying on the passenger seat where he had left it, but with one of the clasps open. Holding his breath, he opened the door, bent over, unsnapped the other clasp and opened the briefcase. *The Book* was still there! He breathed again, then quickly stood up and looked in the direction where the man had run off. He was gone. Grabbing the briefcase, he went back inside and profusely thanked Frank, the attendant, for his alertness and quick action. "Must be something valuable in there," Frank said, nodding at the briefcase in Dan's hand, "judging from the fright I saw on your face."

Dan smiled with a great sense of relief. "Not just valuable, Frank, invaluable and irreplaceable. I will never forget the help you have given me today. Once again, thank you." As he got back in his car and headed for the office, Dan tried to recall the face of the man who had reached into his car. For some reason, he thought that face was familiar, but he could not place where he had seen it before. Obviously whoever he was, he was trying to steal something. Why open the bag and not just take it? he wondered. Perhaps it would have been too visible. Dan was surprised that a man of that age and description would be stealing. He could understand a youngster trying to make a fast buck, but this did not seem like the sport for a man like that. The only other possibility was that the man was specifically after *The Book*. But the very thought was ridiculous and Dan quickly dismissed it. No one even knew *The Book* existed, let alone that Dan had it. A fleeting recollection came to mind that he had once or twice suspected that his apartment had been searched, but he dismissed that too. It was too fantastic to think about. Whatever the explanation, Dan thanked heaven that Frank had observed the man in time to prevent a catastrophe and he vowed to be even more careful with *The Book* than he already was.

With his mind filled by the drama at the gas station, Dan arrived at work and did not immediately notice Randy Stephens' financial report for the first nine months of 2005 sitting on the corner of his desk. When he did notice it and open the cover, the first sentence of Randy's note made him completely forget the near loss of *The Book*. Randy projected that the company would run out of money by the end of the month, unless new business came in or overheads were drastically reduced now.

Dan immediately called for a meeting of the partners so that Randy could present his report to the Group. As she entered the conference room, Anya noticed that Dan looked pale and worried. She bent over to inquire how he was feeling. When Dan explained the reason for the meeting, Anya's immediately commented, "I thought that with Citibank and NASA-2, our revenues were at an all-time high."

Randy replied, "That's true. There is more money coming in than ever before. But there is also more money going out. And the amount going out is substantially greater than the amount coming in. I should have alerted you earlier, but I did not realize how quickly we were staffing up until I saw the quarterly figures yesterday." He then passed around a financial summary showing that monthly overheads, including payments to subcontractors, were running in excess of eight hundred thousand dollars, while income was only around five hundred thousand dollars per month. "We have been living on advances for the past six months and now they are exhausted."

Drumming his fingers nervously, Ray spoke next. "This whole business is getting out of hand. I was planning to ask for fifteen additional engineers this month and a full-time recruiter to interview candidates. Now you say we don't even have money to meet our existing payroll."

Vinay asked Randy for suggestions, but Randy didn't seem to have any good answers. He suggested that they slow down development of the new product and try to sell AIS², but Anya explained that most of the development work on AIS³ was already complete and it did not make sense to stop work on it at the penultimate step. Besides, Vinay insisted, they could not generate business for a product they all knew contained a basic design flaw. Then Vinay reviewed the list of present and potential clients to see where he might be able to raise some additional advances. He thought it might be sufficient to compensate the deficit for another four weeks, but not more. Then they reviewed the list of subcontractors to see whether they could drop any of them or at least reduce outsourcing for a while, but they could not arrive at a consensus on any plan. The meeting went on for three more hours, but they seemed to get no closer to a solution. Finally Dan suggested they adjourn and meet again the following morning at 9 am.

Returning home late that night, Dan's mind was so full of financial matters that he had little energy or concentration left for *The Book*. However, he had resolved to invest a minimum of two or three hours a day in studying it. After this morning's incident, he was more determined than ever to fulfill that commitment. He fell asleep in his chair after reading just a few pages, then rose an hour earlier than usual and resumed reading. Sometimes he read chapters in succession. Sometimes he just opened the book at

random and started reading or flipped around to a chapter that caught his interest. This morning something made him turn to the very last chapter of the book. Perhaps subconsciously, he felt that they were approaching the end of something. Randy's announcement had certainly made it sound that way. Dan couldn't suppress the question that kept popping back in his head. Was it possible for a rapidly growing company with enormous potential business, a revolutionary product, huge multinational customers and a long line of prospects to go out of business? He was sure he knew the answer to that question and he did not like it. Again he reprimanded himself for not being more alert and attentive to the financial situation. It was his responsibility and he had dropped the ball.

Pushing these thoughts out of his mind he started reading the chapter. When he reached page 1018, his attention was caught by one particular sentence:

Life evolves through growth of consciousness, consciousness evolves through greater organization."

He read and reread the statement trying to make sense of it. Science already knew that the evolution of life forms had led to an evolution of consciousness. Why hadn't the author phrased the first part of the sentence in that manner? Dan wondered whether he was trying to express a different idea. The second part of the sentence was even less clear. What did it mean to say that consciousness evolves by organization, unless it was simply another way of stating that the development of a more complex nervous system led to the evolution of more conscious life forms. Dan had found in the past that when he could not decipher the abstract meaning of a thought in *The Book*, he often found it helpful to look for an analogy or example in his everyday life. He tried applying the statement to the situation at MAI. The company was alive. He reasoned that MAI's growth was being propelled by a rapid growth of consciousness, i.e. by their growing awareness of the potential of AIS based on the knowledge derived from *The Book*. AIS was expanding their awareness of technological possibilities and the market was becoming increasingly aware of the company and its products. But what about organization? Perhaps organization was their problem. All four of them had worked in much larger organizations, but none of them had ever built an organization from scratch. Dan suddenly looked up and noticed it was past 8 am. He was already running late for their morning meeting. He closed the book, showered and grabbed a breakfast roll as he rushed out the door.

As he drove out of the underground garage, his eyes fell on the *Apartment for Rent* sign on the lawn across the street, but he thought no more of it.

When Dan arrived at the office, Randy, Vinay and Anya were already sitting in the conference room. He greeted them and asked about Ray. Anya said Ray was in his office and would join them in a few minutes. It seems he had been here all night working on something. Fifteen minutes later Ray walked in with his notebook computer in hand, red-eyed and exhausted. When the meeting began Ray distributed an analysis of MAI conducted on the prototype version of AIS³. As expected, it indicated the company's precarious and untenable position based on a product with known design flaws, i.e. AIS², and the enormous market potential for the same company once it was completed, i.e. AIS³, itself. According to current estimates they were still at least three months away from launch time, which left a two month cash deficit of approximately two million dollars. "That leaves us only a few options," Ray concluded. "Either we go out and raise a few million dollars immediately or we market the existing product we know is defective or we drastically reduce investment in AIS³ by cutting back on staff and subcontracting fees, which might delay product launch by an additional three months or more."

Vinay shook his head in frustration. He was a born fighter and the idea of retreat was anathema to him. Besides, Vinay lived on the adrenalin of the new and exciting. To stop now with a product they all knew was still half-baked—even if it was better than anything else on the market—was galling to him. Anya sat silently staring at the screen. Randy intervened to say he supported those recommendations.

Dan waited to see if anyone else had something to say, then he said. "It seems to me that our analysis is faulty. It's still missing a critical element. In addition to all the objective variables incorporated in competing products, we have factored in the subjective power of decisions, feelings, opinions, perceptions and attitudes. But we have still left something out—organization." He then pulled out the book and read the passage he had found a few hours earlier. After he finished, everyone remained silent waiting for him to elaborate. He decided not to. Instead he proposed that they take one more week to analyze their situation. He said he wanted to work with Anya on an enhancement to AIS³. "Ray, I'd love you to join us but you are already exhausted and over stressed from the pressure of the last few weeks. Please go home and get some rest. Come back when you feel fresh." They agreed to meet again at the same time next Thursday and take a decision on how to proceed. Meanwhile, Ray said he would speak with Bill Gershwin about the possibility of a bridge loan and Randy agreed to start exploring other funding options. Anya and Vinay both agreed to delegate some of their present work so they could support Dan's effort.

38. The Lever

Later that afternoon, Dan asked Lauren to come into his office and offered her the opportunity to invest in MAI. He explained their financial position in vivid detail and repeated his reasons for not accepting her earlier offer. He said that despite the difficult situation, there was absolutely no possibility of MAI failing as far as he was concerned. He believed they could find money elsewhere, but in appreciation for her earlier gesture when they had no other options, he wanted to extend the first opportunity to her. He offered to accept any money she was willing to invest either as a loan or in exchange for shares. Lauren listened carefully, asked for five minutes to consult her brother Greg and then told him they were willing to invest their entire combined savings of four hundred fifty thousand dollars in exchange for a five percent share in MAI's equity. The entire transaction took twenty-five minutes and provided MAI with sufficient cash to operate for an additional three weeks. Dan marveled at the mysterious power of Lauren's unpretentious trust and goodwill-attitude was so powerful. Disregarding Dan's advice, Ray remained at the office and immediately contacted Bill Gershwin, who readily agreed to put up an additional nine hundred thousand dollars, half as loan and half as equity investment. This was the second time Bill had readily responded when they needed him. These two simple actions expressed what Dan had already understood when he first read Randy's financial report. The report accurately depicted the company's material resources, but it in no way reflected the reality of their situation-another illustration that intangible resources were the real source of wealth and power. By the end of the day, MAI was ensured of survival at least into the new year.

Dan left the office early and went home to resume his study of *The Book*. He completed the last chapter and then began searching the Internet for related *Archive* material on the theme of organization. At first he had almost mistaken *The Book's* statements on the subject for an exotic expression of commonplace truths, but a careful rereading convinced him that the author was trying to communicate something beyond conventional thought. Dan had studied enough organization theory from the perspective of both engineering and business development to be familiar with contemporary ideas on the subject. The principle of organization was normally conceived of as a systematic classification or arrangement of elements-ideas, information, people, objects, etc.-that enhanced clarity and functional efficiency, efficiency being the optimal utilization of available energy. *The Book* and *Archives* took a radically different view. They identified the essence of organization as the capacity to multiply energy. Instead of regarding organization as a conservative principle to eliminate waste, they regarded it as a creative principle.

Dan was particularly intrigued by a reference in the *Archives* to the concept of mechanical advantage which he had studied in freshman engineering. Mechanical advantage is the principle used to explain how a simple mechanism such as a lever or a pulley multiplies the force applied to it. An ordinary crowbar and a fulcrum mysteriously multiply the force of the human arm, as expressed by Archimedes in his famous dictum, "Give me a lever long enough and a place to stand and I will move the earth." Every student of physics had learned the formula for mechanical advantage and, perhaps, like Dan, had mistaken a formula for an explanation. The *Archive* article asked an apparently simple and innocent question, "Where does the added force of the lever come from?" If energy is conserved, what is it that enables a one hundred twenty pound woman to jack up an eight thousand pound SUV with one hand? Where does the additional energy come from or how is such a small amount of energy transformed into such a great amount of force? Dan knew the formula, but he could not answer these questions. The answer, according to the article, was the creative power of organization. The enhancement of force is not generated by additional physical inputs. It is achieved by applying a higher mental principle to a physical system. A lever is an ingenious organizational arrangement of objects to produce an extraordinary effect. The power issues from the arrangement which is a product of mind or consciousness, not matter. Insubstantial, intangible consciousness multiplies material force by application of an idea, an organizing principle.

The most fascinating part of the article was an analysis of the formula for mechanical advantage. As Archimedes had implied, it suggested that the potential force multiplier could be magnified infinitely. In the formula, the force multiplier is equal to the effort-distance divided by the resistance-distance, the distance over which an effort is applied divided by the distance over which that effort is resisted. Restating the formula in another manner, the article came to an astonishing, but counter-intuitive, conclusion. The smaller the act or issue to which conscious effort is applied (resistance distance), the greater the potential multiplier. Common sense tells us that if you want to accomplish great things, you must act over a great area, whereas the article argued that if you want to multiply the available force to the maximum extent possible, concentrate on applying it to the smallest infinitesimal acts. The greater the force applied to the smaller the act, the greater the creation or multiplication of force. If taken literally, it would mean that every small, apparently insignificant act is charged with infinite potential. Lauren's simple initiative of dropping by his apartment to thank him for the bonus had alerted him to the disappearance of *The Book*. The gas

station attendant's simple act of conscious alertness had prevented theft of *The Book*. Bill Tate's simple question had become the creative impetus for AIS³. These were all instances of infinitesimal, unplanned actions of immense significance. What then would be the result, Dan pondered, of consciously organizing many small everyday acts to elevate them to this level of intensity and perfection? The *Archives* summed up the principle this way:

Organization makes it possible to apply the greatest possible force to each minute aspect of work, thereby releasing infinite energy from the infinitesimal. Organization is a lever that can transform the world.

Having explained the principle, the article went on to illustrate the marvels of organization in a manner that was thrilling to read. It explained language as an organization of apparently meaningless sounds. Each individual sound was assigned a meaning related to its relative positioning within a structured sequence of words governed by precise rules. All the works of human civilization from the family to world government, from the simplest forms of communication to the exotic languages of mathematics, physics and computing are the result of infinitesimal differences in meaning associated with infinitesimal variations in sound, diction, sequence and grammatical structure. According to the Old Testament, God created the world with one word. According to Hinduism, the sound of AUM manifested as the universe.

From there, the article traced the emergence of every conceivable variety of physical, social and mental organization—the mental classification of elements and life forms; the structured grouping of human beings from families, tribes and clans to races, religions and nationalities; the orderly arrangement of human activities, as in warfare, agriculture, trade, manufacturing, governance, education and the arts; the organization of information and knowledge within a plethora of academic disciplines and specializations. The list was endless and inexhaustible. All the creative power of humanity was simultaneously elevated to this one grandiose principle and reduced to this simplest of formulations. All life, certainly all human life, progressed by continuously expanding its conscious awareness of the world in and around it and continuously refining and elevating the organization of that consciousness. The greater the awareness, the better organized was the lever for all human progress. The whole world was a product of mechanical advantage. But it was not the mechanical advantage of an inert material force in an unconscious universe. It was the multiplication of the force of consciousness by the power of organization. Viewed in these terms, it became evident that there was no inherent limit to the multiplication of that force.

Gradually Dan began to perceive the immense practical importance of this view. Multiplication of force did not depend essentially on the resources available. It depended on the intensity of the consciousness and the organizing principle applied. By applying the highest possible organizing principles with the widest possible awareness and the greatest possible intensity of concentration to each and every aspect of the work at hand, theoretically MAI should be able to multiply its effective force and creative power hundreds or thousands of times. At first the very notion sounded chimerical, until Dan recalled the fact that it had already been done by countless people in the past. By this principle, a simple railway station master named Richard Sears had founded the largest retail company in the entire world, a position it retained for more than seven decades. By the same principle, a young couple from Utah, who established a drive-in restaurant in Washington DC in 1929, created the foundations for the fifteen billion dollar Marriott Corporation, which now has more than one hundred forty-three thousand employees and operates in sixty-seven countries. Where did the force come from to so greatly multiply the energy and creativity of these individuals in space and time? It came from organization.

Other questions arose in Dan's mind that sent him back to the *Archives* looking for further insights. If organization has the power to release infinite energy, how does that energy express itself? A mechanical lever increases power in only one dimension, the dimension of physical force applied to an object; but a human organization multiplies accomplishment in multiple dimensions. In addition to accomplishing more work with less effort, it increases speed, productivity, expands the range of activities, elevates quality, and enhances complexity. It enables achievements that are not possible at all without organization, in which case the gain in efficiency is immeasurable since the alternative is zero. One person cannot lift a grand piano, play baseball or perform Beethoven's Ninth by himself, no matter how long or hard he tries.

What is the mechanism for this multi-dimensional accomplishment? A physical organization such as a pulley consists of physical parts—wheels, rope and flanges—cleverly arranged in space. It derives power from its physical structure. A human organization consists of people relating to one another and to other organizations. Its structure is subtle and intangible. It derives its power for multiplication from an invisible hierarchy, specialization of work, distribution of authority, repeating sequences of action, predefined goals, rules, and policies. Since none of these elements exist in a physical sense, none of them are subject to fixed limits. Structures, systems, policies, rules could always be enhanced and refined by higher principles,

creative ideas, knowledge, information, commitment and determination, positive attitudes, i.e. by a more intense application of consciousness. Therefore, both the inputs and the outputs of organization are inherently unlimited.

The more he contemplated the true nature and content of organization, the more remarkable it appeared. The Japanese tea ceremony is an elaborate and intricate, precisely organized ritualistic behavior designed to honor the uniqueness of the people and the moment. As Collins discovered when he proposed to Elizabeth Bennet, the simple act of matrimonial engagement is an organized ritual fraught with subtleties too deep for his provincial comprehension—you simply do not tell your intended bride that she may never receive another marriage offer!—yet men and women have died rather than break the vows exchanged in such a moment. A promise, a mere consent of will verbally expressed, was an organization of honor so highly regarded among true gentlemen of medieval Europe that, according to Alexandre Dumas, Louis XIV's famous Finance Minister, Fouquet, consented to relinquish his status, wealth and life rather than go back on the word given to a rogue bent on destroying his career. What, after all, is a contract, but a mere piece of paper with ink smudges upon it, yet tiny pieces of smudged paper have founded companies and countries, started and ended wars, created and destroyed untold wealth. How often a mere show of hands or counting of votes had decided the fate of nations. By one such brief organizational mechanism involving a bible, an oath and the Chief Justice of the US Supreme Court, an ordinary man is pronounced leader of the free world and the one who formerly possessed that power leaves the podium a mere ordinary citizen. An hour before, he could have been arrested for speeding. An hour later he can speed or retard the progress of all humanity. These are a few of the simplest of social machines—the levers and pulleys by which the endless progress of human civilization has advanced. Such are the hundreds or thousands of acts, wrought with hidden significance and power that make up every facet of human existence. Of such devices MAI too was constituted, if only he could discover the means to release their hidden power, if only he could communicate this vision to others so that they too saw the potential. Dan's thought kept expanding in multiple directions, until it consumed all the available energy of his mind and he faded off into peaceful, refreshing sleep.

39. Reinventing MAI

On Monday October 17, the eighty-one employees of MAI assembled together as a group for the very first time at the old Claremont Resort Hotel on Tunnel Road at the foot of the Berkeley Hills. It was more than Randy wanted to spend, but Dan left the arrangements to Vinay and Anya, both of whom were adamant about communicating the right message to staff. Though most employees knew nothing about the company's real financial situation, it was not difficult to guess there was a problem when new hiring was abruptly stopped and outsourcing contacts were cut back. But everyone was so confident and excited about AIS³, it never occurred to people that there could be a problem with the company. People within the company believed MAI was coming of age, precisely at the moment when it faced its greatest challenge to date. The meeting had originally been planned for the fourteenth, but had to be postponed because of Ray's health. He had gone home on the eighth complaining of fever and fatigue and ended up in the hospital with a severe intestinal virus. Dan was glad to have more time to prepare for the meeting with Anya and Vinay. During the interim period, Randy went around with a worried look on his face.

Vinay stood up and welcomed the whole group in a tone of voice that was unusually serious for a person who seemed to be always smiling. He spoke briefly about the fact that the company was at a crucial juncture. Important decisions had to be made and management wanted the entire company to be involved. He warned that the meeting would be long, but urged everyone to take every word seriously, because it would serve as the basis for taking decisions that would determine the future of AIS, MAI and its employees. He said the reason for this unprecedented meeting was the need to arrive at a consensus that everyone understood and would support. Then he joked for a minute about the fact that everyone knew he was a movie buff and so he could not resist throwing in a little entertainment along with the serious message. Then the lights were dimmed and a series of film clips were projected onto a large screen. Vinay explained the context for each clip as it began.

The first was a scene from *2001: A Space Odyssey* depicting some early semi-humanoid race in prehistoric times in the process of acquiring the capacity for speech. As these apelike beings jumped up and down, gesturing wildly to one another and grunting in a variety of tones and pitches, a few employees thought they recognized some of the apes and peals of laughter rippled through the meeting hall. One ape accidentally discovered how to fashion a bone into a club. Then the tribe stumbled on some sounds which conveyed a common meaning to all. Suddenly this wild band, more animal than human, was armed and capable of working in concert with one another to hunt or wage war against other tribes.

The clip ended and a second one began. It was the opening scene from the movie *Gladiator* with Russell Crowe. The Roman Emperor Marcus Aurelius and his army were about to commence their final campaign for the pacification and unification of Western Europe against a barbarian German tribe, the last opposition to Roman rule. The Roman army was arrayed on a hill side in orderly fashion with archers, artillery, infantry, and cavalry all in position. The Emperor looked down at the scene from a safe distance. General Maximus was in direct command. The German hordes emerged from the forest by the thousands, mean, angry, huge, beastly men shouting and gesturing wildly and raring for battle. The Roman troops stood in silence, attentive but immobile. At a shout, the barbarians launched a thousand arrows into the air. In response to a command, the Roman troops closed ranks, lifted their shields and created an impenetrable barrier, so that only a few stray arrows could slip through the crevices and hit their targets. On command, a Roman soldier placed a lighted torch in a dirt channel that ran in a line in front of the first row of Roman archers. As the fire spread along the channel, the archers dipped their arrows into it and raised their bows strung with flaming arrowheads. On another command, a thousand lighted arrows filled the sky and sought their mark among the German hordes. Most of them hit. Then mayhem broke loose. The Germans charged en masse. The Roman artillery started lobbing fireballs into the enemy ranks. The Roman infantry descended the hill in orderly fashion to meet the attack. As they approached each other, General Maximus launched a cavalry attack, descending from the opposite hill through the forest to come up on the German rear. Despite their enormous size and personal bravery, the German hordes were crushed between the two walls of the Roman advance and quickly annihilated. The last opposition to *Pax Romania* had been defeated.

The third clip was a short excerpt from the 1934 movie version of Alexandre Dumas' *The Count of Monte Cristo*. Edmond Dantes, in the guise of The Count, appears before Danglars, the mastermind behind his fourteen year imprisonment in the Chateau d'If, who had since become a highly respected banker in Paris. The Count presents Danglars with two bills drawn on his bankers in Rome totaling one million francs. Danglars is startled by the size of the drafts, equivalent perhaps to more than ten percent of his bank's total deposits. But eager to gain the clientele of such a fabulously wealthy client, he opens an account for that amount in the Count's name. A mere piece of paper places the wealth of Paris at the Count's disposal.

The last clip was a two minute extract from the Sean Connery and Catherine Zeta Jones movie *Entrapment*. The two thieves break into the Bank of International Settlements office in Kuala Lumpur just before midnight on New Years Eve 1999 in order to steal eight billion dollars during the resetting of the computer clocks at the start of a new millennium. When they finally reach the inner vault, Connery looks around at the wall of computers and asks Jones "This is it? Whatever happened to money? That's why I don't use banks any more. There used to be bars of gold and safe deposit boxes. Where is the good old fashion loot?" His partner points to the computer and replies, "The loot, my dear, is right in there."

Vinay signaled for the lights, stood up and asked a question: "What do these clips have in common with each other and with MAI today?" There was some mumbling and laughter. Someone joked that management was planning a major bank heist. As Vinay looked around the room, he saw puzzled looks on the faces of many bright and normally opinionated people. He then suggested they examine the clips one by one and report what they had observed. Several hands shot up with ready answers. The ape-men discovered tools and language, which enabled them to dominate over rival groups. The Romans' exhibited a high degree of organizational sophistication. The episode with the Count depicted a period in which money and banking had developed sufficiently for massive international transactions backed by trust in reputed institutions and a signature on a piece of paper. Connery's surprise at the shift to monetary values represented by digital numbers in a bank account brought home the extent to which our notions of money and wealth had changed in the five centuries since the birth of modern banking. These and similar points were identified, but when it came to the linkage between all these elements or their relevance to MAI and AIS, no one seemed to have a clue.

Finally, Dan stood up and addressed the group. He thanked everyone for their patient participation, then assured them that this was neither a test nor a riddle. He could not find fault with anyone for not seeing a more basic message linking the clips to each other or to the company, because for months it had been staring him in the face and he had missed it himself. Then he projected the statement from *The Book* on the screen without mentioning its source:

Life evolves through growth of consciousness, even as consciousness evolves through greater organization.

He waited while everyone read it. A few minutes later, Jean La Brec waved his hand and stood up to speak: "The ape-men became conscious of the potential of tools. You could even say that the bone club reflects an organization of their consciousness." Several others murmured dissent, but Jean continued: "When a man combined the strength of his arm with the hardness and length of the bone club, he was able to leverage that strength better to accomplish his objective—in this case to kill his enemy or prey. It's a form of simple machine that multiplies physical force by a specialized physical arrangement. It's a simple form of organization, but very powerful." Dan marveled at Jean's perception. His words were nearly identical to Dan's own thoughts, even the examples were similar. It was as if Jean had been listening in on his thought processes for the past one week. What had taken him months to comprehend was grasped spontaneously by this irritating engineer whom Anya was always wanting to fire. The statement from *The Book* had helped Jean link the clips in his mind just as it had helped Dan piece together unconnected strands of his recent experience. It dramatically demonstrated to him the power of an abstract principle rightly understood and applied. That was what he had been trying to do for the past twenty months with the principles he found in *The Book*. He was glad to hear the words coming from someone else.

Jean looked around and saw people nodding, then continued. "First tools, then language which is a much more sophisticated type of organization. The tool is physical. Language is social. It's a structure of sounds that enables people to communicate far more effectively than they could through gestures and grunts. It involves acceptance of common standards—this sound means the same thing to all of us. *2001: A Space Odyssey* shows early man discovering the power of organization. At this stage both language and tools formed parts of a primitive organization of society in which the strongest man dominated over the others, led the group and killed any opposition—kind of like Anya does when she gets angry." There was a burst of laughter in the room and everyone looked over at Anya. To Dan's surprise, she seemed to be enjoying herself. In fact, Anya was full of admiration when she saw her erstwhile enemy performing such a constructive role. The man was really brilliant, she thought.

"*Gladiator* conveys the same message. The Germanic tribes are brave, furious, dreaded warriors desperately fighting for their homeland, their families and their very survival as a nation, but they are no match for the Roman army—even an army of mercenaries paid in gold—because the Romans have an advanced organization. That brief clip reveals evidence of forethought, planning, strategy, tactic, structure, system, signal, standardization in everything they do. These physically magnificent tribals are helpless before the power of organization. Note how the tools have become more sophisticated, the language has

become more complex to express more complex thought processes, and the idea of leadership has changed markedly. Now it's the Emperor who leads by virtue of divine or hereditary right seconded by his greatest military commander and loyal, battle-proven officers. The physically strong man is way down the line leading the charge on the front line, like the chief of the barbarian tribe who leads his men into battle."

Jean paused for encouragement and received hoots and rounds of applause from many of his co-workers. But Anya observed that Eric Green was not among those who appreciated Jean's performance. With nods of approval from Dan and Vinay, Jean continued: "The clip about the Count of Monte Cristo is less clear to me, but I think I see a connection. A total stranger walks into a bank in Paris and obtains credit for one million francs on the basis of what?—a piece of paper from his bankers in Rome requesting unlimited credit for their client. I wouldn't mind having a document like that myself! It means that the organization of banking had already become so sophisticated by then that money could be created by the flick of a pen. What is money after all? It's a system backed by institutions, standards, procedures that enables people to interact with one another commercially over distance and time. This clip represents an advanced level of social organization that has evolved from hunting and warfare to commercial transactions and cultured urban life. The tools have evolved from bone clubs and spears to paper and pen. Leadership is passing to the wealthiest and most enterprising."

Ray admired the quality of Jean's Sorbonne education and his fluency of self-expression. No wonder the man is arrogant. Dan nodded approvingly and coaxed him to move on. "Coming to *Entrapment*, this clip depicts the stage when money itself has become a purely symbolic entity. It is no longer even backed by gold and silver. It's a number in an account that can be created by an electronic entry. But it still performs the same function it did four hundred years ago. It's an organization that facilitates exchange. Now money as an object is no longer important. We rarely see or handle it in material form. Money has become ethereal like the Internet, yet it is more powerful and productive today than it has ever been in the past. It's an organization that has become ubiquitous and upholds the entire modern world."

Jean stopped, took a breath and looked around the room a little embarrassed. Then he turned to Dan and said, "But frankly I don't understand what any of this has to do with MAI. I still don't get it." Apparently no one else did either, for after Jean sat down, nobody ventured to add to what he had said.

After a few minutes, Dan stood up and elaborated on Jean's perceptive comments. The common theme running through all the clips was organization. At each level of organization depicted in the clips, the capacity for work and accomplishment multiplies exponentially. Each advance in society is preceded and predicated on awareness of a new possibility—a change in consciousness—and each change in consciousness expresses itself through a new and higher order form of social organization. As that concept of organization changes, the concepts of leadership, structure, action, command and control change too. Methods of discipline have evolved too. Discipline was maintained by combat among the apes. In the Roman legions it was maintained by obedience to a strict chain of command. In Danglars day, a trustworthy reputation was more important than a strong arm. Today's banks depend on an almost foolproof system for instantaneous, worldwide, computerized verification of credit records. All of these reflect changing aspects of evolving organization.

Dan went on to recall the fact that although MAI was legally almost five years old, it was less than two years since they first conceived of AIS and since then their conception of their products, market, opportunities, and the very mission of the company had evolved rapidly, as if the company had reinvented itself several times as its conscious self-conception developed. "What about the organization?" he asked. They had grown in numbers and were still growing rapidly. They now occupied four times more space than they did a year ago and urgently needed more. But in terms of the way they were organized, he said very little had changed. They started out as an entrepreneurial group of highly independent, technical people who love technology, innovation, exploring and creating new things, experimenting, jumping from one project to another, working late hours and weekends. "Most of us are engineers. We like to think logically, analyze, and proceed methodically from the analysis of a problem to formulation and testing of solutions. But if you look at the way we work together—not much has changed at all. The evolution of organization we have been discussing has occurred by taking millions of small steps forward, by making minute changes in the way every type of activity is carried out. If you think about the difference between the Roman army and the German horde, it expresses in even the smallest details of their functioning. Personally, I'd say that right now we resemble the German hordes more than we do the Roman legions. Like them, we have no clear job descriptions, no clear lines of authority except the club wielding team at the top, and no management systems beyond the occasional grunt of approval or dismay. Everyone pitches in to do whatever needs to be done at the moment—there's a great spirit of cooperation. Organization at the time of Count was personal and based on personal relationships and an individual's reputation for integrity. Organization as depicted in

Entrapment had become impersonal and universal. Today network connections and the integrity of the system have become paramount. But the basic principles remain the same.”

He paused to sense the response to his words. The group was fully attentive and there was pin-drop silence. Even Jean La Brec looked intently interested in what Dan was saying. “Do we have today the organization in place to achieve maximum results in our business? I think the answer is obvious. Right now, we do not. On October 7, Randy asked for a meeting with the four of us to tell us we were running out of money and, if we were not careful, we could run ourselves out of business as well. Obviously, something is wrong. We have great people, an incredible product that seems to get better every day and opens up new avenues for development that we had not even conceived of a few months ago. We have top-notch companies as our clients, who trust us and pay us a lot of money upfront to fund R&D. We also have what is beginning to look like unlimited market potential. In spite of all these positives, we are bleeding money. We are also running an average of sixty days behind on our product development initiatives. If we define organization as the capacity to harness all our available resources in an efficient and effective manner to achieve the maximum possible results in the shortest possible time, clearly we do have a problem.

“But our problem goes even deeper than our organization. It goes to the heart of our product as well. If organization is so vital to the success of our company, then it must be a vital determinant of accomplishment in every field of human activity to which AIS can be applied. But how is it incorporated in our product? It is not! AIS³ is a powerful tool, but it is incomplete. It takes into account the traditional external variables needed for effective decision-making. It reaches beyond the limits imposed by narrow, egocentric viewpoints and opinions. It releases the power of attitudes. It takes into account the external aspects of organization like other expert systems—numbers of people, locations, computing power, systems, etc. But what about the quality of that organization, its capacity for leadership, vision, coordination, integration and acceleration? I hope you all agree with us, that the next version of AIS must incorporate these factors.

“Our problems go still deeper. They touch on our leadership. I speak for all four partners when I say that we may be out in front leading the charge physically, but we are not sufficiently out in front leading it mentally—expanding our awareness and consciousness and translating that into better organization. We need to be far ahead of the game, envisioning where this company and AIS are headed. So far it has been one day at a time, one step at a time. We’ve got to become more strategic, which means leaving more of the day-to-day responsibilities and decision-making to the most experienced people in this room—people like Jean who have tremendous potential as leaders, if only they will start encouraging others instead of just criticizing them.” Nodding his head slightly as if to acknowledge the truth in what Dan had said about him, Jean glanced over at Anya and smiled pleasantly.

“Some of you may be asking yourselves how we could have taken our eye off the ball and allowed things to get so far out of control that Randy had to dial 911. The truth is I can think of no good excuse for it, but I can think of one explanation. We are marketing the most advanced system for human accomplishment ever developed, and yet we are not using it in our own business. Otherwise, we would have been alerted to our internal problems long ago and we would have discovered the flaws in AIS earlier too. That has to change. We need to master the application of the system we have designed and developed. We need to elevate our own capacity for accomplishment—both individually and as an organization.

“These clips trace an evolution of power from the gross to the subtle. As life evolves, the most minute details become of increasing importance—a bone, a verbal command, a tactical idea, a small piece of paper, a digital account entry. Higher accomplishment lies in the increasing perfection of ever smaller and more subtle elements of organization. That is true for MAI and AIS as well. Our objective now is not merely to make a few organizational adjustments that will enable us to come out of our present difficulty. It is not even merely to discuss a new version of AIS that incorporates organizational variables. It is to establish a firm foundation for the rapid growth of MAI and the continuous evolution of AIS by helping us all become conscious of the enormous potential power lying within the organization waiting to be tapped. If we can discover how to unleash that power internally, there is no limit to what we can achieve in the market.”

Before adjourning, Dan asked all employees to go back and evaluate the present way work was being performed at MAI and to come up with concrete recommendations as to how it could be improved. He announced the formation of two special teams: a team for organization development consisting of Vinay, Randy, Lauren and Edna Lambton, the new head of HR; and a team for development of AIS⁴ consisting of Ray, Anya, Jean and Allen. For a moment, he was unable to gauge employee response to the meeting. Then suddenly loud and sustained applause broke out and everyone joined in. He saw Lauren’s smiling face nodding enthusiastically in the midst of the group. Anya looked very bright and happy. Even Ray seemed relaxed and pleased by the response. Anya observed Eric Green walk over and congratulate Jean on his

appointment to the AIS⁴ team, but she also noted that when Eric turned away from Jean a very different expression momentarily distorted his pleasing façade. “That is where the real work lies,” Anya thought.

As he watched people leaving the conference room, Dan thought to himself, “So much for the easy part. Now the real work begins.”

40. Who am I?

The individual must recover its right relation and harmony with the totalities of which it forms a part.

Self-knowledge is to discover the universal in the individual and the spiritual in the physical.

The Book

The next two days Anya's thoughts were full of Jean La Brec. She could not get him out of her mind. The change in his behavior astonished her. Of course, she knew he liked the attention he got in the meeting, but there was something more. His mannerisms, his expression, his choice of words and the tone of his voice had all changed—and decidedly for the better. She was extremely pleased, yet also puzzled by the change. Could it be in any way connected to a change in her?

She also could not help observing a subtle change in behavior among her senior project managers. Tony was visibly more friendly with Jean than he had been in recent times. Eric became more distant, though he maintained perfect manners as before. She noted a significant improvement in the relationship between Jean and Allen, who had always kept out of Jean's way to avoid the touch of his caustic wit. From both sides she observed subtle initiatives to bridge the gap and work more harmoniously. Had it been any other department, she might have taken these changes in stride. But she knew the character of these *prima donna* system designers. Each of them has an ego the size of a small country and all of them practiced the same foreign policy—total subjugation or all-out warfare.

The most striking and inexplicable change was in the relationship between Jean and herself. She could not attribute it to his special status on the AIS⁴ team. He had played a similar role on AIS² without altering his offensive behavior by as much as an inch. In fact, she had felt the change even a week before the company meeting, but she had not consciously thought about it. And she had to concede the change was two-way. It was not just that Jean behaved differently toward her. She felt and behaved differently toward him as well. She wondered, could it have something to do with Vinay's stories about Bill Tate and Don Gray or the magnificent response of Grigori? Had she subconsciously changed her own attitude to Jean without ever consciously deciding to do so? But those events had taken place six months earlier. The change she noted was much more recent. What had changed in the last one week that could account for it? She now recalled how the very thought that her attitude to Jean, Tony and Eric was somehow related to or responsible for their attitudes and behaviors had been an abomination to her, which she had rejected with a passionate intensity worthy of Catherine the Great. The thought itself was simply unacceptable, intolerable! Yet, the fact was that she did feel differently towards Jean than she had in the past and he seemed to feel differently towards her—both tremendously for the better. Anya noticed that her energy level was higher, her attitude toward coming to work each morning was better, her confidence in making up for lost product development time was much higher—all because of a slight alteration in her relationship with Jean. If so much power resided in a single relationship, how great must be the overall potential for elevating performance? But what had triggered it? That was the mystery.

Then it occurred to her that perhaps it was MAI's financial crisis. When Randy painted such a pessimistic view of the situation, Anya had felt pressurized and depressed. She realized she would have to elevate her productivity and the performance of her department and do so with far less resources than they needed. Perhaps it was the intensified pressure of the situation that had made her more willing to alter attitudes which had previously remained sacrosanct and unquestioned. In any case, she realized that it had happened, with or without her conscious intention. She had decided to alter her attitude toward her senior people and in retrospect she realized that she had actually done so significantly only with respect to Jean. She still could not bring herself to forgive Tony for his betrayal and fully trust him. Her dislike of Eric actually increased, the more clearly she understood his true nature. But with Jean there had been a change in her and a corresponding change in him. A few months ago she would have said he was the worst of the three and the least likely to ever alter his conduct. Now he placed Jean in a different category than the other two—she had promoted him psychologically! Having felt the stinging intensity of his personality in her nerves for so long, having come to know all the idiosyncrasies associated with his perverse reactions to ordinary situations, the change that had come about in their relationship seemed inconceivable to her, even after the fact.

Now she began to wonder why it had seemed so difficult earlier and why it still seemed impossible for her to conceive of a corresponding change in her relationship with Tony and Eric or a corresponding change in their attitudes and conduct. Why was it so difficult, she wondered? She concluded that it must be all a matter of ego. But, after all, what do we mean by ego? An exaggerated sense of one's self-importance

and the inferiority of other people? A sense of self-righteousness and superiority? A desire to succeed, surpass, dominate and subjugate? The drive of ambition, greed, and selfishness? These were certainly prominent among the droves of elves, demons and dwarves that plagued human nature, and she knew she was no more immune to possession by them than anyone else. But, she had always tried hard to combat these evils in her work at MAI. She had tried to be fair, patient, considerate, encouraging, supportive, willing to recognize others' talents and accomplishments. She thought she had so succeeded in identifying her interests sufficiently with those of the company as a whole that it did not matter who got individual credit for an achievement, as long as the company benefited. But perhaps she had been deluding herself.

With these questions in her mind, she rose from her chair one afternoon three days after the company meeting, walked into Dan's office and asked him if she could take a photocopy of *The Book*. Dan sat back in his chair with a look of surprise on his face. Anya had expected he would be pleased to hear her taking more interest in *The Book*. She had somehow sensed he was a little disappointed that she, Ray and Vinay had left the reading and research mainly up to him. So his expression surprised her. She then explained that she wanted to read what *The Book* had to say about the nature of ego. Rather than trying to find time to read it during working hours or to ask him to lend it to her at night when she knew he would be studying himself, she thought of asking for a copy.

Dan recovered from his surprise, asked her to sit down, then he got up and closed the door so they would not be disturbed or overheard. In an apologetic tone, he said, "Anya, there is something I have not told you or the others about *The Book*." He then narrated what occurred the day six months earlier when Lauren had dropped by and discovered that the text in the pages of *The Book* was disappearing. Anya felt mildly disturbed when she heard that Lauren had taken the liberty to stop in like that, though she could not say why. Dan observed her response and explained that she had come only once to thank him for the bonus. He told her how when he had tried to make photocopies of the disappearing pages, he discovered that it only made matters much worse. Then he explained how he had discovered the link between the vanishing pages and his own attitude of neglect toward *The Book*. When he reversed that attitude, the print returned to normal intensity.

Dan hesitated to say more than this, but he decided to take this occasion for full disclosure and so he also told Anya about the attempted robbery at the gas station on October 7. He said he had been meaning to tell them all, but when he saw Randy's report on the financial crisis, he decided to wait for a more appropriate occasion. "You mean to say that you think that man was after *The Book*, Dan?"

Dan shook his head in a questioning gesture. "How can I say answer one way or the other? He might have been simply looking for anything valuable. Perhaps he expected to find a notebook computer in the bag. That seems a lot more likely. But there are a few flimsy reasons that make me wonder. First is the look of the man. He did not strike me as a typical thief. In fact, I had a vague feeling I had seen the man before somewhere, but I cannot honestly say whether that is true. Frank replayed the footage on his security camera for me and said he had never seen the man before. He even offered to report it to the police, but I discouraged him from doing so. Promise me you won't laugh and tease me for what I am going to say next, Anya? But apart from these things, I have had the strange feeling a few times that someone has entered my apartment in my absence and I wondered whether it might be in search of *The Book*."

"Dan, now you are beginning to scare me," she replied. "I would never laugh at something like that coming from you. I know you too well. I am the paranoid one in the group, not you. I might have thought the idea was crazy eighteen months ago, but that was before I began to realize how rare and valuable *The Book* really is. I may not be able to comprehend it the way you do, but I know enough to respect and value it. But even if someone else knows about *The Book* and wants to find it, I simply cannot imagine how they could ever have traced it to you. That seems extremely improbable."

"Those are exactly my own thoughts, Anya, which is another reason why I did not mention these things to you or anyone else until now. Even I think I sound foolish when I listen to myself saying them. Anyway, those are my secrets. Now let's get back to your question. If my understanding about the vanishing of the pages is correct, then I don't see why your request to photocopy them out of interest in the content of *The Book*—not just a desire to physically preserve it, which had been my motive at the time—should cause any problem. But the fact is there is a risk and I cannot say for sure."

Immediately Anya shook her head and told Dan that knowing what she now knows she is unwilling to take any unnecessary risk at all regarding *The Book*. She said she proposed to read what *The Book* has to say about ego and discuss it with Dan right here in his office, if he agreed. She agreed to return at 5:00 pm and rose to leave the room, then turned and said with an inexpressible combination of sternness and affection that bore the unmistakable stamp of her personality, "Apart for all this, I cannot resist the opportunity to tell you that you have been very wrong in keeping all these secrets from me and your other partners. We are

either in this thing together, for better or worse, or I want out!” Then she abruptly turned and went out without giving him an opportunity to reply.

Anya returned at the appointed hour. Dan was working at his computer. He looked up and handed her *The Book* along with a small paper with some page numbers on it relating to ego. She sat in one corner of the couch against the back wall and began to read. In Anya’s understanding, ego was that in a person that feels independent, self-important and superior to others. But *The Book* employed the term in a much wider sense. According to *The Book*, ego is a view of reality in which each of us feels separate from everyone and everything else, alone, individual. It’s the view in which each of us stands at the centre of the universe and we look out on the whole world and everything in it from our own point of view. We relate to everything in terms of our needs, our understanding, our values and beliefs.

After reading for a while, Anya began to feel tired. She laid *The Book* on her lap and closed her eyes. Myriad thoughts flitted through her mind. She thought about how quiet it was in the office, the pain in her back, Jean and Tony, the shopping she needed to do for dinner, something Vinay said to her the day earlier, how pretty Lauren looked when she came in this morning, a memory of being left alone at home when she was young, the freedom she felt living in USA, Katia’s homework, how nice it was to just sit in Dan’s office doing nothing for a while, how glad she was that she had had her three partners and quit NASA to work with them, how sometimes she missed Russia and disliked having to take care of herself. Then she opened her eyes and went back to reading. Suddenly she began to reflect on the thoughts that had arisen during her reverie. They covered a wide range of topics both near and far in the past, present and future, but they all had one thing in common. They all issued from her unique vantage point. They all reflected her own unique view of reality from her particular vantage point in space and time. A perfect example of pure relativity, she thought and smiled to herself. Mr. Einstein would no doubt be pleased to know that her thoughts endorsed his theory.

Again she returned to *The Book* and what she read confused her. No it was not confusion she felt, it was disturbance. She read the words again,

The ego’s view of the world is false. It is an illusion.

In what sense was it an illusion, she wondered? She could agree that it was self-centered and even selfish, since she placed herself at the center of every situation and considered it from her own point of view. But in what sense was it false? Then she recalled an experience when Katia was three. It was shortly before they had left for America. She and Alex had organized a small party for friends at home. The noise must have awakened Katia. About midnight she came down the stairs carrying her pillow and wearing nothing but her panties. She peeked into the room and then ran over to hug Anya. When she became aware of all the adults standing around staring at her, she became embarrassed and started to cry. Then she raised the pillow over her head and stuck her head inside the cover so it was buried inside. Suddenly she stopped crying and began to laugh. She had managed to conceal herself so that no one could see she was there. She actually felt that because she could not see anyone around her, they could not see her either. That’s what we all do, Anya thought, we interpret all experience from our own point of view and never conceive there is any other valid perspective. In that sense, certainly *The Book* is right. It is an illusion. It’s a false way of looking at reality.

Anya began to reflect on her own way of viewing the world—the way she thought about Katia, MAI, her partners, her work, Jean, Tony, Eric, Lauren, Randy, Berkeley, America and so many other things. Wasn’t she doing exactly what Katia did when she was three? Never considering there are other valid viewpoints of reality, never trying to figure out what they were, feeling her own viewpoint was real and complete in itself. She suddenly felt like a small half naked child in a room full of adults and wished she had a pillowcase to plunge her head into. She glanced over at Dan, but he seemed to be fully absorbed in his own work as she was in her thoughts. Then she began to justify her position. After all, what else could anyone do living in a country like America where everyone is completely responsible for their own existence? If I don’t look out for myself, she thought, who will? But she realized that this very sense of independence is illusory. In truth, she was totally dependent on the world around her at every moment. She depended on the newspapers to gather and deliver news; the TV stations to create, produce and deliver programs to meet her interests at those rare moments when she found time to indulge herself; the highways department to maintain the roads in good condition; the bank to cash her checks and pay interest on her savings; the insurance company to protect her and Katia in case of an extreme situation. She depended on farmers to grow the food she liked to eat, companies to process grapes for her favorite wine, meat packers and supermarkets, importers of coffee from Brazil, bananas from Honduras, and tea from India or Sri Lanka, taxis to arrive promptly when she called, doctors to treat Katia when she fell ill. The list was endless. She saw that her ego thinks that all these people, systems, organizations, products and services exist to meet its needs. It views the entire universe from its own perspective.

The Book went further. It was not just the narrow-mindedness, selfishness, subjectivity of a personal viewpoint that it called illusory. It was the underlying sense of a separate and independent existence that it challenged. Even though she was a partner in a company with eighty-one employees, she still thought of her life and work as somehow separate and independent from the lives and work of everyone else. Did she really have a separate and independent existence apart from her relationships with Katia, Dan, Vinay, Ray and the others? Her thoughts were a product of their thoughts, her feelings at every moment influenced by how they felt and what they did. If they all disappeared the next moment, she would not be merely alone, the person she was would cease to exist too. Not that Anya defined herself exclusively by what others thought of her and how they responded. She was more independently minded than most people. But she realized to what an extent her life and theirs were inextricably intertwined. *The Book* acknowledged that her individuality was real, but its reality was an integral part of a greater whole and she is herself a microcosm of that whole. She could no more be divided and considered independently from the universe in which she lives than the earth can be considered separate and independent of the solar system or the genetic code in her DNA from the cellular environment which sustains and perpetuates it.

Again she returned to *The Book* and read until she came upon another sentence that seemed laden with significance.

Ego begets ego.

Just like the behavior of paired subatomic particles in the quantum phenomenon of entanglement, her interdependence was so real that she could not alter a single element of her own personality without it having ramifications on the people around her. Wasn't that exactly what she had seen with Jean? The more she tried to justify, preserve or fortify her own individual position, the greater the intensity of opposition she encountered from him, even if she tried not to express her assertion in word or act. It seemed to be as universal and invariable as Newton's law of action and reaction, only the plane of action and the forces were psychological instead of material. Then *The Book* went on to explain that the converse is also true. That the effort to move away from ego by expanding our consciousness to identify with other people as part of ourselves rather than as foreign objects evokes a corresponding response from them. That was what had happened to Bill Tate when he altered his attitude to his customer and to Anya herself when she reversed her attitude to Grigori, even without being in physical contact with him. That explained the dramatic change in Jean's behavior during the past one week.

All this began to make sense to her. But she found the next three words that she read more difficult.

Reason is ego.

She reread and thought about the statement. It simply did not make any sense. Reason was the highest faculty in man, the source of our objectivity and rationality. If ego is false and reason is ego, then that meant what we call reason is false as well, that what we consider rational is actually irrational. That was simply too much for a mathematician who prided herself on her logical reasoning functions to comprehend or accept. Then she burst out laughing when she thought about what she referred to as pride. If anything was irrational, certainly it was pride! Nevertheless, she found this statement simply beyond comprehension. After puzzling over it for sometime, she looked over to Dan and asked him for help. So she read out the statement to him and asked him to explain it.

"Ego judges everything by its own standards," he replied. "If I am a good cook, I feel superior to everyone who cannot make a soufflé. If I am a good card player, dancer, skier, palm reader or scrabble player, joker or story teller, I judge everyone else in terms of my strength, no matter how silly it may be, and feel superior. If my grandfather was famous or my uncle is rich, I feel important because of their achievements, even though I contributed nothing to their fame or fortune. But the ego's irrationality goes way beyond that. Say, for instance, I am a grape farmer in Napa. This year is a bad year due to drought, so grapes are in short supply and are sold at a high price. I am happy because in spite of a lower yield I earned a record income from the crop which I sold to the winery. Next year I go to the supermarket to buy some wine and I find out the price of my favorite table wine has gone up by forty percent. I am furious and feel cheated! I am so subjective, I don't even realize the two events are directly related. That's how the ego responds to events. Or take the student who has received twelve years of free public education in California and then four years of good quality university education at a tiny fraction of the actual cost to the state for delivering it. When he gets his first job and discovers that his employer is deducting a significant portion for taxes, he feels cheated and wonders whether there is a way he can earn without paying taxes. Then he gets on the highway and complains that the roads are too narrow and resents having to pay tolls for their upkeep!"

"This is still only the tip of the iceberg that you see on the surface. Delve a little deeper inside and examine how people react and respond to the world around them. I buy a few health bars and leave them in a

bag on my desk at the office. Two days later, I suddenly feel hungry and reach for one, but I cannot find the bag. The thought occurs to me, 'perhaps one of my partners found the bars and ate them.' I feel slightly annoyed, nothing much, but think that at least some one should have asked before taking them or told me afterwards. Later in the day, I walk through a department store but cannot find what I am looking for. On the way out, a security officer looks me over and stares at the new umbrella I am carrying, wondering if I am trying to steal it from the store. I stare back at him and he remains silent, but I feel offended by his accusation that I would steal a silly umbrella. It never occurs to me that a few hours earlier I silently accused my partners of stealing my health bars! That's ego. Each person carefully observes, criticizes and condemns in other people all his or her own weaknesses and worst characteristics. According to *The Book*, if anything disturbs us in another person, it is because we possess the same characteristic, expressed or unexpressed, in ourselves. That too is ego."

Anya nodded her head and reluctantly conceded that ego could act irrationally. But Dan was not content with that partial concession. "Not sometimes" he replied. "Ego prevents us from being rational even one percent of the time. But that is not all. The real problem of ego is not that it makes us condemn others or fail to appreciate the help we receive from the world around us. The real problem is that it prevents us from knowing ourselves and discovering our own greater potential. It is in this sense most of all that ego is a bar to human progress. Ego makes us identify exclusively with what has happened to us in the past, with our community, our family and our own earlier life. If my father was an uneducated immigrant or a barber or a convicted thief, my ego never lets me forget my origin. I am ever conscious of my roots and always feel inferior to other people. Or I work very hard to acquire what my father failed to achieve and then I feel superior to everyone who does not share my accomplishment. But in either case, by identifying with what I have been or what I have achieved, I miss out on the infinitely greater potentials that I have not yet discovered in myself or in the world around me because I identify with a very narrow, limited view of myself. I do not know who I really am!"

"Well, Dan, who are any of us, in that sense? I am just a product of my past experience and Russian heritage, my present life in America and my future dreams."

"No, Anya, you are much more than that, only your ego makes you ignorant of all the rest."

"Dan, be careful whom you call 'ignorant'," she said a threatening voice and laughter in her eyes. "My Russian ego is very sensitive! And I am ready to defend myself both rationally *and* irrationally, if necessary." Just then Vinay opened the door and looked surprised to see Anya sitting in the corner. In answer to his unasked question, Anya replied, "Dan has nothing better to do than tease a poor, defenseless Russian peasant girl!" They all burst into laughter simultaneously.

41. Nanotechnology

Energize every act.

Archives

After the company meeting, MAI began to change. Refining and realigning its parts, a crudely constructed and haphazardly assembled machine grew into a precision instrument. A mechanical device consciously evolved. Suggestions and proposals to improve and expand operations at MAI began trickling in within the first twenty four hours. By the second day the trickle became a stream and before the end of the week the stream had become a flood that nearly overwhelmed Vinay's operations committee. In the first one week more than a hundred proposals were submitted, an average of more than one per employee. Vinay sorted them out subject-wise and distributed among his team members. Then realizing the magnitude of the task, he co-opted Lisa Benton, head of contractor services, Allen Shores and Jamie Lee, head of customer service to join the team. Dan sat in on some of their meetings, but generally only to listen.

Although almost everyone in the company was highly qualified and hard working, the common tendency in the past had been for people to fault individuals for every error or delay. Now a new mentality began to spread. Instead of looking for a person to blame for their mistakes, they began to ask where the system had broken down or could be improved. Individually they had been doing the best they could, but organizationally they found there was enormous scope for working more effectively together. Dan drew an analogy to the professional football teams that play in the Pro Bowl. "I watch the game every year because the all-star game is the only chance I get to see the best players in the NFL on the same field at the same time. But every year I come away disappointed. Great players, lousy game. Great individual effort, poor coordination and teamwork. I have a suspicion that the worst regular team in the NFL could have beaten either side."

Their strategy was to start with the low hanging fruit and the areas where there was widespread consensus regarding the need for change. The first of these was a new system for managing subcontractors, proposed by Lisa to make more effective use of their supplier network. Lisa and her assistant began by analyzing performance on the last few products and identifying the sources of bottlenecks and delays. They concluded that there was scope for a minimum twenty percent reduction in time and expenditure by modifications in the approach. They then prepared a detailed schematic on how the new system would work. It included measures to clarify lines of command, streamline reporting procedures, simplify documentation, increase reliability and enhance the confidence and trust between MAI and its subcontractors. The whole system was designed in less than one week and then sent out in draft form to two of the company's major vendors, one in Bangalore and the other in Moscow. After incorporating feedback from both vendors and other people at MAI, the new system was made operational by mid December. Anya commented to Vinay that even before implementation, she observed a marked improvement in supplier responsiveness and reliability, which Dan attributed to the increased attention they were directing to this issue. "Attention is energizing and creative," he remarked cryptically.

The second major issue was the system for product development. After identifying a dozen types of problems with the current system, Allen came up with a revised approach which involved far closer collaboration between designers than their present way of functioning. Based on past experience, Anya was skeptical as to whether her team would accept it and apprehensive that the attempt might increase internal conflict at a time when she was seriously working to reduce it. To her surprise, Jean enthusiastically embraced the new system and generously complimented Allen on his conception. Anya was not sure who was more surprised by Jean's response—Allen because he had been complimented by the most caustic critic in the company or herself because Jean had consented to work more closely with others in future. Tony quickly fell in line with Jean and Eric went along as always with what was considered politically correct, regardless of what he was really feeling about the issue. For the new system to operate effectively, it would have to be seamlessly integrated with Lisa's new subcontractor management system. The two teams met and worked out the modalities in a single full-day meeting. Here too, Anya observed a significant improvement in the performance of her department, even before the new system was operational. Over the next one month, they were able to shave thirteen days off development time for AIS³, advancing the launch to November 17. By the time the new product development system had been fully implemented, the scheduled time for completion of AIS⁴ had been reduced from nine months to six, with a thirty percent reduction in estimated project cost.

The third major focus was on human resources. MAI already had in place rudimentary procedures for recruitment, orientation, training and assessment, which Edna had been upgrading. Most of the proposals the team received related to the application of PAIS to work within the company. Employees were eager to evolve methods for internal decision-making that reduced conflict, stress and the arbitrary exercise of

authority. It had already been nearly a year since they delivered PAIS to NASA and about nine months since it was implemented on the ISS. Feedback from the agency had thus far been extremely positive. If it was good enough for NASA, employees argued, why not for MAI? Vinay requested Lauren, Tony and Jean to evolve a methodology for implementation. Edna hired a new manager-trainer to guide the process. Training began in early December and the in-house version of PAIS was operational by January 1, 2006. The last two major initiatives were an improved system for monitoring feedback from clients on the performance of MAI and its products, which was handled by Jamie and Eric, and an employee stock option plan, which Dan and Randy worked on together.

The major initiatives accounted for only fifteen percent of the suggestions submitted to Vinay's team by employees. Some of the other proposals were too large, expensive or futuristic to be immediately considered, but many of them were relatively small, simple ideas for improving productivity, speed, coordination, communication, orderliness, housekeeping, quality of work and quality of the working environment. At first Vinay's team was inclined to discount these smaller initiatives and postpone them until the major projects had been implemented, but Dan argued for a different approach based on his recent insights into the power of small significant acts. He reminded the team that their immediate objective was to improve speed, efficiency and profitability, not to build the perfect company with ideal systems. He asked the team members to make a list of what they considered the most important internal factors contributing to the company's overall performance. Each member of the team prepared a separate list and then they compared notes. Lauren compiled a comprehensive list of points which included thirty-three different factors. On further analysis they concluded that every one of the thirty-three factors directly or indirectly contributed to overall performance and some of the apparently least significant factors offered disproportionate benefits. Jamie gave an example of how close coordination between her department and Jean's team on one small issue had reduced time and expenditure on the Citibank project by seven percent.

The more closely the team examined the finer organizational fabric of the company, the more opportunities they discovered for significant improvement. Misled at first by the lure of big ticket items, they began to discover that the secret to profitability lies in perfect execution of small acts, the same conclusion Dan had arrived at from his study of the lever and pulley. They came across numerous incidents of small acts properly conceived and executed that released great power. A single two-hour meeting between Vinay's client services team and Anya's R&D team resulted in nine small modifications to PAIS that raised NASA's satisfaction ratings for the product by sixteen percent. They began to realize that every task performed in the company, every act, contributed either positively or negatively to profitability: their capacity to judge people determined the quality of their new recruits, the clarity of documentation determined how quickly new people come up to speed, the quality of coffee, the cleanliness of the carpets, the speed of the network, the accuracy of accounting systems, awareness of technological changes; their attitudes toward customers, vendors and one another; skills in leading, planning, problem solving, motivating, communicating, team-building, public speaking, negotiating, technical writing, presentation; polite manners, cheerfulness and sense of humor; energy, endurance, patience and humility to let other people point out their mistakes and suggest better ways to work.

They discovered there was a nanotechnology for organizations that was even more powerful and promising than the one for inanimate organizations of atoms and molecules. The potential for fine-tuning the micro-connections that constituted the fabric of MAI appeared to be unlimited. At the same time they began to understand the limitations of a purely mechanical conception of organization. Like machines, human organizations are far more than the sum of their parts. But unlike machines, they are organic entities, like the human body. Organizations are not assembled from parts like machines. They are not just bunches of people stuffed in one place and assigned a variety of tasks. Organizations are born of an idea, grow from a small fertile seed and evolve as a unified whole. None of them fully comprehended what they were doing, but they sensed the power and saw the results. The more they discovered, the greater the enigma became.

Vinay's team came up with a plan to subdivide the remainder of the recommendations and distribute them to ad hoc teams of other employees to evaluate and implement as far as possible. By mid-November more than fifty employees were engaged part-time on one or more teams. By the end of the year more than forty recommendations had been implemented. Randy closely monitored all the initiatives and their impact. He reported to Dan just before Christmas that while subcontractor fees were seventeen percent lower than he had expected, client billings were running twelve percent ahead of his earlier projections for the past four weeks. The combined result was a net improvement of nearly two hundred thousand dollars during the past thirty days. If the trend continued, it would leave the company with sufficient operating funds until the end of March. This was before factoring in any contribution from the major initiatives that Vinay's team was working on. But things did not work out exactly as Randy had imagined they would.

The team charged with conceptualizing AIS⁴ discovered that the work of Vinay's team gave them a big headstart both conceptually and practically. Assuming MAI as a typical, generic case, all they needed to do was derive general principles from the specific organizational strategies adopted at MAI and evolve standardized methodologies for incorporating them in AIS⁴. Simple in conception, it proved to be far more difficult in practice, but the fact was that starting from a real example helped immensely. Once a prototype model had been evolved for AIS⁴, they began testing it under different real life situations within the company and modifying it based on the feedback they received. MAI became the laboratory of experience for evolving AIS⁴ and AIS⁴ the conscious instrument for evolving MAI. Everyone realized the limitations in the initial assumption—MAI might not be typical of other companies in many respects—but still it was a good starting point. In order to complete it, they would need to apply it in a variety of circumstances other than their own. That opportunity presented itself much sooner than they had anticipated.

42. Titanic

Soon after the IRA announced a permanent cease-fire in Northern Ireland, Vinay received a call from Arun Prakash, President of the Indian Professionals Association of Silicon Valley, regarding the possible application of AIS³ to Indo-Pakistan relations and the war in Kashmir. The intractable dispute between India and Pakistan over Kashmir had been raging hot and cold ever since the partition of British India into two independent states in 1947. Following the end of the Cold War this dispute was considered by many as the most dangerous extant bilateral conflict. No where else in the world did two nuclear powers with a history of conflict face each other across a long common border in a constant state of military alert, while their governments exchanged a non-stop string of accusations, and counter-accusations, threats and counter-threats. Vinay was very sure that resolution of this conflict, if and when it ever came, would free up the attention and energies of India and hasten its emergence as a world superpower, but he knew that innumerable efforts had thus far failed to make headway. The Indian Professionals Association includes many high profile Americans of Indian origin, some with significant influence in Washington and New Delhi, so Vinay responded to the inquiry seriously, but never heard back. Then in late December, Arun called again saying that a high level delegation of Indian government officials, including the National Security Advisor and the Foreign Secretary, was coming to Washington in December and they would be interested to meet to learn more about AIS³. Knowing how difficult it is to meet either of these top officials in India, Vinay jumped at the opportunity. Ray reminded him how reluctant Vinay had been to take up the Ireland project and teased him for his enthusiasm. Vinay flew into DC the evening before the meeting, completed preparations for the meeting, and lay back on the bed in his hotel room to relax for the first time in weeks.

Vinay had always been a movie buff, but found little leisure time in recent years for this purpose. Still on California time, he found it was too early to sleep, so he turned on the TV just as a black and white, 1949 Gregory Peck movie called *Twelve O'Clock High* was coming on. He was soon engrossed in the film. Based on historic fact, it depicted the effort to prove that daylight precision bombing of German installations could be an effective Allied strategy to hasten the end of the Second World War. The American 918th Bomb Group, headed by Colonel Keith Davenport, was entrusted with the task of demonstrating the strategy could work without the support of fighter jets. The Group was incurring heavy losses of both men and equipment on their daily raiding missions. Davenport, who was highly regarded by his men, concluded that the strategy was a total failure—a real Mission Impossible—and that persistence would only lead to further unjustified loss of life. He argued for suspension of the missions. Instead the High Command sent in Brigadier General Frank Savage, played by Peck, to replace Davenport and try to salvage a desperate situation. Savage found the Bomb Group totally demoralized and in disarray. Everyone from the officers to the crew believed they were operating a suicide mission. By a tremendous personal effort, Savage re-established discipline, overcame stiff resistance from his officers and open rebellion from staff, elevated standards, upgraded skills, built up the group's pride, improved coordination, and dramatically raised mission success rates, while drastically reducing losses of planes and lives. As a finale, the Group destroyed a network of bearing manufacturing plants that were supplying critical replacement parts for the entire Nazi war machine.

Vinay was fascinated by the predicament Savage found himself in and the methods he adopted to turn total disaster into success. It reminded him in many ways of the situation at MAI. The very fact that a near impossible situation could be turned around was encouraging and inspiring. He admired Savage's self-confidence, his faith in the men, and his capacity to modify their opinions and attitudes. Savage had to openly challenge and alter the confirmed opinions of virtually every man in the Bomb Group that their mission was hopeless. He had to also overcome the bitter resentment that had built up against the high command for callously sanctioning such a useless loss of lives—their own lives. He had to replace these negative opinions and attitudes with a sense of self-confidence, conviction in their capacity to accomplish, and the willingness and courage to once again face the enemy. Most of all Vinay was impressed by the tremendous energy that Savage exhibited in his effort to salvage a sinking ship, a flying Titanic, after it had already been mortally hit and was heading down into the sea. Savage was so exhausted by that effort that he had to be literally carried from the plane he was flying in and placed in a chair where he sat in a coma-like stupor awaiting the outcome of the final mission. His effort had not merely been physical. The psychological responsibility he had assumed as leader and the psychological energy he had put out to win the confidence and hearts of his people and to energize and embolden them for a remarkable accomplishment had required a total and exhaustive effort. Little did Vinay realize at the time that he would soon have his own Titanic to deal with.

The next day Vinay made a presentation to the visiting Indian delegation at the Indian embassy. There were a lot of questions regarding the precise role of AIS in the Irish breakthrough. He explained as

much as MAI's confidentiality agreement with the Irish Committee permitted and suggested they consult with the Committee for further information. It was only then that he learned that they had already met with Courke in Dublin on their way over here and much of what they asked him was only to see how far his version would be consistent with what Courke had already told them. It was a test. Vinay got the feeling from their response that he had passed. The meeting ended with the prospect of a follow-up meeting in Delhi in early 2006.

Vinay flew back to SFO along with Arun who had come to Washington for the meeting with some leading members of the association. The next morning, Lauren informed him that nine months after her original conversation with Michael Lempe, he had called back agreeing to meet with them two days later. Before the meeting, Lauren briefed Vinay based on information she had gathered from her brother Greg, who had just completed one year with Lempe Manufacturing, a seventy year old, three thousand employee maker of computerized precision machine tools and equipment for the aerospace, computer and medical equipment industries. Vinay and Lauren drove to an industrial complex on the outskirts of Hayward, a sprawling facility on what had since become very expensive real estate. The buildings themselves were of old time steel and concrete construction and looked rundown. They walked into Lempe's spacious and well-furnished office.

Lempe greeted them cordially in a soft voice. He was a tall, husky energetic fifty year old man with a full head of gray hair. He immediately began to narrate a brief history of his company. The company was founded just before WWII by Michael's grandfather Victor, whose claim to fame had been the award his company had won as a major supplier of equipment to the Kaiser shipyards that built the Liberty Ships. Lempe branched off to narrate a fascinating episode from American business history. Vinay soon realized the Lempe's interest in the past was at least partially due to his reluctance to talk about the present. "The United States built only two ocean-going, dry-cargo freighters between 1922 and 1937, so on the eve of WW-II, American merchant shipbuilding was nearly dead in the water. All the Allied shipbuilders were hopelessly committed to warships, and Axis nations were torpedoing merchant vessels at an alarming rate. Great Britain was in desperate straits. Without cargo ships, she couldn't hold out, so the British turned to America for ships and it was Henry Kaiser who emerged as their savior. Kaiser had neither workers nor shipyards, but he turned his lack of preparation to remarkable advantage. Since it took years to train a well-rounded shipbuilder, he rearranged work so he didn't need well-rounded people. He broke shipbuilding into prefabricated components, so each worker had to learn only a piece of the job. He eliminated the need for much of the heavy equipment used for metal cutting by replacing rivets with welding. He even cut the time it took to train novices to tightrope across steel structures by hiring ballet dancers as fitters. Kaiser redefined shipbuilding to match his resources. He introduced assembly-line techniques and interchangeable parts on a gigantic scale. Soon the Kaiser yards were building Liberty Ships in a month—then in ten days. Toward the end of the war they finished one in just four-and-a-half days. Thanks to his leadership, America produced eleven million tons of shipping in 1942, but submarines sank twelve million tons. The next year we raised that to twenty million tons of shipping and that turned the war in our favor. The Liberty Ship saved America and the world."

Lempe's narrative was thrilling and he became deeply emotional as it drew to a climax. Then he turned to Vinay and asked him to talk about MAI and its work. Since Lempe was a privately-owned business, Vinay had no idea about the company's operational performance or why Lempe wanted to meet. He gave a brief overview of the company, its work for NASA and Citibank and touched briefly on Ireland, with emphasis on the linkage to business and economics, and then ended by a detailed account of the work for Accor and the immediate result. Lempe listened carefully and patiently and then popped a direct question: "Can AIS³ or the new version you are working on steer a company away from bankruptcy?"

Vinay took a deep breath and replied that he would like to know more about the company before he replied to the question. "Vinay, let me be frank with you," he began. "This company is a Titanic on its way down. We hit an iceberg, have taken on water in most of the compartments, and are floating heavy in the water. About the only plus point is that we have not recorded any loss of life. I mean I have not fired a single employee. I have kept the commitment to my people and their families, just as my father and grandfather did before me." Then Lempe passed Vinay a single sheet of paper summarizing the last ten years financial performance. The company's revenues had grown from two hundred seventy million dollars in 1995 to a peak of three hundred sixty million in 1999 before heading south and ending 2005 at two hundred ninety million dollars. Net income during the same period had reached a peak of \$10.2 million in 1997 and had been declining after that. Since 2001 the company had been losing money, a total of about one hundred forty million dollars in five years, including twenty-eight million dollars in 2005. Vinay silently agreed the company did look like a Titanic and he felt a strong urge to run for the lifeboats. Suddenly he flashed back to General Savage and the 918th. Surely that was a Titanic too. And so was Accor's rayon tire-cord business.

And, for that matter, it was only just a few weeks ago that MAI was looking very much like a miniature Titanic as well.

Lempe narrated the history of the company following the death of his father in the early 1990s and a protracted law suit between himself and two other partners that had paralyzed the company for years. By the time the case was settled and Michael Lempe had gained control, the ship was already headed south. Overseas competition, especially from Korea, combined with some poor management decisions had accelerated the decline. Finally Lempe summed up the situation: “I have a company that’s going down. I have tried everything I could think of, run out of answers and I haven’t found anyone else who seems to have them either. I have survived this long based on a dedicated, loyal workforce that has been with the company for decades and generous credit from my supplier base, which currently exceeds hundred million dollars and cannot be stretched a dollar further. In earlier times we helped many of those companies get started in the first place, so they have been reluctant to pull the plug on us. But I know we are at the end of the rope. To top it all off, I have run out of cash, so I cannot afford to bring in an expensive consulting company. Lauren mentioned the incredible things you have done for Accor and thought you may be able to help. If you think so, I am ready to listen.”

As Lempe described the situation, Vinay noted the growing look of consternation on Lauren’s face. She kept glancing over at him, perhaps to see if he was angry with her for having suggested the meeting in the first place. Vinay could imagine Ray making a wry face and advising him to tell Lempe that his situation was outside their field of expertise. In his mind, he pictured Anya asking why he would even consider taking up an apparently hopeless project like Lempe when MAI itself was still floundering. He imagined Dan sitting calmly and laughing. It certainly seemed that the sensible thing to do was to ask for time to consider the matter, and then send a polite letter thanking Lempe for the opportunity and regretting MAI could not accept it. All his life he had made it a practice of not refusing the challenges and opportunity that life presented him. He had never considered himself either brash, bold or adventurous, but the idea of turning around this fine old company appealed to him deeply. He had no rational grounds for believing that they could do it, but that was even more true of the Ireland project and Accor. Both looked like impossible situations. Had he done what he thought reasonable or chosen the easy way out that suited his quiet cheerful demeanor, he would have walked away from Lempe at that moment and forgotten about it. He felt the temptation. He knew he had the justification. But he just could not bring himself to do it. He knew deep inside that this was an opportunity—for him, for AIS³ and for MAI. He also knew that his response to the opportunity was more important than the actual situation the company was in. Hadn’t *The Book* stated that inner attitude was a far greater determinant of results than external conditions?

After an uncomfortably long silence, Vinay said, “Before answering you I have one question. Are you willing to make any changes necessary to ensure the survival of this company, even if it means altering long cherished opinions and deeply seated attitudes?” Lempe took in the question and considered it seriously for several minutes. Then he replied, “I am willing to do anything and everything necessary to save this company provided I am convinced it is the right thing to do, irrespective of how much it challenges or contradicts the positions I have taken in the past.”

Then Vinay told Lempe that he felt confident that MAI could provide the assistance needed to turn around the company. “I need to discuss this with the rest of our management team and come back to you, but let me ask you a question. Since you do not have money to pay us upfront for our services, would you be willing to cut us in on a share of the profits, if we are able to achieve a turnaround?”

“Yes, in principle. What do you have in mind?”

“We would like 25 percent of the increase in profit achieved by the company over the next two years, taking 2005 as the baseline.”

“And if there is no increase in profit during that time?” he asked.

“No improvement, no fees. It’s a simple as that.”

He paused for a few seconds and extended his arm to shake hands. “It’s a deal!”

Vinay asked Lempe to send him a list of additional information and promised to come back with a written proposal within fifteen days. As they drove back to the office, a sense of dread came over Vinay at the very thought of proposing this to his partners. He could imagine the kind of objections that they would raise. How can they venture into management consulting services, when they have not been able to manage their own much smaller company properly? Why get involved with a high risk company like Lempe which is tottering on the edge of closure? How could they finance their upfront costs when MAI is so desperately short of cash? How could they afford to take on any work where there is no guarantee of payment at all?

Even assuming that they succeeded, how would MAI finance their own operations during the year or two it takes to earn their fees and get paid? Vinay knew the questions they would raise because all those questions were in his own mind. He also knew that if he were not fully convinced that it was the right decision and determined to go ahead, his partners would provide all the excuses he needed for backing out. They would raise his doubts and express his own resistances. He could walk away blameless from the project without ever turning it down, but he knew he would be fooling himself. If he really wanted this, he was sure he could make them go along. So the question came down to how much faith or confidence he had in their capacity to succeed and how badly he wanted to do it. Vinay had taken difficult decisions before, but never one that seemed to weigh so heavily on his mind and nerves. His mind went numb contemplating the possibilities. Lauren had remained quiet the whole ride home, glancing at him now and then out of the corner of her eye and waiting for Vinay to criticize her poor judgment. The inevitable criticism never came.

43. Chrysler

*The extraordinary thing done by an exceptional man during an evolutionary landmark
is made a commonplace occurrence by organization*

Saturation of a plane with organization enables it to evoke a life response.

Messages

Vinay went back to his office, turned on his computer and began to query AIS³ regarding the decision to work with Lempe. Most of the external factors were negative, but not all. The company had a long tradition of success and a good reputation among suppliers, although Lempe may have already exploited that reputation to the limit, financially. Still it was likely that many of their suppliers would do whatever they could in other ways to help the company survive. It also had a good reputation with customers as a highly reliable quality manufacturer in an increasingly quality conscious marketplace. Finally, it had a loyal workforce that may well be discouraged and demotivated by recent developments, but might prove to be a very strong asset, like General Savages' officers and pilots, once they were convinced the company had a plan and a chance of turning itself around. But it was the internal factors that principally occupied Vinay's attention. Lempe was bright and energetic, and still young enough to care very much about the fate of the company. He was discouraged, but he had not given up hope. He simply did not know what more or else to do. In calling Vinay for a meeting and giving him a serious listening, Lempe showed the openmindedness and resourcefulness to consider innovative solutions. Vinay felt sure that if AIS came up with a viable solution, Lempe would throw the full weight of his personality behind it.

Finally, the most important point in the decision-making analysis—himself. He knew that his attitudes and opinions would be the critical determinant. Did he believe the company could be turned around? He could not actually explain why, but he did. His mind went back to General Savage. Perhaps, it was mere superstition, but he thought Dan would agree that the fact he had watched that movie about a dramatic turnaround story the very same day Lempe called Lauren just might not be a coincidence. For some reason another example he had studied during his MBA course at Columbia kept coming back to his mind, Chrysler Corporation. Perhaps he was suffering from delusions of grandeur, but he did believe it was possible to succeed at Lempe. But there were other questions to answer. Was he really willing to take the effort required, even if he ended up in a comatose state like General Savage? How much did he really want it? Was he willing to go out on a limb and take the responsibility with his partners? He had always gone with the group decision. If they agreed to Lempe, it would probably be because they were accepting his decision. For the next one hour, he responded to the questions presented by AIS³ and finally requested a prognosis. Then he called Lauren into his office to tell her what he had decided.

Lauren was taken completely by surprise when Vinay finally began to speak about the Lempe proposal. He told her that they needed to conduct some research before presenting the proposal to the partners. Meanwhile, he asked her not to mention the meeting to anyone else. At first, Lauren could not believe Vinay was taking the project seriously. When she realized that he was, she began to admire his courage, though she could not help doubting his judgment. During the next one week they reviewed the results of some mock studies they had earlier done during beta testing of AIS³. The tests involved taking some famous turnaround situations from the past, presenting data to AIS³ on initial conditions, and asking AIS³ to diagnose problems, present recommendations and generate a prognosis regarding the likelihood of a successful turnaround. By that time they had also received a package of information Vinay had requested from Michael Lempe, including answers to the survey questions they had developed for the AIS³ beta testing. Vinay asked Lauren to run the new Lempe data as well on AIS³ and on the first incomplete prototype version of AIS⁴, which Jean's team had developed by incorporating additional parameters into the structure of the earlier version. With this data in hand, he requested a meeting of the partners to discuss the proposal.

Vinay feared that if he straightaway presented the proposal, it might be dismissed out of hand and he would find it very hard to counter the arguments against it. So he decided on a different approach. He told them that he and Lauren had been doing some research which had a bearing on AIS⁴, which he wanted to present to them. He started the meeting by presenting the data from AIS³ and AIS⁴ on the ten turnaround situations. AIS³ had given a positive prognosis for seven of the ten cases, when in fact seven of the ten had actually ended in bankruptcy. AIS⁴ indicated a positive prognosis for nine of the ten cases. When Ray saw the data, he muttered in exasperation and remarked, "AIS³ was wrong on forty percent of the cases. AIS⁴ was wrong on sixty percent. That means we are headed in the wrong direction. AIS⁴ is a bust before we even launch it." In response, Vinay reminded them that the prognosis of AIS was based on the assumption that the companies had followed its recommendations, whereas in fact they had acted very differently. Therefore it

was not possible to conclude from the data that AIS³ or AIS⁴ was actually wrong, except in one instance, the case of Chrysler Corporation in 1980.

Chrysler was an exception, because in this case both AIS³ and AIS⁴ had concluded the company would fail no matter what it did, even if it followed their recommendations, whereas in fact it had succeeded. Vinay told them that he wanted to examine this case more closely, because it may help them understand the limitations in their approach. He then briefly summarized the crisis that hit Chrysler in the late 1970s, during the early years of the Japanese automotive onslaught that flooded America with low priced, fuel efficient, low maintenance, high quality cars and put Detroit into a retreat from which it has never really recovered. At the time Chrysler had twelve billion dollars in revenues, approximately hundred thousand employees, and hundred thousand unsold cars in inventory. It had been losing money for years. The products they were making were so bad that most Americans did not want to buy them and when they did they discovered that product quality had deteriorated markedly, earning Chrysler the lowest quality ratings of any US carmaker. It had run out of cash and owed \$1.3 billion to banks and had defaulted on payments to virtually all of them. Its debts were far in excess of the estimated value of its assets at the time. The media carried interviews with experts who predicted that Chrysler would fold within a maximum of six months. Lee Iacocca took over as Chairman of Chrysler in 1979 at the height of the crisis and applied to the US Government for loan guarantees in order to persuade the banks to extend additional credit. The government put up guarantees equivalent to \$1.5 billion to be repaid in ten years.

Ray interrupted his narrative: "Vinay, Chrysler's an exception in every way and cannot possibly stand as a model for testing AIS. First of all, in Lee Iacocca, Chrysler had one of the greatest business leaders of the twentieth century at its helm. The guy is a legend. After what he did at Chrysler, if he had run for US President he would have won, even against Reagan. Second, as you yourself pointed out, the Federal Government stepped in to save the company at a crucial juncture. You cannot build either of these factors into any computer model. Leadership is too nebulous and political sentiment in Washington is simply impossible to predict."

Vinay waited for Ray to finish, conceded the validity of his arguments and asked permission to continue his narrative. In the first three years of Iacocca's stint at Chrysler, the company lost a total of \$3.3 billion in three years, which was more money than any company in the world had ever lost during a similar period up to that time. By the end of 1980, the company had exhausted all the money raised with government support and was down to its last one million in cash, at a time when its DAILY expenditure was fifty million. Again Ray interrupted. "You seem to be making the case that things at Chrysler got even worse after Iacocca took over and the loan guarantees did not really save the company. Then what is the point of this story?"

Vinay resumed once again. Surveys of business and financial leaders conducted by the leading business journals in 1979 and again in 1980 were unanimous in concluding that the company was hopelessly flawed, doomed to bankruptcy and should be allowed to die a natural death. This was quite understandable considering that Chrysler was by far the smallest and weakest of the Big Three and the least able to withstand the blithering competition from overseas, which grew even more intense through the first half of the 1980's. That was the situation. What followed is corporate history. In 1982 the company started making profits. In 1984 alone it earned \$2.4 billion, which was more money than it had earned in all the fifty-nine previous years of its existence. That brought its three total earnings to \$3.3 billion. From 1979 to 1981, Chrysler lost an average of three million dollars every day and from 1982 to 1984 it earned a net profit of three million a day, a net improvement of six million a day or \$6.6 billion in three years. By the end of 1984 the company was able to announce retirement of the government loan guarantees seven years ahead of schedule.

"This raises an obvious question," Vinay said. "How is it possible that all the experts in America with all the minutely detailed information which they had at their disposal could have been proven so totally wrong? How could a company that virtually everyone believed would go bust do a 180° about-face and become highly profitable in so short a period of time?"

Vinay paused for comments. Ray shrugged his shoulders. Anya glibly pointed out that women had not yet been admitted to the top echelons of Wall Street at that time. It only proved that the male-dominated population of Wall Street experts were not very bright. Then Dan asked, "Vinay, I cannot recall what AIS³ had to say when we ran the Chrysler crisis in retrospect. Can you remind me?"

"I am just coming to that," he replied. "AIS³ went along with the experts. AIS³ also predicted Chrysler would fail. It grouped the company along with the doomed cases."

Dan interrupted. “Well, we already understand why that happened. We now know that AIS³ is a faulty product because it does not take into account the subtle power of organization to magnify the productivity of resources. But we have corrected for that in AIS⁴. You said a few minutes ago that AIS⁴ gave a prognosis of success in nine out of ten cases. So clearly it corrected for the error on Chrysler.”

“Not quite, Dan. Actually, AIS⁴ was wrong about Chrysler too. Chrysler was the one case AIS⁴ predicted would fail. AIS⁴ made a double error. It projected that Chrysler would fail and it projected that another company, which did fail, would survive.”

“Which means,” Ray interjected, “that AIS⁴ is even less accurate than AIS³. It means our underlying assumptions are wrong or our algorithms are totally flawed. Either way it means AIS⁴ is a stillborn child.”

Vinay shook his head in disagreement. “Ray, it is true that the prototype of AIS⁴ is not perfect and it was definitely wrong about Chrysler, as was AIS³, but remember what I said earlier. AIS³’s prognosis of success and failure was predicated upon implementation of the recommendations AIS generates. In other words, AIS³ said that if all ten companies follow its recommendations, seven of the ten would survive. The fact that only three survived only proves the failed companies did not apply the correct remedies, which we already knew when we ran the cases. It does not prove AIS³ was wrong. The one exception is Chrysler. Even AIS³ did not think Chrysler could be saved. According to AIS⁴, nine out of the ten companies could have been salvaged if its recommendations had been implemented. We cannot prove it is true, but we cannot say it was wrong. The only error we can clearly attribute to AIS⁴ is Chrysler. AIS⁴ also failed to see the possibility of saving the company.”

Anya, who had been listening quietly, interrupted. “Vinay, I am getting confused. You must be telling us all this for a reason. Even my mathematically-oriented Russian mind is finding it difficult to follow the subtle intricacies of your subtle Indian intellect. Spell it out for me in simple terms. What’s your point?”

“I have two points to make actually. The first has already been made by Ray. AIS⁴ is flawed. But I do not believe it is more flawed than AIS³. On the contrary, I think it is far more accurate. But we cannot prove that unless we actually take up a real turnaround case and implement its recommendations fully. Even if AIS⁴ is perfectly correct about how to turn around nine out of the ten cases, we also know for a fact that it was dead wrong about Chrysler, because it predicted failure, even if the company had followed its recommendations.”

Ray interrupted, “I’ve already made it clear, I think, that no program can be expected to anticipate or project the impact of a brilliant leader and a quixotic political decision by an unpopular democratic administration.”

Vinay replied, “That is where I would like to differ, Ray. I believe that the error committed by AIS⁴ does not relate to either Iacocca or the loan guarantees. To prove it, I ran another set of data based on initial conditions in 1980, that is, after the new loans had been completely exhausted and Iacocca had had two years to demonstrate his brilliant leadership. Still AIS⁴ came back with the same prognosis, failure.”

Then Dan asked, “If that’s the case, Vinay, then what do you think is the problem with AIS⁴?”

“I believe the problem is not Iacocca or the government. The problem is that our model is still incomplete. We have left something out. AIS⁴ factors in the power of organization. It also takes into account the impact of technology, market, people and finance. But there is still something missing. My own suspicion is that we have included all the key components that determine success, but we have not yet fully understood how they combine and work together. It shows we need to already be looking for a model beyond AIS⁴. But I am not ready to throw out AIS⁴ just yet. As I said, I think the product is much better than the statistics show, only we need to give it an opportunity to prove what it can do.”

“How can we do that?” Ray asked. “We have no control over what a company does with the recommendations we generate.”

“Well, suppose we could have control. Suppose we could find a company in trouble that would be willing to follow the recommendations of AIS⁴ without exception. Wouldn’t that provide the opportunity we need to prove its worth?”

“Yes, I suppose it would.” Ray replied. “But it’s highly improbable that any company would agree to those terms, so it’s just wishful thinking.”

“As a matter of fact, I believe I know a company that would agree to that arrangement.”

“And pay us for it?” Anya asked.

“Pay us if our recommendations result in improvements, yes,” Vinay replied.

“That sounds like a great opportunity, Vinay. Which company?” Dan asked.

Vinay then pulled out the presentation on Lempe and briefed them on the company, the current situation and the proposal. When Ray saw the financials, he drew back and shook his head. “This looks like a hopeless case. And we simply cannot afford to add additional staff for another project at this time.”

Vinay replied, “Perhaps you are right, Ray. But remember, Chrysler also looked like a hopeless case until after it turned around. But, even if it is, what do we have to lose? If it is a hopeless case, maybe AIS⁴ will agree with you and the matter ends there. If AIS⁴ says the company can be turned around, we have an opportunity to find out whether or not its recommendations are valid. Isn’t that exactly what we need? Until AIS⁴ is ready, I have no products to market anyway. Now the MAI teams are doing well on their own. I’m willing to focus on Lempe for the next few months. Give me Lauren and Eric Green. That’s all I ask. We will take up the project.” Anya looked surprised at Vinay’s choice of Eric and quite happy to get him out of the lab for some time.

After another half hour of discussion, Vinay was given the go-ahead to negotiate a contract with Lempe, if he could. After the meeting Dan came over to Vinay and congratulated him. “Vinay, I see the true romantic in you coming to the surface.”

“I suppose, you mean by that, the foolish dreamer, the Don Quixote,” Vinay replied.

Dan shook his head and smiled warmly. “No. I meant it as the highest compliment. I meant the true adventurer who is willing to risk everything for the joy of taking on a greater challenge. That is the true basis for romance.”

After the three partners had left the conference room, Vinay looked over at Lauren, raised his eyebrows, laughed softly and asked, “Are you ready?”

44. Robbery

On January 2, Dan left his Kensington apartment as usual and headed in his car for the office. Three blocks from his home, he drove down a narrow two lane road and stopped behind an old Chevrolet for a traffic signal at Arlington Avenue. The engine of the car in front of him went off and the driver attempted to restart it, but was apparently unsuccessful. The driver then got out of the car, looked toward Dan and walked toward his car. He was a large man in his thirties wearing a ski parka and hiking boots. As he approached Dan's car, he signaled something as if asking for help. When Dan rolled down his window a few inches, the man pulled out a hand gun and pointed it at Dan. Glancing into the car, he said, "Give me your wallet and that briefcase and no one will get hurt, but don't do anything foolish." Dan reached into his pocket, took out his wallet and handed it to the man. Then he leaned over and reached for the briefcase, turned it vertically so that the wide dimension of the briefcase was pointed toward the roof and floor of the car, as if to maneuver it past himself and the steering wheel. The briefcase was now between him and the man, but it was too big to pass through the small opening in the window. When the man told him to roll down the window further, Dan suddenly put his foot down on the gas pedal and turned the wheel sharply to the right, pulling his car into the parking lane to the right of the Chevrolet and turning onto Arlington Avenue before the man could react to his movements. By the time he looked back in his rear view mirror, he had already rounded a curve and the Chevrolet was no longer visible.

Everything had happened so quickly, there had been no time for Dan to think. In less than sixty seconds the man had emerged from his car, walked over, pulled the gun, taken his wallet and reached for his briefcase. It was only after the fact, that Dan became aware that his heart was racing and his nerves taut. He was driving too fast now and had to force himself to slow down. He glanced frequently in his rear view mirror for any sign of the Chevrolet, then he drove straight to the Berkeley Police Department off University Avenue, eight blocks from MAI. He parked, went inside and told the officer at the counter what had happened. The officer asked him to wait for a few moments. Dan welcomed the time just to calm down and collect his thoughts. Fifteen minutes later, he was shown into the private office of Inspector Ronald Byrne. Byrne was a tall, slim energetic and intelligent looking man with a friendly demeanor. Dan narrated the incident and gave a description of the man and the car, while the Inspector took notes. Dan could not help noting a somewhat puzzled look on Bryne's face.

"Armed robbery at a traffic signal at 8:15 am?" Bryne said as if questioning Dan's report. "It's the first time I have come across it, at least in this neighborhood. It sounds like an inner city tactic. Anyway, I am afraid Mr. O'Hara, that with the minimal description you have provided, it is very unlikely that we will be able to find the man or recover your wallet. I will notify our officers, just in case the man tries to make a habit of this sort of thing in our town. A word of advice to you. Unless you are carrying something extremely valuable in that briefcase of yours, it would be better to hand it over than to take the risk you took. I am sure your insurance will cover any losses you might incur. Even by accident, you might have been shot during that reckless maneuver with your car."

Dan left the police station and drove to the office. Only now his mind began to reflect on the incident calmly. He didn't care about the wallet. That was only a minor loss and inconvenience. But he could not help wondering whether the robbery had really been a spontaneous event. Could he have been the intended target and not just anyone who happened to come along in a nice looking new car? From what Byrne had told him, he understood this was not a frequent occurrence in these parts. Either the man was desperate and acted on impulse when he saw a single car parked behind him on a small street or it had been planned, quite possibly with him as the target. The implications of the alternative were frightening. It would mean that the attempted robbery at the gas station had not been a chance occurrence either. Dan had not mentioned that incident to Byrne. What good would it do? He could not possibly explain his anxiety. How to tell a police inspector that someone might be trying to steal a book of philosophy that he had found at Moe's two years earlier? It was preposterous and there was not a shred of evidence to support the notion. He felt, but was not even sure that anyone had ever forcibly entered his apartment. He felt, but could not be sure, that the attempted theft at the gas station could have been planned. But it was all baseless supposition on his part. Even if Byrne believed him, what could he do about it? The police cannot watch over every person and apartment complex in the area for months on end. If there was a real threat, he would have to deal with it himself and he would have to be even more careful about *The Book*. But, he told himself, it still seemed far more likely that the events were unrelated and the conspiracy was all a matter of imagination. He told himself, but he did not really believe it. He was no longer a materialist. He no longer believed in chance. But he did not know what else to believe.

Later that day Dan asked Lauren to contact a local security company and install a wall safe at his apartment. That night he carried home a few hand tools from the office and used them to pry off a small

section of the beading where the wall met the floor in one corner of his bedroom behind the door. He was able to cut the fiberboard behind it to make a small compartment, just large enough for him to insert *The Book*, and replace the beading so that it appeared the same as it had before.

Simon had observed the incident at the traffic signal from his parked car fifty yards down the road. He waited for the Chevrolet to drive off, and then he called the man on his cell phone telling him to hand over the wallet and collect his payment at the Safeway shopping center three blocks away. He didn't care about the wallet, but if the man got caught using one of O'Hara's credit cards, the police would find out that the robbery had been planned. Even if they could not trace it back to Simon, O'Hara would be alerted that he had been an intentional target. That would make things far more complicated than they already were. The professor was not going to be happy about this, Simon thought to himself. He had already told Simon that even his patience has its limits. This assignment was proving more difficult than Simon had expected and he was running out of options that did not involve overt disclosure of their intention. If *The Book* could be taken through an apparently chance event, then it might be forgotten. If O'Hara understood it had been planned, then who knows to what lengths he might go to try to get it back. It might initiate another cycle of the quest similar to the one Simon had been pursuing for years. The professor said he wanted to avoid that, if possible. Simon was beginning to doubt that it would be.

PART III: THE PROCESS

45. The Missing Link

*As we have discovered that Matter is only substance form of Force,
so we shall discover that material Force is only energy-form of Mind.*

The Book

MAI signed the contract with Lempe on January 20. The following Monday, Michael Lempe called to inform Vinay that his bankers, who had been financing the company for the past three decades, had just placed a freeze on the account and called in the loans. There was no way Lempe could pay back the bank anything at this point. This virtually closed the door on the only likely source of short term financial assistance. Vinay, Lauren and Eric began their work at Lempe the next day. Vinay found Michael surprisingly calm and composed for a man who had just had the final rug pulled out from under his business. Lempe even managed to retain his usual sense of humor, joking with the MAI team about whether they wanted to change their minds after hearing the news about the bank. Vinay replied that Michael's capacity to laugh about the situation only reinforced their conviction that a solution could be found to turn the company around. Lauren perceived that they both were trying hard to put up a brave face, but that neither of them were half as calm and confident as they appeared.

Vinay commented to his partners that the first two weeks at Lempe were the most demanding assignment he had ever undertaken. The work itself was fairly simple and straight forward. Their task was to understand the functioning of the company and gather information to feed into AIS⁴. The difficult part was meeting and interacting with the people. Most of them were either discouraged or frightened and eagerly looking to the MAI team for hope and for answers. The team spent half their time responding to employee questions about themselves and the prior accomplishments of MAI, much of it intended to assess whether their owner had made a wise decision in engaging MAI for the assignment. Most of those who asked went back unimpressed, unsatisfied or openly disappointed, in spite of Vinay's patient efforts to win their confidence. Then there was a small, but outspoken group of employees who were angry with the management or with other departments or individuals within the company or with their customers or subcontractors or the bank. Their response to the crisis was to blame other people and derive a perverse sense of satisfaction from the notion that they were the only ones carrying their weight and keeping the company afloat. A few of this group openly expressed their opposition or hostility to the appointment of MAI. They wanted to know how much money the company was wasting on another team of consultants and what competence MAI had to justify its role.

Vinay, Lauren and Eric came back each night from Lempe drained and exhausted. Although the physical work of meeting and talking with people was easy enough, the psychological weight and pressure of dealing with depression, opposition and even aggression sapped them of energy. Vinay found it increasingly difficult to joke or even smile during those weeks. Yet surprisingly, he noticed that as the days went by Michael Lempe seemed to look and feel progressively better. A few of the other people they began to work with also seemed to grow increasingly friendly and cooperative as the days went by and to invest greater confidence in Vinay and his team, though they had not yet done anything to merit it. Vinay knew that Lauren and Eric as well as Lempe looked to him for inspiration, an inspiration he did not feel within him. He became increasingly disappointed with his choice of Eric for the team. He had decided on Eric because of his ten years of experience as a project manager at McKinsey & Co. He thought surely Eric would have seen equally difficult cases as this and would offer useful insights for dealing with the situation. But he soon discovered that Eric's training and expertise were narrowly focused on handling specific technical issues and that he had no more idea about the big picture of managing a company than Lauren had, perhaps less. Lauren proved more useful. She was a great listener, naturally friendly and buoyantly cheerful, though even she lost much of her buoyancy as the days passed. People took or mistook her cheerful personality for an expression of confidence in Lempe's future and were heartened by it. She listened to them patiently as they cataloged their long lists of problems and frustrations, but always maintained a patient, positive outlook. Many felt elevated by their contact with her and sought her out with questions or suggestions.

In early February Vinay walked into Dan's office one morning looking and feeling exhausted. He had slept like a log the night before but woke as tired as he was when he went to bed. Dan looked up, smiled and read the whole situation on Vinay's face. "You need a good night's rest, Vinay."

Shaking his head, Vinay replied, "It's not rest I need. I slept nine hours solid last night. It's energy. I feel completely depleted. Not just me. I feel the whole of Lempe is depleted as well. Just being there is exhausting. You know I like meeting and interacting with people. But the moment I start talking to people there, I begin to yawn and have difficulty keeping my eyes open. It's like my body were being drained. Work goes on, everyone does their job, but everything is heavy and lethargic. It's not that the people are

lazy. It is like the very atmosphere of the place is in a coma. I learned a lot about organization running the MAI teams over the past few months. The funny thing is that Lempe has almost all the elements that are missing at MAI. They have the organization, structure, systems, policies and procedures. But it does not work the way it should.”

Vinay thought he perceived a change in Dan as he listened to the report on Lempe. From polite listening, Dan seemed to become more and more interested and curious, as if Vinay were telling him something very important, rather than merely complaining about the difficulties he was encountering, which was what he was actually doing. Perceiving that something was going on in Dan’s mind, Vinay stopped his monolog and asked Dan for his thoughts. “Something you said strikes an answering chord in me and I am trying to figure out precisely what it is. When you first presented the Lempe proposal and spoke about Chrysler, I agreed with you that something is still missing in our model. I have spent most of my time since then trying to find out what it is. Suddenly, I have the feeling it’s been right in front of me the whole time but I was somehow too blind or conditioned to see it. Your narrative made me realize what it is. It’s energy. That is what is missing at Lempe. That is why you feel so exhausted. That’s why their performance is declining and the ship is going down. Remember the quotation I put up at the company meeting four months ago?

Life evolves through growth of consciousness, even as consciousness evolves through greater organization.

The problem we have been confronting at MAI is with the second half of the formula, organization. It seems to me that the problem you are facing at Lempe is with the first—life! For some reason, the company has lost its vitality and is dying. When you showed the clip from *Gladiator* to our staff, it depicted two situations. A vital group of barbarians who were unorganized and the vibrantly organized Roman legions. Lempe is a third. It’s a group of people who have lost their vitality. If we can find out why and how they have lost it, we should be able to bring it back.”

As Dan was speaking, a memory flashed from Vinay’s early childhood. He had gone with his parents when they went to visit a distant relative in rural Kerala, a paternal great uncle of Vinay’s, to personally invite him in the traditional manner to the wedding of one of Vinay’s close relatives. When they reached the man’s home, they were informed that he had been hospitalized with a serious illness. His father decided to proceed directly to the hospital to see the man. When they arrived, the man’s wife was sitting in the reception area in tears. Vinay’s father approached her and asked about her husband. She mumbled something and burst out crying. A few moments later the doctor came out to meet them. He said that the old man was in coma and dying and unlikely to last the week. When Vinay’s father asked what was wrong with him, the doctor replied that he was simply dying of old age. The uncle was past seventy, an advanced age in those parts. His pulse was weak and blood pressure very low, but apart from that they were unable to diagnose any specific ailment. The uncle remained asleep and unresponsive, except for rare intervals of lucidity.

His father asked permission to visit his uncle. Thinking it would be the last time any of them saw the man alive, he told took his wife and Vinay to come along with him. The uncle was lying motionless on the bed. After a few minutes, Vinay’s father went up to him, bent down and whispered something into his ear. From a distance, Vinay thought he perceived his uncle twitch slightly, but then realized it must have been his imagination. Again his father bent down and whispered. This time Vinay was sure he perceived some movement in his uncle’s body. His father repeated the exercise several more times. Finally his uncle opened his eyes, looked at Vinay’s father and mumbled some faint reply. The exchange continued in this manner for another fifteen minutes. Each time his father spoke, his uncle seemed to gain greater energy and movement. Now they began to speak loudly enough for Vinay to hear something of their conversation, although he could not piece together the significance of what was being said. Gradually his uncle became more animated and then excited. He grabbed Vinay’s father’s hand and shook it vigorously. He asked for water. Then he said he wanted to sit up. His father helped him rise to a sitting position in the bed. Only then did his uncle perceive Vinay and his mother standing in the corner. His uncle looked surprised and smiled. He reached out a hand and they both went over to embrace him. He began to laugh and chat. Then the old man’s wife came into the room with a look of total bewilderment on her face, shouted for joy and ran to her husband. Vinay’s family quietly withdrew. Once outside, Vinay asked his father what he had spoken to his uncle that could account for the man’s miraculous recovery. His father explained that his uncle had always been poor and longed to build a house of his own. It had been his one unfulfilled wish in life. Vinay’s father had promised that the family would provide him with the money needed to fulfill that wish. Vinay was unable to believe his ears. The prospect of finally owning a home of his own had literally brought the man back to life. They were later informed by their aunt that her husband had checked out of the hospital later the same day. Within a year, he had built a small house. The incident had occurred at least twenty years earlier

and his uncle was still alive. The entire scene replayed itself before Vinay's mind in a few seconds. He laughed at the memory and then his attention came back to what Dan was saying.

"The key for us," Dan continued, "is to figure out how to restore life and bring back the energy." That was it, Vinay agreed. He had to do to Lempe what his father had done to his uncle. He had to whisper the right message into people's ears to restore their hope, confidence and initiative. Without that, no strategy would work. He had to do what General Savage had done to the 918th Bomb Group. He had to give them hope that they could succeed and channel every drop of their energy into constructive actions that would lead to a solution, rather than allowing it to languish in self-destructive despair. They had to breathe new life into Lempe as Iacocca had done at Chrysler after the whole world had given up hope of saving the company. The question was, how? How could they create something out of nothing? How could they create something that wasn't there in the first place? There was no charismatic Lee Iacocca at Lempe, not even a hard driving General Savage who could extract the last ounce of effort and discipline out of his flight crews in an effort to help save their lives. There was only Michael Lempe, Lauren, Eric and himself. This was not the military during war time where you can order and compel people to obey. This was a company of fairly prosperous people, many of whom could find jobs elsewhere and did not depend on Lempe for their survival. How to create that energy and intensity under circumstances like this? He thought of his uncle again. After all, what had his father done? He had given him hope. He had reawakened a sense of purpose and mission for his life.

Dan had stopped talking and was quietly watching Vinay and following his line of silent thought. How do we create something out of nothing? How to put life back into something that has lost it? It was almost as though their thoughts were proceeding on parallel lines even without a verbal exchange. The few sentences each spoke were mere check points where their paths crossed periodically. Their thoughts met again and were translated into words. First, the people. It had to start with the employees at Lempe. "We have to start by renewing their sense of purpose and of hope," Vinay said out loud. "How we do it is secondary. But we have to get everyone on board, leaving no one behind."

Dan thought of another passage he had recently read in *The Book*. It suddenly occurred to him that he had been asking the wrong question. They did not have to put life back into the company, like some Dr. Frankenstein trying to energize a bunch of spare parts to make it behave like a human being. They simply needed to realign the company to express the life and the energy that were already there, in and around them, in their own people and in the world outside. Both were seething with energy, like the microwaves and radio waves saturating the atmosphere of urban California with radio, TV, cellular phone and wi-fi connectivity. They needed to tune in. Dan looked over at a sheet of paper on the corner of his desk and pulled it toward him. It was another article from the *Archives* which he found the day before. He picked it up and read the sentence he had marked in blue.

An organization is a child of the society, born of its needs, energized by its aspirations, expanding as it expands, evolving to keep pace with its changing needs. When it stops growing, it begins dying.

Then he pushed the paper over for Vinay to read. "*Gladiator*," Dan said out loud. "The problem of Lempe is depicted in the movie too. The movie shows Rome at the peak of its power, just before it began its steep, centuries-long decline into oblivion. What happened to that great and powerful empire, the greatest the world had ever known, which united nearly all of Eastern and Western Europe, Mesopotamia and parts of North Africa? It was not conquered from without. It had withered and died from within. It became an ossified organization sapped of the vitalizing ideas and purpose that had spurred its growth and the energy that came from liberating, unifying and elevating foreign peoples to the status of citizens of Rome. Lempe grew during and after the war because it was in tune with the expansive commercial climate in California and run by a leader with a strong aspiration to achieve at a higher level. But today you describe a company that is out of touch and divorced from what is going on around it, living on the legends of its past like a museum for Liberty Ships. You describe Michael Lempe as a capable manager trying to hold on to what his father and grandfather created, not a leader attuned to the emerging opportunities with the expansiveness needed to grow his company. Instead of trying to understand what Lempe is, you need to start perceiving what it is missing, the opportunities concealed by its current opinions and attitudes.

"You were right about AIS⁴, Vinay," Dan continued. "It is incomplete. Essentially AIS⁴ views a company as a complex organization of interrelated and interdependent parts. AIS⁴ failed to take into account the fact that that organization is alive. *A company is not merely a complex organization. It is a living organism.* We have accurately identified its components and defined its structure or anatomy. We have also mapped out the complex network of systems and processes that link those structures together and constituted the physiology of its functioning. But still we have failed to take fully into account the single most fundamental characteristic that distinguishes living organizations from mechanical systems—the endogenous

energy originating from within itself that drives all its processes and is the source of its vitality or life force. Mechanical systems and organizations are powered by an external source of energy. Living systems generate energy endogenously. You once told me that you were discovering the nanotechnology of complex organization at MAI. What we need to discover at Lempe is the nanotechnology of a living organization.”

46. The Formula

To know the results is not knowledge. One must know the energy that created those results.

Energy released fulfills itself. Energy decides. Energy alone decides.

Energy comes from will... Self-conception releases energy.

The scientist asks whether the energy is conscious. All his work is to increase the efficiency of energy, i.e., to make it do more work. An energy that increases is conscious energy. Consciousness is creative, creative of energy.

Emotion energizes.

Messages

That night Dan went home early and searched the Internet for additional *Archive* material linked to energy and organization. He was nearly overwhelmed by the response. He discovered a formula. It embodied a whole new way of viewing life processes and organizational dynamics. Instead of dissecting each situation into components and subcomponent parts *ad infinitum* by the mental arithmetic of continuous division until everything had been reduced to the infinitesimal, like quarks and leptons, the formula viewed all the elements and components of any event as aspects of a single, unified, living dynamic whole and mapped the processes by which it generated, released and utilized energy for growth, expansion, development and even evolution. The whole process was succinctly summarized in a word formula.

Aspiration releases energy. Direction converts the energy into force. Organization transforms the force into productive power. Skilled action applies the power to generate results.

The formula seemed extremely abstract and difficult to grasp, until Dan applied it to his own self-experience. What is it that released his own energy? A quest, an unfilled want, a reaching for something beyond his present level of knowledge, accomplishment or experience. In short, aspiration. He knew from his own experience what happens when aspiration is lacking. He had known people, bright, talented people, who were fully satisfied with themselves, their position, the status conferred on them by their families. He had studied with some of them at Caltech and Cal. He had worked with them at the PARC. For all their capacity, their accomplishments were minimal, because there was no voltage differential between where they were and where they wanted to be. He also understood the importance of direction, having a mission, a goal, clear objectives. Direction expressed aspiration and became a channel to convert energy into force, just as physical energy becomes a force for work only when it is applied at a specific point in a specific direction. Before finding *The Book*, he had had an aspiration, vague, undefined but powerful, compelling him to search he knew not for what, a constant sense of thirst or dissatisfaction with all he learned. *The Book* had come in response to that aspiration. It provided the knowledge required to convert the energy it released into force. The idea of creating an AI system that could really change the world had been a dream since his youth. *The Book* provided the knowledge that convinced him it was possible. MAI provided the organizational vehicle necessary to transform that force into productive power. He felt that way about the company. It was not his company to own and do with as he pleased. It was an instrument given to him to fulfill an aspiration and express a knowledge. Without *The Book* he was blind, without MAI he lacked the capacity to express the knowledge in work. And then the final variable in the formula, skill. No one needed to tell him how important that was. He felt the need for it, or rather the absence of it, every day, sometimes in every action. Knowledge and organization were not enough. He needed the right skills to channel the power into practically effective action. Often he had seen his efforts flounder or fail for want of a small endowment—the capacity to listen, to engage people and win their confidence, to give an instruction or explain an idea clearly, to analyze a problem or make a decision.

Dan saw the process at the personal level and then tried to extend it to the company. Wasn't it the very same thing? MAI too had an aspiration that released energy for accomplishment. It was an embodiment of the shared aspiration of the four founders, enhanced and multiplied by all those who joined and consciously identified with it, as Lauren, Jean, Randy and Allen had done. He had appealed to that aspiration and felt that energy at the company meeting when he addressed the MAI employees in the very same terms he had appealed to his own mind and emotions, and they had responded. MAI too had a direction—a mission, goals, objectives that converted energy into force for action. Dan knew how much they had floundered before they finally arrived at a clear vision of what they were trying to accomplish at MAI, which really happened only with the birth of AIS¹. MAI had lacked and was now in the process of acquiring an effective organizational structure to transform that force into power and systems to efficiently deliver it to specific points of application, just the way a hydroelectric power plant transforms the raging kinetic energy of a river into electric energy that is distributed through cables to energize a city. And all that productive power would

yield very little results were it not for the wide range of financial, commercial, technical, organizational, management and people skills which the company possessed, though never sufficiently to match its needs.

The following morning, Dan called a meeting with Vinay, Anya, Ray and Lauren to share the formula with them and discuss its application to Lempe and AIS⁵. As soon as they sat down, Vinay said, “Remember that conversation after the conference in Ft. Lauderdale about predicting commercial outcomes? Dan, you spoke about *In Search of Excellence* and Anya mentioned the Harry Potter books. Well, take a look at this.” He passed around copies of a print out of a webpage about a newly released DVD entitled *The Secret*. Then he explained that it had been created by an Australian television producer, Rhonda Byrne. “It was inspired by a book entitled *The Science of Getting Rich* written by a man named Wattles in 1910. When I first saw the video clip, I wondered if it might possibly be connected in some way with *The Book*. So I searched the net and read some extracts and found that I was completely wrong. But I thought it might be an interesting test case for us. Dan, you said six years ago an AI system could predict the outcome of events like this. So I thought, why don’t we give it a try? It seems that Byrne tried getting it aired on an Australian network but she was turned down. In a few days she is planning to release it as a video exclusively available over the web.”

“It sounds like it’s worth a try,” Dan replied. “It may be a good test for AIS⁵. I’d like to share some ideas I came across last night.” The concept of energy was intuitively appealing to all of them. As leaders of their own company, they knew how important it was for their accomplishment, individually and collectively. Vinay recalled that when he read Lee Iacocca’s autobiography, he was struck by Iacocca’s frequent use of the word energy to describe his efforts to turn Chrysler around. Ray remembered Henry Kissinger saying that when met Chairman Mao the whole room seemed to radiate energy. Kissinger himself had often been described as a high energy individual. Vinay said that several people he knew who had met Prime Minister Indira Gandhi during her lifetime described her as a powerhouse of energy that radiated and subdued everyone who came into contact with her. Those who accomplish in life know the central importance of energy by experience first-hand, even though it never appears as a topic in an MBA curriculum. Energy is a reality, but it has not yet become a theoretical concept in science.

Then the discussion turned to consider various methodologies by which they could assess the process of energy conversion at Lempe and the possible methods for improving the efficiency of that process. Ray was fascinated by the formula and began considering it from various points of view. He raised a number of questions for which Dan did not have an immediate answer. The first was regarding the sources of energy in the formula. Was aspiration the only process that generated energy? Couldn’t inspiring ideas or goals, improved organization or higher levels of skill release it too? *The Book* not only came in answer to an aspiration, it seemed to Ray. It also became a continuous source of fresh creative energies. Anya agreed. She was quite sure that reversal of a self-limiting opinion or narrow attitude could release fresh energy as well as focus it. She had seen it in her own case, when she changed her attitude to Jean. It not only reduced friction, it was also refreshing and enlivening. Vinay saw that the same thing was true of skills. Learning or improving a skill, such as touch typing or mastery of a software application, certainly improves the speed and efficiency of energy usage, but doesn’t it generate fresh energy as well? Vinay recalled the energized feeling he had during a week of training by a professional golfer, while he was working at Rothman & Lazurus. Tiny modifications to his grip, stance and swing had given him a sense of exhilaration. Uproarious laughter followed, when Anya remarked, “I felt the same thing when I finally mastered the Chakravala cyclic algorithm for solving indeterminate quadratic equations.” If energy was somehow latent in each of the four stages or processes, that would explain why it could be enhanced exponentially, rather than just by an efficiency factor.

This led to another of Ray’s thought-provoking questions. What precisely was the relationship between the four stages of the process? If it was additive, it would mean that any improvement in one part added incrementally to the overall result. If it was multiplicative, it would mean that any improvement in one part multiplied the overall performance of the system as a whole. Ray framed an analogy to the efficiency of a physical system. “Imagine I start out with an input of one hundred units of energy and pass it through a four stage process. Let us assume that at each stage of transmission, I achieve only ninety percent efficiency of throughput. That means only ninety units pass through to the second stage, eighty-one units pass through to stage three and I will finally end up with sixty-six units output. That would explain what is happening in companies like Lempe that are continuously shrinking. Each successive stage of activity results in a slightly lower energy level than the previous stage. Each stage operates at ninety percent efficiency, but the overall performance of the system is only sixty-six percent. The same thing happens when information is verbally transmitted, becoming less complete, more distorted with each successive stage of transmission. “Now suppose, instead,” Ray continued, “that I have a system in which each stage is capable of boosting the output of the previous level by ten percent. The same hundred units input generates an output of one hundred and

forty-six units. If the rate of amplification is one hundred percent, instead of ten percent, then the same input generates an output of sixteen hundred units. That would explain what happens in high energy, fast-growing companies that multiply in size, doubling or tripling revenues and profits for several years in succession.”

Based on this discussion, Vinay and his team prepared a list of questions to be answered by different levels and functional groups of people at Lempe in an attempt to capture what was happening to the energy at each stage of work process. Meanwhile Ray decided to go back to the Chrysler case and see if an analysis of energy conversion could shed additional light on how the company had turned around. He conceded that he may have been unjustifiably critical of Vinay for citing Chrysler as an example and he wanted to re-examine his own opinions about it. “Who knows,” he jested, “maybe changing my opinion will energize me!” Anya said she would begin work on evolving algorithms to translate and incorporate the formula in AIS⁵. Lauren sat quietly through the meeting, amazed at the energy and creativity of the four partners, but equally by the complementarity of their individual capabilities and the harmonious way in which they blended them with one another. She felt elevated and energized just being there.

During the next week, Vinay, Lauren and Eric administered questionnaires to more than five hundred staff of Lempe and brought back the results for compilation and analysis. At the same time, they went back to key people they had interviewed earlier with another set of questions and a different way of listening to what they were being told. Both the survey results and the interviews revealed the same pattern. The whole structure and functioning of Lempe was constituted in a manner that resulted in a fragmentation, dispersion and wasteful dissipation of corporate energies. The company as a whole lacked an aspiration beyond that of mere survival and self-preservation. It lacked a direction capable of inspiring people to greater effort. Prevailing opinions veiled windows of opportunity that surrounded the company. Tightly sealed attitudes barred doors for new initiative. The organization was top heavy, lethargic, bureaucratic, rule-bound, unresponsive. Authority was concentrated among a few. Decision-making was slow. Communication and coordination were inadequate and often lacking. Systems were cumbersome and enervating. Lempe had talented and experienced people, but people were often assigned to positions for which they were less qualified or lacked adequate training, like a pro football team in which everyone plays whatever position happens to be vacant at the moment, irrespective of how well it matches their skills and capacities.. When Vinay and his team pieced together all the evidence, they wondered how the company had even survived this long.

By the time they completed the analysis of Lempe, Ray had completed his study of Chrysler and had come up with some fascinating observations. He said it looked as though Iacocca had been applying the energy formula in all that he did at Chrysler. He may not have been conscious of it, but his actions were fully consonant with the knowledge inherent in the formula. That helped explain why Chrysler’s performance had defied the predictions of all the experts. That was why they were able to reverse heavy losses into huge profits in so short a time, in spite of the impossible circumstances they were in. That was why they had been able to retire the government’s loan guarantees seven years ahead of schedule. Iacocca had found the key to not only conserving energy but multiplying it at various levels of the company. When Ray sought the strategy Iacocca had employed to achieve these results, myriad apparently separate and independent initiatives all fell into a single common pattern. They all focused on raising qualitative performance of the organization in order to generate higher quantitative results in terms of revenues and profitability. Iacocca had focused on elevating the company’s performance on key work and organizational values. He improved discipline, increased freedom for individual initiative, raised product quality, accelerated product development, insisted on close coordination between functions, enhanced service to customers, collaborated with the unions through a partnership with the United Auto Workers, communicated frankly and openly with shareholders and the public-at-large, etc. “The beauty of his strategy,” Ray explained, “was that it gave every employee at every level of the company a higher standard of performance to which they could aspire and a personal means by which they could directly participate in the turnaround of the whole company. Iacocca engaged his people, released their energy, captured their imaginations with a new vision of what the company could become. And what they conceived as possibility, they converted into actuality within a phenomenally short span of time.”

Even before a full beta version of AIS⁴ was ready for testing, Anya worked day and night to factor the same strategy into the prototype version of AIS⁵. They ran the Lempe data on both systems and asked the program for a prognosis and recommendations. The difference between the two sets of findings was striking. AIS⁴ concluded that Lempe had already put in place the essential organization for high performance. It rightly assessed negative opinions and attitudes that were limiting the company’s performance, but it was unable to diagnose the deeper reasons for failure or formulate recommendations to rectify the situation, so it gave a poor prognosis for the company’s survival. AIS⁵, on the other hand, identified countless points in the company that were absorbing, discouraging, dispersing or dissipating energy and graphically portrayed both

the processes and the results. It then identified literally dozens of points within the organization where energy could be generated, released, directed or channeled to achieve higher results. At each point it recommended a corrective action to reverse the energy flow. It proposed means to convert hundreds of tiny black holes that absorbed all the energy within its perimeter into supernova that release and radiate enormous quantities of energy for productive work.

47. Mirror Images

Contradictions are complements.

Death makes life immortal.

The Book

The results generated by prototype AIS⁵ were so impressive that they immediately ran a similar analysis and results for MAI. When they compared the results for MAI and Lempe, they stumbled on another discovery of potentially even greater significance than the energy formula. Although they did not yet fully understand the importance of what they had found, they had glimpsed a deeper creative principle of life—the principle of complementarity.

The discovery arose from the realization that the two companies, MAI and Lempe, were mirror images of one another. MAI had abounding energy, a clear direction, unlimited technological and market potential, and creative, enthusiastic people, but too little structure through which to channel that energy effectively and multiply its power to tap even a fraction of its potential. Lempe had a highly developed structure, well-developed policies, systems and procedures, and a disciplined work culture, but the source of its life energy had somehow dried up. It had lost its direction and momentum. Its structure had become an impediment slowing down and entangling each action in a bureaucratic mass of lethargy. The two companies were complements, two sides of a coin. Each possessed something that the other very much needed. On the one side, a young, exuberant youth in the first flush of its growth with boundless energy bursting forth and spilling over on all sides with expanding horizons, endless opportunities and no apparent limits other than those imposed by its own imagination. On the other, an experienced professional with a long track record of accomplishment tottering on the edge of obsolescence, slowing down, losing interest, lumbering forward, each step a little more difficult and painful than the last, tired, disappointed, without a vision of the future and no longer sure that it cared.

Youth and age, how much they have to offer each other! If only in our youth we could possess the knowledge and wisdom that comes with age and the discipline to live by what we know. How ironic it is that by the time we actually have plumbed the secrets of life, it is too late to affect the course of our own destiny and we can only offer advice to others. If only these two—the youthful entrepreneur and the mature professional—could exchange their knowledge and inspiration! Old world maturity married with new world energy and freedom. These were some of the thoughts that the team pondered and discussed as they shifted attention back and forth between two worlds—the old mechanized world of sophisticated precision manufacturing and the emerging world of electronic intelligence—one governed by Germanic discipline and structured physical perfection, the other by radical individualism and boundless mental imagination. Somehow the process of bringing these two complementary realities together in their contemplation seemed to bring them closer in reality as well. By contact with Lempe, MAI acquired firmer form. By contact with MAI, Lempe acquired new life. Could such things really be contagious? The results in both cases were as welcome as they were unexpected.

A fast growing company and a slowly dying one. The contrast between these two companies revealed a deep truth of life. Energy without structure is extravagant wastefulness that accomplishes little, like the playful exuberance of the young child that spills over in all directions in purposeless activity for the sheer joy of movement, exploration and discovery. Structure without soul is living death. MAI needed to grow up. Lempe needed to forget its age and rediscover how to be young. They discovered in the differences between the two companies the constant tension between consciousness and organization. New inspirations become powerful and effective only when they acquire organized form, but the very act of organizing that inspiration tends to transfix life into inanimate patterns that sap it of its inherent vitality. Jesus came with a powerful and inspiring message for the world. The church that was founded to spread that message, buried and suffocated it with doctrine and ceremony—the very act of trying to define and package the message for wider dissemination killed the truths he came to spread. So too, a government founded of the people, by the people and for the people to incarnate freedom and equality for all quickly morphs into a rigid structure that confines and limits, replaces idealism with self-interest, spirit of truth with backroom bargaining and expediency. Organizations die because in the very act of their development they kill the spirit which gave them birth. In order for that spirit to be reborn and express itself, the old, ossified forms have to die. Their very death enables new forms to arise that are better able to express that spirit.

Since the October company meeting, MAI had succeeded in putting in place much of the structure and infrastructure that had been missing earlier. By January they had begun to record substantial improvements in speed, productivity and new product development. That was one of the reasons that progress on AIS⁵ was able to leapfrog several stages and advance almost in tandem with AIS⁴, working on a higher level of program structure in the latter version that could immediately be superimposed on each lower

level as soon as it had been perfected in the earlier version. They relied on AIS⁴'s capabilities to develop a detailed analysis of every activity, system and job in the company, broken down into individual tasks and steps. Realizing the entire effort would take months to complete, they had first identified critical tasks and problem areas in each department and concentrated on improving coordination there. The results were spectacular.

Having become conscious of how different and complementary the two companies were, virtually everyone was surprised and a little disappointed to find that AIS⁴'s recommendations for both companies were so similar and so mundane. In both cases, AIS⁴'s first recommendation was for a concerted drive to elevate cleanliness to the highest possible level. While people at MAI balked at the idea that the world's most sophisticated AI system had made such a prosaic recommendation, Lempe thought it was an excellent idea. He told Eric that the company used to be maintained in an absolutely spotless condition by his father and grandfather. Even old machinery used to be polished daily by the machine operators, rather than the contract housekeeping staff that Michael now employed, who did not seem able to maintain the old standard. "When I was a young boy, my grandfather used to walk through the factory with clean white gloves on, rubbing the machines, sticking his hand into dark corners, sliding them along storeroom shelves, touching the light bulbs, switchboxes and even the generators—lifting his hand so everyone could see the smudge of grease or trace of dust, looking sternly without ever saying a word—and then coming back the next day to the very same spot with a clean pair of gloves and repeating the process until he could no longer find any way to stain his gloves. Grandfather used to also insist that every machine be maintained in perfect running order, even if there were no orders for it; whereas now-a-days to save time and money on purchasing spares, we frequently cannibalize parts from machines in disrepair for use in machines we are currently operating." Lempe said these had been rules that were followed without exception or compromise during the days when the company was growing rapidly and churning out high profits. Rather than raise skepticism, AIS⁴'s first recommendation enhanced Lempe's confidence in us, prompting him to remark, "How could your system possibly know that I needed to clean up the shop? Only now I realize how far I have neglected the basics of this business and allowed our operating standards to fall. The little things do matter—they matter big!" Eric reported back that Lempe implemented the recommendation with great zeal and speed and reported an enthusiastic response from his staff—it's the first time I have seen people excited about in months!"

After hearing Lempe's response to cleanliness, people at MAI dropped their own objections and decided to launch a major drive to clean up MAI once and for all. MAI might be high on technology but that was no excuse for being sloppy and disorderly. AIS⁴ generated a detailed methodology for measuring levels of cleanliness and orderliness, allocating responsibilities, systematically monitoring and implementing procedures, and providing feedback to staff. It was all such basic stuff, that no university would bother to teach it to freshman students in Management 1A, but perhaps they had all forgotten the power of fundamental truths practiced in earlier times. Ray was the first to observe that the improvement in physical order seemed to be improving the clarity of people's thinking and working as well.

AIS⁴'s second recommendation raised eyebrows almost as high as its first. Increase the speed of every routine operation. MAI had already tackled the issue of speed on a few critical activities, but AIS⁴'s recommendations were at once more comprehensive and more detailed. Ray protested that Lempe would never accept such a broad, time-consuming and comprehensive recommendation at a time when they were virtually out of money and Vinay too voiced a doubt. Again Lempe surprised them. He instinctively understood the value of elevating routine performance. Besides, he said, he liked it because it was something that everyone could do. "We can get everyone involved immediately in constructive action to improve performance. At the very least it will take their minds off their problems, complaints, bickering and mutual accusations against one another." Michael himself came up with the idea of benchmarking his company's performance on routine activities against the top performers in his industry. The same week he sent a team to a nearby company that manufactured non-competing equipment using similar processes. The team came back flabbergasted by the difference in performance between the two firms and quickly developed an action plan to reduce the discrepancies.

MAI had always prided itself on its entrepreneurial, intelligent, seat-of-the-pants approach to completing any job faster while expending fewer resources than anyone else. On closer analysis the teams found that high performance on rush jobs was not carried over to important recurring activities. They were months late conducting semi-annual reviews of their subcontractors and negotiating new contracts, conducting performance reviews of their own staff, projecting staff requirements and recruiting new people, designing and conducting orientation and training programs for new staff, analyzing customer satisfaction surveys, reviewing literature on technological developments, etc. The list of delayed or incomplete tasks seemed endless. Each department was asked to suspend activities for one day and prepare a complete list of the recurring tasks that fell within their responsibility, to assess current status, set standards for performance

and develop action plans to achieve those standards. A task force was set up to review department reports, approve or return them for revision, and to design a system to monitor performance on two hundred and fifty recurring tasks in the company on a monthly basis. They shared methodologies with Lempe and adopted similar approaches. A joke started circulating around MAI a week after the task force began implementing the new system. The joke was that faster the things moved in the company, the faster the demands for work seemed to grow as a result of new business coming in. Their clients seemed to be taking decisions faster too and pressing MAI for ever faster performance than in the past. They laughed at the correspondence between their effort and life's response, but began wondering whether it could actually reflect a profound truth of life rather than a mere coincidence.

AIS⁴'s third recommendation to both companies was to improve inter-departmental coordination. Ray proposed a simple method of analysis which was implemented simultaneously at Lempe and MAI. They asked each department to identify all the tasks on which it needed to provide decisions, information or other action to enable other departments to complete their work; and also on those where they depended on other departments for the decisions, information or actions they required to complete their own. They then asked each department to assess its own performance in providing this support and to rate the performance of other departments in supporting their work. All the data was collated and analyzed. It enabled Lempe to identify more than three hundred coordination points that were performing sub-optimally. Task forces were constituted to examine and propose changes to eliminate all instances of suboptimal performance. Michael reported that by the time the task forces got around to examining individual issues, more than fifty percent had already vanished. Greater awareness had already eliminated the problem. Policy decisions, modification of systems and procedures, greater discipline and more training removed most of the coordination gaps within six weeks. Michael reported that work flows accelerated dramatically and the number of problems being reported to him for resolution fell by more than fifty percent. He joked "Things are working so much better, I am being worked out of a job!" Vinay retorted that Michael's real job was to focus on strategic issues needed to grow the company and now he would be in a better position to do just that.

Before MAI could complete implementation of AIS⁴'s recommendations, much of the work had to be suspended in mid course because the company was inundated by two new major contracts that demanded all their available resources to meet pressing operational requirements. The partners knew that they should not subordinate organizational development to operation pressures, but they were unable to manage the immediate situation in any other way. MAI began growing, growing rapidly. In the next three months, revenues rose by fifty percent and brought in sufficient cash flow to eliminate the shortage of funds.

The results at Lempe were quite different but equally dramatic. Customer complaints on quality and service problems declined by twenty-five percent in two months, mainly in response to a change in attitude within the company that got communicated to customers. Speed of output increased by almost ten percent, which Michael considered almost unbelievable. That meant he was generating ten percent more output based on the same overheads, which meant significantly higher profit margins. More surprising, was a breakthrough Lempe achieved in obtaining export approval for some critical equipment used in the defense industries and subject to control by the Federal Government. In the past Lempe had found that it took an average of thirty-two weeks to obtain approval after submission of a complete application. Since the rules were complex and often additional information was required, the actual time for approval sometimes went as high as forty or fifty weeks. Eric worked with a team of Lempe engineers to analyze the approval process. To their surprise they found that with advanced planning and perfect coordination it should be possible to reduce the time to twenty-two weeks or even less. They began implementing the new approach immediately and the next approval came in sixteen weeks, an unheard of accomplishment. The ironic thing was that this approval was already half through when Lempe began implementing the new approach. It was almost as if the government had begun responding to their greater effort as soon as Lempe started addressing the problem, without even waiting for Lempe's actual behavior to change. There was no other way to explain it. Anyway that incident was soon forgotten when the company obtained their next license in twelve weeks.

How Lempe managed to survive its financial crisis long enough to even implement all these changes seemed a miracle. Michael explained it this way: "By our own efforts implementing AIS⁴'s recommendations we improved our cash flow by about ten percent. A change in the attitude of one of our major suppliers—he said he sensed we were making a very serious effort to improve our performance and he wanted to support us—we received a desperately needed extension of additional credit on raw materials and components. A Japanese buyer offered fifty percent advance for an accelerated delivery schedule on three large pieces of equipment for China and a ten percent bonus if we beat the schedule. Earlier I would have said it was impossible, but with the changes I had already seen within the company I thought we should take the risk, even though it involved a major penalty for failure. We met and beat the schedule, got both the

advance and the bonus, and then a follow-on order from the same party for another three pieces of equipment for a sister plant they decided to set up in India.”

By early March the prototype of AIS⁵ was already generating new sets of recommendations for both MAI and Lempe—one hundred thirty-seven for Lempe, one hundred forty-one for MAI. These became the blueprint for their further initiatives. Again they were surprised and disappointed to find that the first three recommendations were virtually identical to those generated by AIS⁴, raising concerns that there was no significant difference between the versions of AIS. But on careful analysis, they did discover a significant difference: AIS⁴'s focus was on recommendations to elevate operational efficiency to peak levels in the shortest possible time; AIS⁵'s thrust was on raising the energy of each company to peak levels, focusing that energy with pinpoint precision, channeling it more effectively by reducing all points of friction within the system, and elevating skills for perfect execution. AIS⁴ fashioned a finely-tuned precision machine. AIS⁵ gave life to a vibrant, harmonious and rapidly growing organism. Whereas they had been trained as engineers to look at a company in terms of structure and systems, AIS⁵ viewed it as a harmonious balance of energy flows, for which the closest analogy is the functioning of the human body.

But the greatest difference between the two programs revealed itself only when their recommendations were viewed from the perspective of each individual employee. Simply stated, the objective of AIS⁴ was to maximize the performance of the organization, while the objective of AIS⁵ was to energize the performance of every person in the company. AIS⁴ viewed the organization as whole and the people as components of it. AIS⁵ viewed each individual as an organized, integrated whole, who also participated in the work of a larger whole, the organization of the company. AIS⁵'s recommendations were so conceived that they fostered greater participation, productivity and identification of each individual with the work of the company. They provided far greater freedom for initiative, self-expression and creative contributions. They removed roadblocks and obstacles so that the minds and hearts of the people expanded and were energized. The authority, discipline, responsibilities and work requirements that had formerly been the principal factor motivating individual performance were increasingly replaced by interest, enthusiasm, the thrill of the challenge and the satisfaction of the achievement. People began to produce more and better quality product for the sheer personal gratification they derived from creative self-expression.

The shift in emphasis brought about by AIS⁵ generated tangible results at Lempe. During the first month under AIS⁴'s regime, speed and efficiency had improved markedly. During the following two months after implementation began under AIS⁵ the company acquired a level of buoyancy and enthusiasm that Michael said he had not seen since his grandfather's days. Lempe's financial performance reflected the change as well. Although implementation had only begun during the second half of the quarter, Lempe's revenues were up by six percent in the first quarter of 2006. Quarterly earnings were up by six million dollars and cash flow had improved even more. Pending orders for delivery during the second quarter were already up by seventeen percent over the previous year. Under their profit sharing agreement, twenty-five percent of the increase came to MAI as consulting fees. Lempe paid an initial \$1.5 million in April, which gave MAI sufficient funds to operate for another two months. More importantly, the Lempe experience had convinced the partners of an almost unlimited potential for the growth of MAI, which they had never seriously contemplated until the first payment from Lempe arrived. For the first time they had a product they could market widely, a product that could create its own market by generating profit for other companies. Vinay's mind reeled under the thought. If AIS⁵'s consulting capabilities could be marketed to Fortune 500 companies, MAI's revenues could jump overnight from millions to billions. If AIS⁵ could be similarly marketed to small and medium size firms, then the potential would be even greater. Still none of them had an inkling of the ultimate potential of what they had created.

The dramatic improvement at Lempe opened up unexpected opportunities for MAI in several directions. Michael, who was a board member of the National Precision Machining Association, spoke to several other leading companies in the industry who collaborated with him on major contract bids. That enabled Vinay to sign two additional contracts on a similar basis in May, one with a company about the same size as Lempe which was operating at break-even, the other with a fast growing company half that size which was suffering from low profitability and poor cash flow. But the biggest opening came from Auku, a major Scandinavian manufacturer of machine tools owned by one of Norway's wealthiest and most successful industrialists and with operations in Norway, Sweden and Finland. Auku supplied many of the most sophisticated cutting machines Michael and other companies in his industry used in making their own products. In an ambitious expansion plan and attempt to dominate the expanding European market, Auku had recently taken over a leading French company and was trying to merge the two to create one of the largest precision machining manufacturers in Europe with combined revenues of \$4.9 billion. It seemed that everything was going wrong after the take-over and the Norwegian owners were struggling to stem losses

generated by their new acquisition. Vinay was introduced to Auku executives during one of their visits to Lempe. Subsequently they made two visits to MAI, then Vinay flew over to Oslo twice before a deal was struck. Since all three companies were in far better financial condition than Lempe had been when they signed the contract with MAI, Vinay insisted on non-refundable minimum monthly payments from all three, which were sufficient to cover more than sixty percent of MAI's monthly overheads for the next one year. Suddenly the company was out of the woods and on a rollercoaster headed upwards.

48. Mother and Child

Perfect organization makes life respond.

Archives

Both companies benefited dramatically from the two sets of AIS recommendations. Still, Dan could not help feeling that something was missing or incomplete. The sudden arrival of unsolicited new business seemed like a magnificent gift to both companies. Yet Dan concluded that the developments were too striking and closely parallel to be dismissed as mere coincidence. He had been bothered initially when he read the recommendations generated for Lempe and MAI by AIS⁴ and AIS⁵, because neither set included any specific measures to attract new business, which both the companies desperately needed. He had resigned himself to the fact that the program was not yet capable of understanding markets sufficiently well to offer valid advice, so it had confined itself to focusing on the inner workings of both organizations. Then Lempe had received the huge and unexpected orders from Japan for plants in China and India. That had been followed by a whole string of smaller orders that improved the company's position quite dramatically within the first three months of the contract period. Through Lempe's introductions, MAI had achieved an even greater boost in new business, sufficient to at least triple their revenues during the current year. And neither company had done anything specific to market itself more effectively.

These events compelled Dan to examine a recurring theme in *The Book* and *Archives* regarding the power of organization. He had come across numerous statements which suggested that organization had the power to evoke responses from the external environment, in this case from the company's market. That explanation fit the facts in both cases, though it did not provide any intellectual framework for understanding what had happened. It made Dan aware that they had only a very poor understanding of the relationship between the company and the social environment in which it operated. Something Anya said was quite thought-provoking. Recollecting her meditations on the nature of ego, she asked whether a similar truth could hold true for companies as well. "If my personal perception of separation and independence from the world around me is an illusion, isn't that the case for companies as well?" she had asked.

Then Dan recalled the archive statement he had shown to Vinay and their discussion about the fall of the Roman Empire.

An organization is a child of the society, born of its needs, energized by its aspirations, expanding as it expands, evolving to keep pace with its changing needs. When it stops growing, it begins dying.

When he first read that statement, he had been struck by the author's emphasis on the living nature of organizations and he had failed to fully comprehend the significance of the entire first sentence. Organizations are children of the society in which they are born. They are born of its needs and energized by its aspirations. They expand by expanding in concert with that society. They evolve by staying attuned to its changing needs. Here was a comprehensive statement of the relationship between organization and society, the inner world of its internal functioning and the external world in which it functioned. Stated in simple terms, the conclusion seemed too obvious to be even worth mentioning, as deeper truths often appear to a superficial glance. Carefully considered, it contained a profound knowledge. They had already perceived that Lempe, like Rome, had become encrusted and archaic in its functioning and unresponsive to the changing needs around it. The company had almost come to regard itself as separate and independent of the external world, a notion as preposterously foolish and egocentric as the similar idea that almost every individual lives and acts by.

Sometimes Dan felt that the difference between truth and Truth was no greater than a turn of the hand. Palm down everything looked one way. A flip of the wrist through 180° and a very different reality emerged, yet it was the same hand and to all appearances nothing had changed. Every MBA student could recite countless case studies to document the relationship between the company and society. Hadn't Sears become the largest retailer in the world by introducing a simple money-back guarantee decades before the practice became prevalent? Julius Rosenwald had understood the suspicious attitude and reluctance of rural consumers to purchase products they could not see and touch beforehand. He had attuned himself to a deeply felt social attitude. The guarantee had overcome that reluctance and endeared the company to the heart of Middle America. Hadn't Robert Woodruff understood the same truth when during the Roaring Twenties he positioned Coca-Cola as the 'champagne for common man'? He perceived that for the first time in history the ordinary worker in America dared to aspire for middle class status and the enjoyment of leisure. Coke became the symbol of that aspiration and captured the imagination of aspiring classes all over the world.

Then what was different here? A subtle flip of the wrist revealed a different and deeper reality. Viewed from the company's perspective, it was only commonsense and good business to try to give the market what it wanted. Viewed from the society's perspective, it linked the company to surging evolutionary energies that lifted society always higher. The first was the personal viewpoint of the corporate ego identified with itself and seeking its own survival and aggrandizement: the second, the impersonal and universal perspective of society itself identified with its own deeper aspirations and wider expansiveness. The former is essential for a successful company, the latter is a seat on the rising wave of social evolution. The first can generate growth of fifteen or twenty percent a year for decades on end. The second can propel a company from zero to the Fortune 500 list in five years or less as it had propelled Walmart, FedEx, Apple, MCI, Microsoft, Dell, Amazon and Google in succession.

These were fundamental truths of life and business, yet they had not been incorporated in the algorithms of AIS⁴ or AIS⁵. The responses both companies had evoked from the market had been the result of a subconscious adherence to a deeper principle, not a conscious application of a formula. By fine-tuning and energizing their internal organizations, they had attracted magnificent responses from their environment without conscious initiative. If that was the case, then how much more powerful and effective AIS would be if they could consciously incorporate the social principle into the formula for accomplishment? But that would require knowledge of society, its aspirations, how it grows, expands and evolves, a knowledge they did not yet possess. They were beginning to understand the child, organization. Now they had to understand the mother of that child—society.

Dan discussed these ideas with his partners and went back to his reading to look for deeper insight. Then one morning Ray walked into the conference room for a meeting with his partners looking fresh and energized with a smile on face. "We have been searching for something we already possess," he said as he sat down and leaned back in his chair. "We already know the basic principle governing social growth. It is the same principle! It is the process of energy conversion." They all listened with full attention. He said that he had been thinking about what Dan had said to him about the flip of the wrist to see the wider impersonal truth. Instead of looking out at society through a window from inside the company, he tried to get outside and identify with the society itself and look at things from its perspective. "Our objective is to discover a comprehensive formula for human accomplishment that we can incorporate in AIS, isn't it? We have been looking at successful companies as models for hints of that formula. So I thought why not look at a successful society, the most successful one on earth for the past hundred years—America? So I began by asking myself a question. What is the secret of America's phenomenal success?"

Before a small, eager audience, Ray wove a tale of romance and adventure, the stuff of fantasy and novels, yet his tale was true. "The answer was self-evident—unbridled energy and a new social organization." Ray traced the origin of America's accomplishments back to their European roots. People migrated from the old world, abandoning family, community and homeland, often with nothing more than the few possessions they could carry on their backs and in their arms. They came in search of opportunity, they came in search of freedom. America was a vast untamed wilderness where people could be freed from the constraints of class, occupational status and religion - free to set out on their own and build their own future. Freedom released unprecedented human energy that could not find scope for expression in the rigidly structured, traditional social environment of Europe. Here the individual became free of the shackles of social convention and social conformity, but also free of its protective cover and the security it offered those who accepted their hereditary place within the social hierarchy.

"What did these teeming millions of early immigrants coming in wave after wave from every country and corner of Europe bring with them?" Ray asked. They needed a passport—not the passport issued by any national country, but one issued by each person to himself—bearing a triple stamp: aspiration, courage and resourcefulness. With these three qualifications anyone could gain entry. Without them, one could not survive. Raw energy like the raging rivers of the Dakotas fed by an aspiration for freedom and accomplishment that has still not been quenched, an indomitable courage that prompted unmarried women to travel unescorted across unsettled territories and widowed women with children to raise their families single-handedly on isolated farms, and a resourcefulness whose spirit is captured in a single phrase—"Nothing is impossible!" And their deeds proved that these were not mere words. In 1856 the city council of Chicago realized that they had built their budding city in a low lying area subject to flooding, so they decided to raise the entire city by four feet, utilizing a newly developed jacking process. In one remarkable instance, the Brigg's Hotel, five stories tall and weighing twenty two thousand tons, was lifted while it continued to operate. What energy! What enterprise! No wonder that by 1900 America was producing 35 percent of the world's manufactured goods.

Bewildered or mesmerized Europeans travelled to the New World during the nineteenth century to experience for themselves what has happening over here. Coming to America in 1832 to study the US

penitentiary system, Alexis de Tocqueville went back so inspired that he wrote what is still an unsurpassed treatise on *Democracy in America*. Having grown up in post-Revolutionary France, he believed in the ideals of democracy but he had never before seen its principles in practice. The French Revolution had annihilated the aristocracy through violence, only to have monarchy restored after Napoleon's defeat at Waterloo. It took another half century for freedom without the guillotine to emerge in France. But here across the Atlantic, he found the democratic spirit of Revolutionary France blended with unprecedented freedom of action. Vast empty territories to be explored and settled, virgin forests and fertile land for the taking. No feudal tradition tracing family lineages back five hundred years to remind people of their relative superiority and inferiority to one another—by 1900 wages in America were already ten times higher than in Europe, because in the New World each man knew his own value and demanded payment sufficient to rise further. No insistence on oppressive conformity to one national set of religious doctrines—anyone could found their own church. No rigid class structure—indigent immigrants arriving in New York harbor spent an average period ranging from seven to seventy-seven weeks before they moved out of the shanty town ghettos into the middle class. No dominating landed gentry compelling tenant farmers to work for subsistence wages—there were millions of acres of land for the asking or taking.

“What has made this relatively young nation the most powerful and prosperous nation in the world and the irresistible magnet that still draws people from around the globe?” Ray asked and then answered in the same breath, “Two things—an indomitable energy and a capacity for practical organization.” Energy alone can create a revolution, but it cannot build a nation. A social structure and infrastructure were needed to channel that energy effectively. Europe was the birthplace of mind and science. America's genius was in converting mental truths into practically useful technologies and forging new types of social organizations to make them effective—a democratic federal system of government, transcontinental railways, land grant colleges, state universities, community colleges, the first national telephone system, mass production on moving assembly lines, standardization of parts, mail order catalogs, suburban shopping centers, multi-divisional corporations, commercial airlines, drive-in restaurants, amusement parks, instant printing, overnight delivery, credit cards, ATMs, HMOs, retirement communities, computer networks, venture capital, mutual funds, call centers, e-mail, e-commerce, e-money—not all of them were invented in the USA, but all of them took root here and were absorbed as integral parts of the social infrastructure faster and more fully than anywhere else in the world. Social organization in Europe was designed to preserve the status quo. Social organization in America was designed for maximum individual accomplishment without regard to status.

Energy directed by an aspiration for high accomplishment became the Force for unparalleled material and social accomplishment. That force was transformed by practical organization and technology into productive Power. That power, channeled through skilled, educated, hard working people with a flair for invention and innovation has produced all this material abundance and set an example for the whole world. Ray concluded with the fire of passion in his eyes, “For all our accomplishments, what can we claim as uniquely our own? We carry the genes of every nation on earth and the memories of races dating back to the Flood. Our ideals of democracy and freedom were born in Greece and Paris, our law and organizational capacity in Rome, our religious diversity in Reformation Germany, our administration in Napoleonic France. Our science was discovered by Galileo, Copernicus, Newton, Kepler, Huygens, Pascal, Descartes, Leibniz, Planck, Maxwell, Bohr, Einstein, Heisenberg, Boyle, Dalton, Gamow and the like—all sons of Europe! To the mixed brains and blood of all of Europe, have since been added the DNA and culture of millions of peoples from the farthest points of Africa, Asia and Hispanic America. Our very language is not our own. The mental spark born in ancient Greece and the aspiration for freedom born in sixteenth century Europe found expression and realization as practical individualism on the boundless plains of North America. And where did Greece get the spark? From Asia, most probably from the conscious soul of Vedic India. The world looks up to America, envies us, emulates us, aspires to be like us—not because we are better than others, but because we represent something of the best in all human beings, something uniquely human, the value and potential of the individual. The formula for accomplishment we are hunting for is right before our eyes. It is there in the story of America's ascendancy.”

Ray drew to an abrupt conclusion and sat motionless, his face radiant. Dan, Anya, Vinay and Lauren remained silent, taking in and absorbing what they had heard. Lauren had never seen this side of Ray's personality. She had always thought of him as soft and quiet. She had never realized the clarity and force of ideas that inspired him. They all understood without even discussing it that here was a basic framework for transcending the limitations of AIS⁵, even before a commercial version of the program had been completed. Dan and Ray agreed to begin research on AIS⁶, while Anya completed refinements to AIS⁵ and Vinay applied AIS⁴ to commence work on the new assignments MAI had on hand.

Vinay eventually brought them back to the specific issue at Lempe. “All that Ray says makes it abundantly clear how far Lempe has drifted from the underlying current of aspiration that drives American society. Now that the company has greater confidence in us and has regained lost confidence in itself, we need to evolve strategies to reconnect it to the source and mainstream of social vitality. During our earlier rounds of interviews, a number of interesting proposals were raised by staff for branching out into new fields or innovating new types of services. While Lempe is working on implementation of AIS⁵ recommendations and AIS⁶ is under development, I propose to examine those suggestions and see if we can make a beginning somewhere.”

During the second quarter of 2006, progress at Lempe accelerated. Vinay took up a proposal by one of Lempe’s young customer service engineers to introduce a new type of service. The idea was for Lempe to manufacture and install machinery, recruit and train personnel, and operate manufacturing facilities on turnkey management contracts for clients. That would ensure Lempe a market for its own equipment and ensure clients the highest level of manufacturing expertise. The first contract for the new service was signed with a fifty million dollar start-up electronic switching plant in Silicon Valley and was quickly followed by three more contracts for production facilities in California. Meanwhile, based on guidelines provided by MAI, Lempe reoriented its recruitment and training programs to make them more attractive to young technically qualified job-seekers on the West Coast. A group of fifteen young engineers from top schools were recruited for a fast-track management program to induct greater youthfulness, fresh ideas and new attitudes into the company.

The dramatic improvements in performance raised as many questions as they answered. It was not enough that AIS⁵ could generate these results. It was essential that they understand the principles on which it was accomplished.

49. Clash of Cultures

Sociological observations are void of significance if not based on psychological perceptions.

Archives

Contradictions are complements.

The Infinite manifests itself in the universe through values.

The Book

The Auku project was the biggest commercial opportunity that had presented itself to MAI, so Vinay proposed to personally head up the team until a sufficiently experienced leader could be put in place to manage it effectively. Vinay selected Allen Shores as project manager to work under him. He asked Lauren to also work on the project, since she was the only one who could communicate with the French in their own language. After spending a week in Oslo and two weeks in Lyon where the French company was headquartered, Vinay came back and asked for a meeting with both the partners and group leaders on the other consulting projects.

“What a situation!” Vinay began, “I seriously doubt an AI product will ever be built that can handle what we encountered. Total chaos! The French and the Finns are at each other’s throats and ready to throw in the towel. I thought Lempe was Mission Impossible, but that was nothing compared to this. These people may all be Europeans and part of the same European Union but they are poles apart culturally. They do not understand each other and, worse than that, they do not trust one another. Language is one problem, but the real problem seems to be cultural. They live less than thousand miles apart, but they have diametrically opposite ways of doing things.

Vinay laughed in exasperation and gestured to Lauren to explain the first problem they encountered when they arrived in Lyon. After the merger, the new CEO, a pragmatic Finn named Yuri Kulin, asked his largely Finnish management team to prepare a plan for consolidating activities to reduce staff and overhead costs of the combined operations by hundred million euros. He told them to work backwards from that number and slash people and expenditure proportionately in various departments. Meanwhile the French CEO instructed his own team to prepare their own plan for downsizing. The French team started at the operational end and analyzed each separate activity to identify which ones could be most efficiently conducted in which place. “When the Finns and the French met to compare plans, virtually all their recommendations were at odds with each other. Worse than that, the Finns accused the French of stonewalling the entire exercise in order to save jobs in Lyon. The French accused their counterparts of arbitrary slash and burn tactics reminiscent of the retreat of Russian troops before the onslaught of the French army during Napoleon’s invasion of Russia nearly two hundred years ago!”

When Lauren stopped for breath, Allen picked up the thread. “When we delved a little deeper we found this was just the tip of the iceberg. On virtually every parameter the French and the Finns are worlds apart. The French operate by a hierarchical organization in which the top man is the unquestioned leader and boss. Everything is done systematically and documented to a ‘t’. The Finns believe in flat, equalitarian organizations where everyone takes responsibility, decisions are by consensus, and work is delegated to the lowest possible level, but decisions are taken intuitively without detailed analysis backed by documentation. The French believe in authority, structure and process. Think, analyze and then act. Kulin and his team believe in freedom and initiative. Decide and act, don’t spend too much time analyzing. In addition, like typical Latins, the French are real talkers,” Allen said then looked over at Jean and Lauren to see if he had offended them by his remark.

“Look, Allen, if you want to trade cultural anecdotes about Americans and Frenchmen, I can entertain you all night,” Jean said. Somehow none of the Americans thought they would find Jean’s stories very entertaining.

So Allen continued. “The Finns complain that the French jump into every discussion and keep talking until you interrupt them. The French complain that the Finns are just the opposite. They never speak until they have something important to say and they never interrupt. Kulin says it has something to do with the cold weather in Finland—don’t waste energy by letting in the cold air unless it’s important. They keep waiting for the French to stop talking, while the French keep waiting to be interrupted.” Laughter rippled around the conference table at Allen’s description. Even Jean chimed in.

Vinay resumed, “As a result, work has ground to a standstill, mutual suspicions are rising, rumors are spreading in Lyon about massive layoffs, the Finns and their Norwegian owners are getting impatient

and the French are getting angry. If AIS can't handle cultural differences that arise within the fairly homogeneous European society, how will it ever be able handle the differences that separate Europe and America from India, China, Japan, Russia, Ethiopia and Brazil?"

Eric suggested that they incorporate one of the popular analytic models of culture being propagated by management gurus to deal with the problems faced by multicultural teamwork within multinational corporations.

Vinay shook his head and frowned in response. "I seriously doubt that any cultural model is going to do the trick. I recall studying several of them for my MBA. Cultural models describe and measure differences, they do not reconcile them. Our task is not just to understand cultural problems. We need to solve them."

"Maybe we are looking at this in the wrong way," Ray commented. "Perhaps instead of viewing it as a problem we should view the clash of cultures as an opportunity."

"Ray, if you can turn this pumpkin into a coach for Cinderella, I'll be the happiest man alive," Vinay replied.

"All I meant was that cultural contrasts can be important defining moments for growth," Ray explained. "Right after graduating from MIT, I traveled to Europe for the summer and visited Moscow for ten days. I can still remember the sense of surprise I felt when I started interacting with Russians for the first time. It was just before the fall of the Berlin Wall in 1989. I had grown up with all the stereotypes about heartless stone-cold Russians who are like robots—no offense meant, Anya, no one could ever accuse you of that. I was literally blown away by their warmth and affectionate hospitality. I had thought Jewish families are emotional and intense, but this was different. It was exhilarating. The people I met were so open, eager to interact, and trusting, it made me wonder whether, perhaps, we had been the ones who had grown up on false propaganda. I honestly felt these people were more human than I was and it touched me deeply. It made me reevaluate my whole life."

Anya was keenly attentive and could not suppress a feeling of delight at Ray's description, but Vinay seemed to miss Ray's point and was impatient to return to the subject at hand. "I agree with Ray," Dan added. "Contact with very different cultures can help to outgrow narrow opinions and rigid attitudes and expand our personalities mentally and psychologically."

"That was my point," Ray said. "I remember my father saying something very similar after visiting Prague and Berlin just before the Soviet invasion in 1968. He said seeing those long haired youth playing guitars on the street corners just like in Cambridge and then seeing those stark barren tenements on the eastern side of the Berlin Wall. He said it was the first time he really understood what freedom feels like and until he crossed back over to the West, he felt frightened that he might somehow lose it."

Vinay chuckled and seemed to regain his normal demeanor. "My dad told me the biggest culture clash of his life was arriving in Berkeley during the month of the Free Speech Movement. Long haired youth smoking dope on the corners, hugging each other with greetings of universal love, and calling the policeman 'pigs' as they drove by. He said he wasn't sure whether he had come to a foreign planet or he was from one! He jokes about it now and says it was the best four years of his life. My mom lets him get away with that because that was where he met her."

"I didn't notice cultural differences too much when Rana and I first met," Ray said. "But the moment we were married I felt we were from different worlds. Rana went to the dentist complaining of a toothache, then called me at work asking if she could have her tooth extracted. I asked, 'Why are you asking me. It's your tooth, isn't it?' She replied that was exactly the question the dentist had asked her and I could hear him laughing in the background as she spoke to me. When she got home, she explained that her mother would never have considered having a tooth extracted or any other medical procedure without consulting her father or husband first. What she really meant was without asking his permission. I thought it was very humorous. The very next day I came home from work and started talking to Rana about a problem I was having. She immediately retorted, 'Why are you asking me?' and then she burst out laughing. I realized then that my dad used to come home every night and do the same thing with my mom, but Rana says she never heard her father talk about work in the house at all. Yet, for all their submissiveness, I think Indian women exercise as much influence over their husbands as any others. They just do it silently and subtly."

Anya couldn't restrain her laughter at the image of Rana calling from the dentist's office. Then she said, "While I was at the Institute, lots of American professors started visiting Moscow and suggesting to me that I move to America, the land of the free. They promised me a good job at the university. One of them even promised to help me buy a house, but I didn't like the sound of that proposal. There was only one

American I met who warned me about coming over. He said that life in Russia may be difficult but the people seem to stick together. He could feel the real spirit of comradeship which has nothing to do with the Communist Party. He said perhaps because the system is so cold and impersonal, the people are more humane and intimate. Anyway, he warned me not to be carried away by the poetic license of American professors. He said moving to America, where you have to stand completely on your own in the rough and tumble quest for personal advancement, might prove quite a cultural shock. And he was right, you know. Until, that is, I met you guys.” Then she seemed to fill the whole room with her smile. “But the stark contrast of moving from part of a close-knit group to being totally on my own was a challenge that forced me to discover more of myself. It was like walking out of a sauna naked and diving into the snow.”

“In my first year at Rothman & Lazurus, I got a strong dose of culture shock,” Vinay said. “And it had nothing to do with life on Wall Street. I met a girl, a Jewish girl, and really liked her.” Vinay couldn’t help glancing over at Anya and Lauren. Both were expressionless but totally attentive. He tried to escape from the difficulty he felt he had inadvertently wandered into. “Of course, in appearance she could not hold a candle to either of the ladies in this room, but she was very pleasant and interested in all the right things—meaning everything I was interested in. After dating for a few months, I had to vacate my apartment on short notice and she invited me to move in with her. The very first night, we were sitting in the living room watching a movie and she asked me in an affectionate tone whether I would mind bringing her slippers from the bedroom. At first I thought she was joking or I had misheard her request. But there had been no mistake. I thought to myself that if an India woman spoke like that to her husband, it would almost be justifiable grounds for divorce, and I had only known the girl for a few months. I took the first vacant apartment I could locate and moved out the very next day. I understood that night she had a very different conception of marriage than I did.” Anya and Lauren were near to hysteria just watching Vinay relive the experience.

Dan was glad to see Vinay relaxing and enjoying himself when just minutes before he appeared anxious and tense. But he also noticed Jean becoming edgy and thought it was time to bring the meeting back to the issue at hand. “All your experiences reflect a central truth. Contact between cultures makes us more conscious of the relativity of things we once took as absolutes. We all grow up thinking our way is the one and only way; and assume everyone else thinks and feels the same as we do. Cultural contact makes us aware of our own limitations. It makes us more conscious of ourselves. The greater the difference between the cultures, the greater the intensity of the impact and the greater the potential for self-discovery.”

“America is a living example of that,” Ray interjected. “The cultural diversity is one of the major sources of our energy and dynamism. This country is like a microcosm of the whole world. All roads may lead to Rome but all cultures in the world have descended on America and can be found here—mixing, clashing, melding and borrowing from one another in a crazy hodgepodge fashion. Culturally it looks like what Rana calls a *masala*—a mixture of everything—but the net result is unprecedented freedom of action and tolerance for people who are different from you.”

“I’m not so sure about the tolerance part, Ray,” Allen added. “I grew up in Alabama and a lot of the people I knew have a fair bit to learn about being open-minded and accepting differences.”

“I agree, Allen,” Ray replied, “but I think that is a natural result of so much freedom. You find not only the greatest acceptance of difference in America, but you can also find the greatest intolerance and fundamentalism as well. I used to think it was ironic that the land of the free should also be a hotbed of fundamentalist reactionaries. Now I think it’s natural and inevitable. Nature’s experimenting with unprecedented freedom and some people are uncomfortable with that, so they crawl into a shell or a two thousand year old set of beliefs to hide from freedom.”

“I think every country has its striking contrasts and idiosyncrasies,” Anya added. “Look at Russia. I used to wonder why Karl Marx was born in Germany, but his manifesto was adopted by the Russians not the Germans. Germany is a worker’s society founded on discipline and structure. Communism seemed the natural system for them. But mine is a country of aristocracy and serfdom. We are basically anarchists, yet we embraced the most rigidly structured system ever imposed on human beings, outside of Communist China perhaps. That is because we have always been ruled by autocratic czars.”

“Perhaps Communism was the only way for the country to overcome the deeply engrained spirit of feudalism which Western Europe outgrew centuries earlier,” Ray commented. “I recall reading a conversation between Churchill, a British General and Lord Mountbatten when they learned of Hitler’s plan to invade Russia in June 1941. The general said that Russia would collapse under the German might within a month. Churchill, who was a soldier in his own right, said he thought they would hold out for three months. Mountbatten disagreed. He served as Supreme Allied Commander of the Southeast Asia Theater during the war and then became the last Governor General of India who orchestrated the transfer of power. As a member of the British royal family he traced his lineage back to all the royal houses of Europe, including the

Romanovs. He said that the Russians would never surrender to Hitler and ultimately they would defeat him. Churchill and the general were really surprised and asked him why. He said because after centuries of oppression, the Russian people are fighting for their freedom. He was related to the Czars, but he knew the hearts of the people and he was right.”

Anya nodded approvingly. “I agree. Our most profound belief is in brotherhood, our greatest love is literature, and our political philosophy is anarchy. Given a choice we will not subordinate ourselves to anything but our heart’s inspiration. We know how to defend ourselves and sacrifice for the nation when our very survival is at stake. We proved that against Napoleon and Hitler. But during ordinary times in Russia the leader’s ego and personal preference are the first, last and only thing that is important. We call everyone comrade and speak of equality but do our best to accentuate the differences in status. If the boss says something, you do it just because he said it, not because it is right, and you do not question his authority. It goes back to our Czarist past. The leader has absolute authority. But if you delve still deeper into the Russian soul, you discover we are all mystics at heart, whatever the rationalistic or materialistic philosophy we espouse. If you touch us at that level we are all poets moved by faith, not by logic, reason or mental philosophy.”

Lauren could see that Ray was fascinated by the discussion. Looking at Jean, he said, “I don’t know much about the French, but it seems to me the soul of France is idealistic. To the French freedom and equality are not just personal rights and conveniences to ensure one’s security or advantage. They are universal principles worth dying for. If you read Victor Hugo’s *Les Miserables*, you can feel that idealism permeating the entire story. To the French, patriotism is not to a country, it’s a universal principle embodied by an idealistic image of a country, Revolutionary France, which actually exists only as an image in the minds of its people. If that principle is challenged for any reason, ‘then, off with their heads!’ Convince the French that your cause is right, true and just and you win their total allegiance. Anything else does not carry weight.”

Jean shook his head. “That sounds nice, Ray, but I don’t think it fits us. We are not idealistic, we are mental and intellectual. The French like to think and talk. Action is secondary for them. The British are men of action. They are pragmatic through and through. According to Churchill, it is anathema to the English to examine any issue from its first principles.”

Lauren added her own view of the country her ancestors migrated from two hundred years earlier and which she had visited for the first time two weeks ago. “I love the French because they know how to spend money with abandon. They enjoy it. They are not attached to it. In no other literature will you find such marvelous examples of generosity and free spending. They value life and living, more than money and things. *The Count of Monte Cristo* is the apex. He spends millions without thought or hesitation, not because he is rich but because he is French. Even the lowly D’Artagnan and the Three Musketeers exhibit a generosity and carefree spirit of spending which is liberating. I had a doubt when I read *Around the World in 80 Days*. Here was an Englishman who expressed the same characteristic, one I had not known the English to possess –not the Canadian English at least. Suddenly it dawned on me. The book was written by Jules Verne. He was depicting a French character trait in an English character.”

“That may be, Lauren,” Jean replied. “At the same time we are known to be very frugal. A lot of cultural contradictions are internal like this—internal inconsistencies within the same society—like American liberalism and fundamentalism or Russian authoritarianism and anarchy. Regardless of whether the tension and conflict is internal or external, the challenge of growth and reconciliation is real.”

“The French and the English are mortal enemies,” Ray interjected. “The French generally look down on Anglo-Saxon pragmatism as an insult to mind and truth. One of the reasons, I suspect, the English resent the French is the fact that a Frenchman discovered the greatness of Shakespeare. That’s right; it was a Frenchman, Victor Hugo. For two hundred years, Shakespeare was just considered an ordinary amusing playwright in the country of his birth. That was probably because he was a commoner and not a member of the aristocracy. The English always believed men of great deeds came only from royal blood. Being a real democrat and lover of the people, Hugo recognized genius in him and wrote a very popular book about Shakespeare in French. The French took to reading and praising the playwright. Suddenly the English got alarmed and declared Shakespeare a national treasure! What irony!”

“But when it comes to keeping a promise, I’d take an Englishman over a Frenchman, a Russian, a German or an American any day,” Anya said. “Honor and honesty are the soul of the English. In the past, to accuse an Englishman of lying was little short of calling him a murderer. To accuse him of cheating was considered an affront to the nation. Oh, I know there are English thieves and liars as there are in every country, but the English really cherished these traditional values of the gentleman—speak truly, act fairly, and give a gift with the humility of one who is receiving it. I don’t know if it is still that way, but that used to be

their ideal. They seem awfully dry to me, but when it comes to standing up under adversity to defend the nation, the English come first. Look how they withstood the Nazi Blitzkrieg. We Russians held out too, at tremendous cost, but many of our soldiers would have cut and run if given a chance. The English volunteered to fight—even the women—they considered it an honor to die defending their country.”

“I agree with Jean’s point that the cultural contradictions are often internal within societies,” Dan added. “And that’s true for individuals and organizations as well. Our own cultural heritage contains these in-built contradictions: Irish-American, Jewish-American, Russian-American, Indian-American, French-Canadian. We are all walking culture clashes! We are going to have to identify some common ground on which cultural differences can be reconciled. Otherwise our model will be valid only in an American context. That would rule out work with multinational corporations and foreign governments. Even in America, cultural diversity has become so great that we risk making major errors unless we can solve this problem. The problem at Auku, as I see it, is that Vinay is describing a situation in which people have taken their eye off the objective and gotten caught up in superficial differences. Beneath these differences there is a ground reality called work. No matter what country you come from or where a machine is made, it needs power or fuel in order to operate, it requires routine maintenance, and skilled handling in order to operate properly. No matter what language you speak or management style you advocate, at the end of the day profitability is going to depend on the quality of what you produce, the speed with which you produce it, and the systems you employ to ensure efficient operations. In other words, beneath the surface behaviors there are operational realities. We need to shift the focus of their attention from superficial differences to basic operational values.”

Jean added, “I agree with you, Dan, that basic operational values are the common foundation on which all cultural differences can be reconciled in work. Cultural theories I have looked at have missed the point. They are so caught up in the modern spirit of respecting diversity that no one has the courage to say, let’s put aside our personal perspectives and look at things from the perspective of the work. Speed is speed, quality is quality, clean is clean and so forth. If everyone agrees on the standard to be achieved, who is responsible and what method should be used to attain it; then it must be possible to develop methods to handle differences in norms for courteous behavior, conducting meetings, communications, discipline, freedom, exercise or delegation of authority. I believe we can factor these elements into AIS⁶ without too much trouble and generate methodologies to implement them at Auku.

“How is AIS⁶ going to reconcile the complexity of German culture?” Ray asked. “How will it explain that the land of Charlemagne, Luther, Goethe, Bach, Beethoven, Brahms, Wagner, Kepler, Kant, Marx, Mann, Hesse, Heisenberg and Einstein could also be the birthplace of Hitler and the primary cause of two world wars? The Germans themselves seem puzzled by it. In his book *The Glass Bead Game*, Hesse depicts a land of intellectual brilliance where mind has become divorced from life, leaving society in the hands of meaner, selfish elements. Yet Germany is also a land that worships physical perfection in everything it does. Was the tension of trying to think idealistically and act perfectly too great for human nature, permitting the unbridled subconscious energies of human vitality to explode under the pressure? Or take the Jews. How can you explain a global community which is split down the middle? On one side, you have those who cling to beliefs and practices formulated thousands of years ago and yearning to tuck their heads in the sands of time and resurrect a political condition they enjoyed only for an infinitesimal instant in their long history, as if the last two thousand years never happened. On the other, you have some of the most liberally-minded, idealistic, humanitarian internationalists in the world, who have contributed enormously to global progress in almost every field, in a measure greatly disproportionate to their tiny numbers. Here they are mired in an ancient controversy, reviving an ancient destiny. Imagine if Greece tried to resurrect the dominance of Hellenic Civilization today, or Italy the Roman Empire, or France its Napoleonic conquests, or Britain its global empire. How will AIS⁶ ever factor in such realities? How will it explain their horrible persecution during the holocaust?”

“Well, if you want to ask difficult questions, Ray, I can add more to the list,” Anya said. “How is AIS⁶ going to account for the fact that Buddhism was born in India, rejected there, only to become the dominant religion in China and throughout the Far East? How will it account for the amazing intellect of the Chinese and the Indians—who have got to be the most intelligent people on earth—while also accounting for their vast differences? The Chinese are essentially ethical. They idealized the wise, just mandarin who selflessly served the people. The Indians are essentially spiritual. Their ideal is the lone individual who has renounced all personal attachments and given himself heart and soul to the divine. A philosopher once said India is the world’s soul, which it protects and nourishes under many layers of poverty and social disorder until humanity is ready—the way Greece and Europe nourished the mind until it could emerge and spread with the spread of freedom and universal education. We Slavs are deeply religious—far more than your most devoted church-going Americans—but from what Vinay has told me, in India God is a reality, rather than just

a belief. You can study *The Book* all your life, Dan, but you may never understand these things as well as Vinay. He talks and acts like a thorough-going American, but for him the things you are reading about resonate directly with the knowledge he has subconsciously acquired from Indian tradition, while the rest of us only receive them in our heads as information. And do you really think we can resolve the differences between Arabs and Jews at the level of meeting protocols and methods of decision-making? These two people share a common cultural heritage which goes back thousands of years to ancient Palestine combined with radical cultural differences that have developed over 2000 years of the Diaspora. Let's face it. Resolution of the Arab-Israeli conflict would be the ultimate test of AIS and its not going to be done without going to the roots of social culture."

"I've learned a lot from this discussion," Dan said with a smile, "a lot about the world and my partners too. I'll remember never to ask you for my slippers, Vinay, or about the dentist, Ray. All these observations and experiences have one thing in common. They underline the fact that life is far too complex to be defined by a linear equation, no matter how many variables you add to the formula. Human accomplishment is not like some magical recipe into which you have to pour all the necessary ingredients. It's a dynamic process in which competition, conflict, confrontation and contradiction play as important a role as cooperation. We can see the same processes working themselves out at MAI. Like America, we are a cultural microcosm too. Even as partners, we are forced to come to terms with and try to reconcile five distinctly different cultural perspectives. As this meeting shows, that's been a key to our energy and creativity. I think we can make a beginning by trying to factor in cultural differences and formulating strategies to minimize their disruptive influence. But ultimately we are going to have to evolve a formula that fully accommodates the role of opposing forces in human progress. Maybe that will have to wait for AIS⁷ or AIS⁸, but until we find a way to incorporate it, our formula will still be missing a critical factor. Earlier we were trying to understand why some actions result in a doubling, some a ten fold growth and some just go on expanding a hundred or thousand folds. Somehow, I have a feeling that managing contradictions has a lot to do with it."

Progress on Auku and AIS⁶ proceeded hand in hand. Ray made arrangements with two European universities to research the deepest insights into the cultural differences of twenty-seven nations. Vinay handed over charge of Auku to Jean and Lauren, so that he could spearhead new marketing efforts with AIS⁵. Anya and Tony focused all their attention on development of AIS⁶. Dan went back to studying *The Book*, a resolution he made frequently, and compromised each time another spurt of business expansion demanded his full-time attention at the office. In spite of the progress incorporating culture into their model, Dan still felt they were missing fundamental insights into the process of social change and accomplishment.

By late July the first beta version of AIS⁶ was ready for testing. They knew they were not ready to handle complex cultural issues, so they decided to start by testing for the impact of corporate culture at Lempe and MAI, and seeing how the recommendations of AIS⁶ differed from those of AIS⁴ and AIS⁵. To their surprise, AIS⁶ added only one new recommendation to the list generated by AIS⁵. When Anya read it, at first she thought it was someone's practical joke; but it turned out to be genuine. It stated: "Before asking for further advice, first implement the recommendations of AIS⁵." AIS⁶ had developed a sense of humor!

That night something unexpected happened. Early morning the police notified Dan that there had been a break-in at MAI during the night. When Anya walked into the office in the morning she noticed her computer hard drive was missing. So was a file of papers on culture that she had left on her desk. No one else could find anything else that was missing. It was only several months later that they began to suspect what had actually happened or who had done it.

50. Inquisition

Later that week Dan received a call from a senior official at the US State Department requesting a meeting in Washington to discuss the possible application of AIS to problems in West Asia. Dan knew that this most probably meant either the interminable war in Iraq, now in its third year, Palestine, Afghanistan or possibly Iran. Any of these four would present a serious challenge and test for AIS⁶. Ray and Dan flew to Washington for a meeting on July 20. They only understood how seriously the Government was taking its inquiry, when they were introduced to Gregory Thompson, the Assistant Secretary of State for International Affairs, and a room full of experts on computer simulation, AI, expert systems and scenario modeling. Dan recognized the names of at least five of those present as among the top internationally-recognized experts on AI, just one level in stature below Dent and Stearne. When he realized that all of them were proponents of Strong AI, he prepared himself inwardly to be aggressively challenged.

Dan began his presentation with an introduction to MAI and its AIS, starting with the PAIS project for NASA, but Thompson quickly interrupted him to indicate that the Government was already well briefed on the history of MAI, its products and its projects, including MAIS, PAIS, the work for the Courke Committee, the two NASA projects, Citibank, Accor, Lempe and even the current work for Auku and others. Thompson pointed to a pile of reports and indicated that his team had already studied all of MAI's previous work. He did not bother to explain how the Government had obtained access to private and confidential information on the projects and they did not ask.

Dan felt flattered that the Government had taken their work so seriously, but for some indefinable reason the thoroughness of their preparation and the depth of their interest in MAI and AIS also made him slightly uneasy. There was something at once perfunctory and carefully orchestrated about the whole meeting. The Government was so well prepared. Thompson's team was not only totally familiar with AIS's capabilities, but also understood its deficiencies and limitations. One of the Government's representatives, an expert on cultural differences, asked perceptive questions about how AIS⁶ would handle complex multi-cultural situations. Others raised questions regarding the structural logic of AIS, accuracy, consistency, reliability, sensitivity, analytical capabilities, and the continuity of algorithms from one version to the next, but in return they provided almost no information that indicated the reason for their interest.

An econometrist named Graham from Princeton University asked, "Mr. O'Hara, can you please explain to us the scientific research methodology employed to arrive at the mathematical formulas embodied in the algorithms of AIS?"

"May I first request you, Professor Graham, to clarify what you mean by scientific research methodology?" Dan asked in return.

"I simply would like to know the statistical basis for the algorithms. What is the research you undertook? How large is the sample? What tools or methods did you use for data analysis and validation?" Graham replied.

"Well, the simple answer is that AIS is not based on statistical analysis of data at all, though many of our findings are borne out by an analysis of data based on the actual results achieved utilizing the software. For example, NASA reported a seventy percent drop in confrontations between astronauts on the ISS. Citibank reported a 67 percent increase in employee morale based on HR surveys. Is that what you are asking about?"

Shaking his head vigorously, Graham repeated that the results were not what he was asking about. "I am asking about scientific method. How did you arrive at the formulas incorporated in the software? What research methods did you employ, what data sets did you examine and what was the source of that data?" I hope I make myself clear."

"Perfectly, professor," Dan replied. "And I must repeat that AIS is not based on statistical analysis at all."

Smiling broadly and looking around the room at his colleagues to share his sense of amusement, Graham remarked, "Then how can you call AIS a scientific instrument? If you have not conducted statistical analysis, how can you know that the formulas are correct?"

Dan caught the drift of Graham's inference, but refused to accept the bait. "I fail to see what data analysis has to do with science, Professor Graham. How can you develop formulas based on data? Formulas must be based on principles, laws, truths of life."

Graham chuckled and shook his head in disbelief, then replied, “Without statistics there can be no science, at least no social science.” Again he looked around the room for support from his peers.

“This is probably not the place for a theoretical discussion on science,” Dan added. “I have always thought that science was knowledge. Identifying statistical patterns provides us information describing events that have actually occurred, but that is not the same as knowledge of how and why things happen. The IRA has disarmed. That is a fact. I fail to see how any amount of statistical analysis of terrorist groups in the past could have generated the knowledge required to bring about that result.”

Thompson had a lazy, laid-back demeanor and did not seem to take his work very seriously. He reclined in his chair through most of the meeting and let others talk, as if he were barely interested in what was transpiring or did not comprehend the subject matter being discussed, but at several points he demonstrated a complete familiarity and perceptive understanding of the discussion. Suddenly he sat up, leaned forward and listened keenly to what was said, then he asked, “How then, can you tell us, did the Courke Committee persuade the IRA to accept the advice of AIS¹?” Dan replied that they had no knowledge or first hand experience of what took place within the Committee or between the Committee and the IRA. Thompson seemed to find his reply humorous for some reason. Dan eventually concluded that despite his appearance of indifference, Thompson was well-briefed and fully interested in the outcome of the meeting.

Then, Professor Boyd, a political scientist from Georgetown University commented, “I agree with that last statement, Mr. O’Hara. But if you did not apply statistical methods, how did you arrive at the formulas and algorithms?”

Dan noticed that Thompson suddenly became alert when this question was raised and turned to hear his reply. “If you are specifically referring to AIS¹, which formed the basis for our work with the Courke Committee, the algorithms are based on knowledge of the human decision-making process and the factors that determine successful outcomes. We provided the Courke Committee with an analytic tool to assess the options in Northern Ireland. The conclusions they drew from it were their own.”

“Did it ever occur to you that a single successful case has absolutely no statistical validity at all? From what you say, you were not even privy to the actual decision-making or negotiating process that led the IRA to declare the cease-fire. Why, it may have been result of totally different factors unrelated to AIS. It is impossible to determine whether AIS has any scientific validity at all based on this example.” Boyd paused for Dan to respond, but seeing that Dan remained quiet, he continued, “Tell us, what precisely was the source of your knowledge of decision-making? What formed the theoretical basis for the algorithms? What model did you use? Where did it come from? How do you know it is correct? How do you know it is based on truth?” Boyd asked again.

Dan replied, “What, may I ask in return, was the source of Einstein’s formula $E = mc^2$? How did he know it was correct? What was the source of Newton’s insight into the reason why the apple fell to earth? Or Archimedes’ insight into the specific gravity of water? Wasn’t it Einstein who said that intuition does the work, reason comes to harvest? None of them relied on statistics to formulate their theories. They relied on data only to test the validity of the theories. It always struck me as odd that all the great scientific hypotheses, theories and laws are products of intuition, yet the only thing they teach scientists is how to conduct experiments to validate those theories. For all our scientific knowledge, we remain totally ignorant of the process of scientific discovery.”

“So, if I understand you properly,” Boyd retorted in mildly sarcastic tone, “you are saying that AIS is based on intuition, kind of like a received knowledge of some kind.”

“Not at all,” Dan replied, “I am simply saying that it is not based on data and statistical analysis. I cited the examples of great scientific discoveries merely to emphasize the fact that none of the greatest scientific theories were derived from data either. If you analyze the structure and output of AIS¹, you will find that it generates decisions consistent with the most successful decisions taken by people in the past, such as those taken by Lee Iacocca to turn around Chrysler in the early 1980s, or by Winston Churchill to prevail against Hitler in the Battle of Britain, or by Lord Mountbatten in orchestrating Independence for India before the whole subcontinent exploded in violent revolution.”

Thompson was becoming impatient with the direction the conversation was taking and looked around the room to see if there were other questions. An MIT expert on AI named Raju, from whom Ray had taken several courses while a student there, spoke next. “I have a question for Mr. Gerber. How you can create a general AI product that is not based on a specific database of practical information? All the expert systems and AI systems currently in use are targeted to perform very limited functions within a narrow area of specialized expertise, such as modifying the pricing of airline tickets based on the day of the week, time

of day, unsold seating capacity and time before the flight; or diagnosing plant, animal or human diseases based on an analysis of a range of common symptoms. This is the first time I have encountered an AI system intended for widespread application in many different fields. I think that is one of the things puzzling Professors Boyd and Graham, and is the reason for their persistent questions. Can you please explain how AIS differs from other systems and how you have managed to develop a system that is independent of specialized information?"

Ray wondered whether Raju recognized him and, if so, what opinion he had retained of his former student. He nodded and replied, "AIS does depend on specialized information which needs to be gathered or presented when a problem is submitted for analysis. But that information only serves as an input for analysis. It does not serve as the basis for the decision. As Mr. O'Hara has already stated several times, AIS is based on knowledge of the process of human decision-making and accomplishment. It is founded on the premise that there is a single process of human accomplishment applicable to all fields of activity. The algorithms are based on that process. Decision-making is only the top layer incorporated in AIS¹. Each successive version of the product incorporates an additional layer. We are now up to six layers, but the product is still evolving."

Raju shook his head in disappointment, "Excuse me for saying that you both seem to be evading a simple, straight-forward question. Under the circumstances I see no purpose in asking anything further."

"In any case, further questions of this type would only lead us in circles," Dan remarked, "If time and inclination permitted us to present our full theoretical framework, it would simply beget the question. You would then ask us for data to confirm the validity of the framework. We would site the results generated by AIS and you would again ask for data on which the theory is based. Theories are not based on data. Proofs are."

Thompson tapped his microphone to get everyone's attention. "Thank you, gentlemen, I think we have covered the subject with sufficient thoroughness for the moment." The meeting had already lasted more than three hours. Thompson then told them that the Government would like to assess the performance of AIS⁶ on a few specific issues. He then handed them copies of a project proposal concerning US Government strategy dealing with several problems in Iraq—one related to Sunni-Shia violence, the other related to economic development and employment generation. An Iraq expert briefed them on the problems. Thompson told them he would like them to submit results within three weeks. Dan said that a project of this type would require two or three times that long just for gathering and input of crucial background data. Thompson replied that all the necessary data would be transmitted to MAI that very afternoon. He said the Government would pay them two hundred fifty thousand dollars for the analysis, but he insisted on receiving their report before August 10.

Driving back to Washington National Airport after the meeting, Dan and Ray tried to figure out what the whole meeting had been about. "It looks like Thompson had already decided to give us a test project even before convening the meeting," Ray observed. "He had the proposal with him all the time. Then why put us through three hours of inquisition by those academics? What was the point? What was the purpose?"

Dan shrugged and replied, "That's the same question I have been asking myself, Ray. Perhaps he was just testing us to see how confident we were about AIS."

51. Threats & Temptations

On their return to California, Ray quickly assembled a team and worked non-stop on the project. On August 8 they sent the report to Thompson by courier. The very next day they received a call from State asking them to return for a meeting at 10 am on the eleventh. Dan and Ray flew back to Washington for the meeting. To their surprise, this time they were not led into a large meeting room full of officials. Instead they were immediately taken to Thompson's private office. They sat down across from Thompson at a small conference table. Dan saw a copy of the Iraq study in front of Thompson. Ray had prepared a presentation and explanation of the report, but he never got an opportunity to present either.

Thompson was a tall man, at least six foot three with a deep voice and an unmistakable Texas drawl. Ray had done some background research on the Assistant Secretary after their first meeting. He had joined State during Bush's father's presidency as a senior official and then spent the eight Clinton years as a Washington lobbyist, mainly representing the international interests of defense contractors, then he had returned in his present position when Bush Junior assumed office. Thompson began the meeting on a very different subject and never came around to Iraq at all. It soon became apparent that the Iraq project was only a test of some kind that had been issued in order to confirm AIS⁶'s capabilities. The quick turnaround time, immediate request for a follow-up meeting and the fact that Thompson made absolutely no reference to their report suggested that the software had passed the test.

Dan and Ray were struck by the stark contrast between Thompson's behavior three weeks earlier and his conduct in the second meeting. Then he exhibited little energy, wavering attention and only a modicum of interest. Now, Dan observed, he was concentrated, alert, intense and determined. Thompson began by asking them to describe the overall capabilities of AIS⁶ as well as their plans for future development of the software. Then he asked a long list series of specific questions about possible applications of AIS⁶, but it was still not clear to either Ray or Dan what he was trying to get at. "Could the software be used to model terrorist behavior and identify strategies to prevent it? Could it be utilized to assess the response of Governments or the general public to major crises? Could it be applied to identify points of cultural similarity and differences between groups?" After each question, Thompson paused for their response and recorded it on paper. Dan also noted that the meeting was being recorded electronically as well. One particular question on the list very much surprised Dan. "Wasn't it true that MAIS had contributed to the instability of the stock market in 2001-2?" When Ray tried to say that they had no concrete evidence to support that conclusion, Thompson rephrased the question. "Wasn't it true that the management of MAI came to the conclusion that MAIS may have contributed to the instability of the stock market in 2001-2?" Dan and Ray were forced to concede that it was, but they both wondered how Thompson could have known about their internal concerns regarding the product. The list of questions covered more than fifty different possible applications of AIS ranging from military and political to economic, social and psychological. Ray found the last question particularly disturbing. "If PAIS had proven successful in resolving conflicts on ISS, wasn't it possible that a version of the same software might be applied to generate or aggravate conflicts in other contexts?" Neither of them wanted to acknowledge that possibility, but the question was so vague and general that it was difficult to deny the possibility. When they did not answer, Thompson interpreted their silence as an agreement and recorded it as such.

It was only after this that Thompson's real purpose in convening the meeting started to become clear. "You do realize, I assume, the implications of the information you have provided us this morning?" Thompson said, more in the form of a statement than as a question. "MAI has developed a powerful AI system—you have claimed in writing that it is the most advanced in the world and our own experts endorse that claim—a system capable of dealing with complex social and political situations, such as your work for the IRA, a known terrorist organization, demonstrates."

"Pardon me, Mr. Secretary," Dan hastened to clarify, "but we have never undertaken any work for the IRA."

Thompson chuckled cynically and replied, "Then who precisely do you think you were working for, may I ask?" He pulled out a dossier and read, "Professor Richard Courke, historian and high level advisor to the Provisional Irish Republican Army. Professor Harold Nieminen, political adviser to the Official Irish Republican Army. Samuel Monahan, military strategist for the IRA Army Council. Kenneth Murphy, political adviser to the Sinn Féin. Shall I read you the rest of the list or are you satisfied?" Thompson paused for dramatic effect, and then continued. "Surely you must have wondered how the Courke Committee ever persuaded the IRA to accept the recommendations of AIS, when all the efforts by the British, Americans and the Republic of Ireland had failed so many times. You said it yourself. AIS is a decision-making tool. It is useful to people who make the decisions. What good would it be for outsiders to the Northern Ireland conflict? Whether or not you actually knew who your employer was is not our primary concern just now, but

I must point out that your association with known terrorist organizations is grounds for criminal prosecution in this country. We may be willing to overlook that fact in view of the apparently positive role which AIS played in the IRA's declaration of a permanent cease-fire. Nevertheless, it confirms the point of this meeting. AIS is an extremely powerful and advanced strategic tool which, should it fall into the wrong hands and be applied for the wrong purposes, could prove extremely dangerous to the security and interests of this country and the entire free world. I am sure you will agree with me that the Government's concern is justified."

Thompson had uttered the last few sentences in a self-righteous and overbearing tone that communicated far more than his actual words. He clearly meant to imply criticism of their behavior and irresponsibility on their part. He apparently had intended to surprise them by revealing Courke's true identity and make them acknowledge the validity of his accusation. He stared at each of them in turn intently, as if he expected them to confess their wrong-doing, ask forgiveness and issue a formal apology. Ray deferred to Dan. Dan returned Thompson's glaring look with impassive silence. He needed time to reflect on Thompson's motives and the implications of what he had said. He sensed that the next few minutes could be critical to the future of MAI. Thompson continued to stare, but eventually concluded that his tactic had not been sufficient to force an admission of guilt or regret, so he took the next step. Switching to a more familiar casual tone, he said, "Given your Irish origins, Dan, and your grandfather's active role in terrorist violence in the past, I would have thought you would be more cautious and sensitive to the possible accusations that might be leveled against you for associating with the IRA."

Thompson waited to see the impact of his words. Ray was feeling increasingly nervous and would have responded to Thompson, had Dan not gently laid a hand on his arm to indicate that he would reply instead. "Mr. Thompson, I can assure you that none of us had any knowledge that Courke or his colleagues were members or representatives of the IRA. This is the first time we have heard anything to that effect. I can also assure you that no relative of mine was ever associated with terrorists. My grandfather was a freedom fighter who gave his life for the freedom of the Irish Republic, just as so many Americans gave theirs fighting for American freedom."

"Dan, every terrorist calls himself a freedom fighter," he said jocularly, but then switching to a more mollifying tone he added, "but please don't misunderstand me. I have no intention of insinuating that any of you have consciously done anything wrong. I am sure both Anya Serova and Vinay Menon are as loyal to America as you, Ray and I are. But look at it from the Government's point of view. Four brilliant young minds of varying ethnic and national backgrounds have created a very powerful tool, whose potential applications extend beyond what any of us can imagine, and what do you do? First, you develop an application that may very well have destabilized the New York Stock Exchange—we must concede that it is at least a possibility. Second, you associate with outlawed Irish terrorist organizations and provide them access to the power of AIS¹. Perhaps, we were fortunate that only the rudimentary version of the software was available at that time. You must admit it does not look very good. As a patriotic American, I am sure you will grant that the Government has a responsibility to see that products of this type do not fall into the wrong hands and get used for the wrong purposes."

There was thinly veiled anger in Dan's voice as he responded, "One might have expected that the Government would be thanking us for helping them accomplish what no administration has been able to do with all the money and might of the US Government, rather than accusing us of treason. Have you ever thought that perhaps you should be distributing copies of AIS to all terrorist organizations in the world to help them make more rational decisions that are beneficial to everyone?"

"Let's not be naïve, Dan. If the IRA decided to declare a cease-fire, they must have had their own compelling reasons for doing so. It had nothing to do with the benefit to humanity."

"That is precisely my point. Although we did not know that the IRA was directly behind the Courke Committee until you explained it to us, we were fully aware of the logical principles by which AIS¹ appealed to the IRA. Their announcement of the permanent cease-fire was fully consistent with those principles. AIS had pointed out that internal and external support for violence had dramatically declined. That was confirmed by the increasing difficulties the IRA faced in recruiting new members, as well as the increased pressure from domestic and overseas citizen groups and foreign governments. When all the facts and principles of life are taken into account, people with opposite goals and aspirations will come to the same decision about the course that is in their best interests. When people truly understand what their own compelling interests actually are, they will find that they do correspond with the interests of those they oppose. That applies to our enemies as well as our friends. How else can you explain the decision of General Dietrich von Choltitz to directly disobey Hitler's instructions to burn Paris in 1944, knowing full well that his own family was being held hostage by the Führer along with the families of other German generals to

ensure their strict obedience? Why do you think Reagan and Gorbachev came so close to agreeing on total elimination of nuclear weapons in the 1980s? It might have actually happened, if Reagan hadn't insisted on proceeding with deployment of his Strategic Defense Initiative and if Gorbachev hadn't refused out of baseless concerns that SDI would be turned against Russia. If only he had realized how utterly flawed SDI was, Gorbachev might have agreed anyway. The world came that close to abolishing nuclear weapons, even before the end of the Cold War and collapse of the Soviet Union. Enemies were compelled to draw the same conclusions when they examined the decisions in their entirety. That is what AIS does."

Changing the subject, Thompson replied, "Dan, let's be realistic. There was a time when it was sufficient for us to control the export of computer hardware. But with the advent of computer clusters using off-the-shelf processors, that is no longer possible. Anyone can assemble a supercomputer more powerful than those which were the fastest in the world just a decade ago. Today power lies in the software and we have a responsibility to see that we do everything we can to protect our national security. I am sure you can appreciate our concerns and will agree to cooperate with us."

"Perhaps you can explain exactly what type of cooperation you have in mind." Dan replied.

Thompson smiled broadly and spoke in such a smooth, pleasant tone that Ray could barely believe it was the same person who had threatened them just a few minutes earlier. "I'm delighted to do just that, Dan. We have considered all the possibilities—that's our job, after all—and concluded that the easiest and best solution is for you to simply sell MAI to Uncle Sam. I am sure that when you think about it, you too will come to the same conclusion." He paused to gauge their response, then he continued. "Of course, we fully recognize that you people have done a marvelous job in creating this product and deserve to be fairly compensated for it. I am sure we can arrive at a price that is not only fair, but also generous. All of you will walk away with more money than you ever dreamed of or could possibly need and you are young enough to start whole new careers, if you still have an inclination to work. Of course, our agreement would prohibit you from again pursuing a similar line of activity, but the field of computer science is so vast, I am sure you can find other challenging fields to express your creativity and skill." Ray was stunned by Thompson's words, as if he had physically received a blow to his head. Dan felt a gnawing tension in his stomach as if someone were trying to rip out his gut. Neither could formulate an immediate reply.

Thompson interpreted their silence as acquiescence or, at least, he pretended to. He then drew out two copies of a sale contract and passed them across the table to Dan and Ray. "This agreement covers everything but the actual sale price, which we can arrive at after a fair valuation of the present and future earnings of MAI. I know you will have to talk it over with your partners. I would urge you to consider it carefully and fully reflect on the alternatives. Then let us meet again on the seventeenth to continue our discussion. I'd like to thank you for coming in and I look forward to our next meeting." With these words, Thompson stood up and indicated the meeting was over, without even waiting to see if Dan or Ray had anything further to say. A sinister look flashed across Thompson's face as his eyes followed them out of the room.

After they left the room, Thompson picked up the phone and gave an instruction to his secretary. A moment later the rear door of his office opened and Kurt Levin came in. Thompson glanced at him with a questioning look on his face. "Well, you heard what they said. What do you propose now?"

"I think this is going to be much more difficult than you imagined," Kurt replied. "You tried to discredit them in the previous meeting by bringing in America's top brass on AI and they held their own without flinching. I tried to tell you earlier that these people are deeply committed to their work. It's a passionate mission for them. You may have frightened O'Hara with the idea that the Government has a legal right, but any top lawyer in the field will quickly explain to him his rights and legal options. I very much doubt that subtle threats or strong-arm tactics will work."

"Kurt, you do not know me very well, so I will not try to argue with you. Please don't underestimate my resources. I have only just begun to play my hand with these people. If they are actually foolish enough to turn down our offer, they will find that their lives can become quite difficult."

52. Dissension

Back home two days later, Ray reverted to the meeting. “I don’t understand why Thompson was so determined to acquire AIS when all the experts he convened during our previous meeting did their very best to discredit and even mock the product”

“Perhaps he hoped to convince us that AIS was unscientific and would never be widely accepted by experts in the field. That way we might be willing to cave in to his pressure more readily, or sell it for a lower price,” Dan replied. “Maybe the whole inquisition was only a setup to discredit AIS in our own eyes or make it easier for him to intimidate us.”

Ray voiced a whole series of other concerns. “Did you hear what Thompson said about imposing export controls? I’ve had prior experience working with the Government while I was in Washington. I know how stifling government interference can be. The last thing I want is to spend the next ten years battling the US Government for our survival. By a single executive order they can tie us up in litigation for so long that we will go broke and lose everything we have.”

Dan could see Ray was shaken by Thompson’s overbearing attitude and intimidating behavior. Though Dan had tried to persuade Thompson that they could not be easily intimidated, one look at Ray’s face was enough to convince him otherwise. Ray had never been good at poker. He could not put up an appearance of boldness or confidence when he did not feel it. And Dan knew it was not just Thompson that Ray feared. He was under heavy criticism and pressure from family too—his brother, mother, Rana and her parents as well. Even now after MAI had established itself, they kept badgering him as if his life were a failure, just because they hadn’t been able to take money out of the company. Neil kept asking him how long he would go on making promises and excuses. It was not so much the money that Ray cared about. Domestic peace and harmony were high on his priority list. If the pressure Thompson mounted became severe enough, Ray might well choose the path of least friction and resistance. Dan tried to infuse greater calm and confidence in him.

“Can you believe it?” Ray exclaimed. “They have proof that we conspired with a known terrorist organization! I was really foolish to accept Courke at his word without checking up on his background and credentials.”

“Don’t blame yourself, Ray. You had no way of knowing and no reason to doubt him. Besides, look at the contribution we have made to a permanent resolution of the problem. Whatever Thompson says, he can’t take that away from us.”

“That may be, Dan, but Thompson isn’t on a list of known international terrorists.”

Dan kept wondering how the Government had known so much about MAI and their work and why they were so very interested in acquiring control of the product. What did they have in mind? What did they fear? He thought back to the recent break-in at MAI and the theft of Anya’s hard drive. Could the US Government have been behind them? Why steal the drive and not just copy it, so the theft could remain secret? Could the Government have been behind the two attempts to steal his briefcase as well? They had known so much about the reasons for terminating the MAIS project, things no one could possibly have known except from someone at MAI or perhaps from Jake Talbott. Could the Government be listening in on their conversations? Could they have someone inside MAI who worked for them and reported or recorded every word? Could they have known about *The Book* as well? Dan’s mind was running off in all directions, leaving him increasingly uncomfortable, but he kept his fears to himself. Ray already had more than enough to deal with.

When they reached California, Anya was away on a three-day camping trip to Yosemite with Katia and Lauren. Vinay was still in Europe and not due back until Sunday night. Dan emailed them both asking for an urgent meeting Monday morning, but without reporting what had occurred in Washington. Anya called him when she read the email Sunday night. In response to her questions regarding the meeting in Washington, Dan said he preferred postponing any discussion until they met. Anya heard the concern in his voice, but decided not to press him for further information.

Dan spent the whole weekend alone in his apartment, on long walks over to the campus up into the hills and brooding about what Thompson had said and what was happening to them. They had struggled for years to prove that their decision to start MAI was more than a foolish impulse. Now just at the point when life was beginning to reveal unlimited opportunities beyond his wildest conception, this situation materialized out of the blue and threatened to convert his dream into a nightmare. A great blow had been struck at his life and work. Why was it happening? Thompson had given his explanations, though Dan somehow found it hard to believe they were the real reason for his actions. But apart from what had

motivated Thompson, there was still another why to be answered— why this threat was coming to them at the moment of their biggest breakthrough. It seemed almost as if the wider opening had attracted the bigger threat. Had they made a fundamental mistake along the way? He had endeavored to adhere to the principles in *The Book*. Had he missed something or made a wrong decision somewhere?

His mind struggled for hours to find answers to these questions, but each possible answer only raised further questions, until his doubts proliferated in all directions and he was no longer sure of anything. At one particular point, his mind simply became fatigued and broke down. Then he became aware of a feeling of disquiet, a hollow uneasiness bordering on sadness that lodged in his heart. It had been years since anything had really made him sad. He had known loneliness as a child and sadness and depression as a youth, but it had been so long since anything had actually made him feel sad—after finding *The Book* he could not recall even a single instance—that the experience seemed strange and foreign to him. Even when MAIS had failed and they had lost everything, he had been deeply disappointed and sorry, but never depressed. There had always been a sense of hope, an inner confidence, a faith that buoyed his spirits and kept him going. Now something had clouded that inner light and was pulling him down. He looked deeper into himself. He imagined himself as a small boy peering over the edge into a deep well and at the bottom of the well concealed by darkness was despair. He quickly diverted his attention. That was not where he wanted to focus his attention.

He could not think. He dared not feel. So he just tried to exist, calmly and patiently without responding to the tug of unanswered questions in his head or the pull of unpleasant feelings in his heart. The walking helped. In between he read *The Book*. He did not even try to look for answers to his questions. He simply read it for companionship, as a preoccupation, often not even remembering the beginning of a sentence by the time he reached the end. Somehow it helped. Gradually his mind became calm, and the calm settled into quiet, and the quiet mellowed imperceptibly into silence. He kept reading, and as he read the silence grew and spread out into the far recesses of his mind like a stream of water slowly trickling into a pond and spreading out until the pond is filled to the brim and overflows on all sides. His mind became full of that silence—of absolutely nothing at all—and was at peace. Then ever so gradually the sense of fullness began to descend from his head to warm and fill his heart, like a cup of hot chocolate on a cold wintry night that gradually dislodges the chill inside and leaves a sweet, cozy feeling in its place. By the time he fell asleep on Saturday night, Dan had forgotten about himself, Thompson, the problem and even MAI. He was conscious only of a feeling of his own being.

On Sunday night his sleep was even longer and heavier than the night before. Usually a quick riser, he found it difficult to shake off the torpor of the night and find the urge to leave his bed. Then a sudden stab of dull pain reminded him of what had happened and recalled to mind the events that he had sought to push aside. The weight of his predicament came back to him in full force and he lay motionless on the bed. This time it did not come as doubting thoughts or disturbing feelings. It came simply as a great, immovable weight that descended on him and pressed him down. He could not longer find the energy to think or feel. He wondered what had happened to all his ideas, beliefs, convictions, determination. They all seemed to have vanished. He felt like he was walking blind through a minefield, sensing rather than seeing his way forward. He had never felt so alone.

He lay there for a long time, inert. Suddenly he imagined himself as he would appear to a third person, while lying on the bed. He looked preposterous to himself. He decided to stir, but he found no energy in his limbs. What had happened to all his energy, he wondered? Where had it all gone? He realized that he was using all his energy to defend himself against Thompson's blow, to remain calm and quiet and undisturbed. He found that it required enormous energy not to act, not to react under the circumstances. Then it occurred to him. Why fight it? Why struggle to blot out the problem? Why not use the force of the attack to generate momentum, as he had learned in a college class on self-defense? In his mind, he tried to relax all his defenses and let the full force of the situation impinge on him without actually letting it hit him. He did not try to duck to avoid the blow. He simply tried to disappear. A sudden blast of wind can knock over a sailboat if the boat's mainsail is placed at an angle that generates head-on resistance to the flow of air. A small adjustment in the angle of the sail enables most of the air to pass by without resistance, with little impact on the boat's position or movement. A further small adjustment can be used to change direction or propel the boat rapidly in the opposite direction. Dan found that when he thought about himself, his position, all that he had to lose, all that was wrong with Thompson's initiative, he generated maximum resistance to the force of the situation and had to use all his energy to keep from toppling over. Whereas when he let the force of the blow pass through him without resistance or reaction, he felt a surge of energy flow through his mind and nerves which he could control and direct for his own use. The more he disappeared, the stronger he began to feel. "If life is determined to send us a challenge, then we'll just have to use it to propel ourselves

forward.” Twenty minutes later he jumped out of bed feeling fresh and energized, took a quick shower, made some breakfast and bounded out the door for the office.

The four partners met first thing on Monday morning in a small conference room at a local hotel which Dan booked at the last moment so no one could possibly have had advance knowledge of the location of the meeting. The discussion—rather the debate—went on for five hours and right through lunch. Vinay kept coming back to the issue of money. How much was the Government going to offer? He was confident that he could negotiate a higher price than Thompson had in mind. On the other hand, in purely monetary terms, preliminary results at Lempe had already demonstrated that AIS could be worth billions, if they could get more contracts like the ones they had recently signed. It was unlikely that the Government would be willing to pay that much. “It is far more likely that they will pressurize and threaten us to accept a lower price using the possibility of export controls as a means to discount MAI’s future earning potential. Thompson could argue the billions in revenues was simply a hypothetical calculation which the Government would never allow to happen. He might even threaten to control our domestic sales on the grounds that all the big companies operate internationally. My fear is that if we do not accept his offer, we may end up with a product we cannot sell and a company that is worthless or back in debt. I’ve been through that once and I am not ready to do it again. I say we negotiate the best deal we can and cash in our chips. Suppose we get hundred million dollars. We can each put away enough to be secure for life and have plenty left over to start a new company here or maybe in India where our costs will be much lower.” Ray sympathized with Vinay’s viewpoint for the simple reason that it led him to a similar conclusion—sell.

“And what about all our employees?” Anya asked with thinly veiled emotion. “What happens to them? What about our plans for the future?” Vinay’s response disappointed her and she wanted to say much more, but she tried to control herself. He just looked at her wondering how to respond. To her, the idea of caving in to government pressure was obnoxious and humiliating. “I came to this country to be free of arbitrary actions by a tyrannical government. I just hate the idea of giving in like that.” What she could not bring herself to express out loud was that she also hated the idea of basing their decision on purely monetary motives. To her, that was almost as bad.

“Anya, we have worked together for five full years,” Vinay replied. “And what do we have to show for it? We all gave up good jobs and invested years of savings, all of which we used for developing MAIS. When we saw what happened with the stock market, you all wanted to drop the product and I went along. A wonderful product better than anything ever developed on Wall Street. Companies like Goldman would have paid billions to get their hands on it. Based on very questionable evidence, you all said it was defective. As if any single trader or program can be held responsible for the greedy speculative behavior of the whole market. Booms and busts are common phenomena, this one just happened to be larger than most. Anyway, I went along. I wasn’t prepared to live with a guilty conscience and be accused by my partners of greediness. But in this case the issue is not harm being done by us to others. It is harm being done to us by others. Are you prepared to start over again from scratch if they shut us down? What happens to our employees then? I’m no more interested in giving up AIS than you are, but let’s face it. We may not have a choice.” Vinay spoke strongly in his own self-defense, but his eyes pleaded for understanding.

“Vinay’s right, Anya,” Ray intervened. “In this case we may not have any other choice. If Thompson can impose controls, our employees will be out of work anyway.”

“We don’t know that, Ray,” she retorted. “He may just be bluffing. We don’t even know what the procedure is for export controls or how it works. Just because he makes a vague threat, we cannot simply give up everything and run away. It’s...it’s unmanly.”

“Anya, I know you think I am just a coward and that Vinay is being greedy,” Ray replied with more forcefulness than usual, “but this is not a situation where assertiveness will work. I have always admired your strength and fighting spirit, but there is a time and a place for everything. If we are not careful, we may quickly fight ourselves right out of business and have nothing to show for it. Then what will you do?”

Dan silently watched the whole exchange without participating in it. He heard what was spoken and understood much of what remained unexpressed in words. He knew each of them so well, he could almost predict how they would react and what they would say next. He was fully conscious that the consensus which had been their strength during good times and bad was quickly dissolving. Without that, even if they decided to oppose Thompson, they would soon fold under the pressure of internal disagreements. Unless they could all agree on a single course, they would be severely weakened. The others kept looking to him to endorse and support their views, but he could not bring himself to surrender to Thompson’s strong-arm tactics after they had come so far. On the other hand, if he openly expressed his disagreement, it might lead

to quarreling or, worse still, a split between them, which he could not risk. So he simply remained quiet and listened to everything they said without comment or reaction.

“I will hate myself if we give in now,” Anya said in a more subdued voice in which anger was giving way to helplessness and frustration. “I would feel so selfish. What happened to our idealism? What happened to our dream?” She could not help feeling deeply disappointed with Vinay for stressing the money argument. Sure she would love to be rich, but not at the expense of her principles and beliefs. If they were going to think selfishly, she was more concerned about losing her Green Card status than losing money. Thompson implied their status as foreign nationals could become an issue. She knew she could not afford to get into a confrontation with her host government. Vinay could always return to India where he had family business, but Katia and she had no place to go. She had burned all her bridges and had told herself that she would never go back to live in Russia, but if they were kicked out of the USA and accused of associating with known terrorists, she might very well have no choice. She was disappointed with Vinay and angry at him for being timid, mercenary and selfish at a time that she believed called for strength, courage and self-sacrifice. She did not expect more from Ray. Somehow she loved him in spite of his weakness. He could not help himself. But she could not bring herself to excuse the same thing in Vinay. She expected more of him. She felt a strong urge to lash out at both of them and tell them how she felt, but she cared for them both too much. She was deeply hurt but could not bring herself to hurt either of them.

Vinay could not stand to see Anya’s torment. He would not admit it even to himself, but the thing he cared about most was not the money. It was her. He continued to explain and argue, but inside his power to oppose was quickly fading. “If we do not sell,” Vinay said, “we might have to shift the whole company overseas for security.”

“What makes you think that other governments will be more reasonable or less susceptible to US pressure?” Ray asked. He cited numerous examples to illustrate the tremendous power the US exerts internationally through not very subtle forms of economic and political pressure.

“I doubt the US Government pressure can reach all the way to Moscow,” Anya added, “but I can assure you that the interference of the Russian Government would be far worse than anything Washington could contemplate. Running away is not the solution.”

“I am not running away,” Vinay retorted angrily. Anya was shocked by the sharpness in his usually soft, melodious voice. She had never heard it before and it cut her. “I am simply saying we need to consider all our options. The US is not the only place on earth. If not India or Russia, then perhaps Quebec or Amsterdam or Paris or someplace else.”

Anya stared at the table and replied softly, “There’s an old Russian proverb about the fact that you don’t sell your child just because the price is high.”

“What about you, Dan?” Ray finally asked, “You have been sitting quietly as usual letting us all speak. But we have a right to know your thoughts as well.”

They all turned to Dan, who nodded and replied, “The last thing I want to do is hand over AIS to Thompson. I would almost rather lose the company and everything we have put into it and I’ll tell you why. As far as I am concerned, AIS is not merely a commercial product. We have worked for years to incorporate into it a knowledge that the world needs, a knowledge that can solve people’s problems and make this place a better world for everyone, a knowledge that is capable of persuading terrorists to lay down their weapons and help failed business people succeed after they have already given up. It has already shown it can reduce tensions and minimize conflicts between individuals in small groups and organizations We are already on AIS⁶ and it seems like we have not begun to fathom or tap all the knowledge *The Book* has to offer. It contains so much more knowledge that we have not yet incorporated into AIS, and beyond that so much that we have not yet even begun to comprehend. The very thought of turning it over to Thompson strikes me as a treason even greater than betraying my country. It would be treason against humanity. I don’t know why Thompson wants AIS or what the government is so afraid of. But I do know that if they once get hold of it, our dream is dead. I would rather fight and lose than give up without a struggle. I would rather walk away empty-handed than take Thompson’s bribe money as a reward for doing what I know is wrong. Remember how we felt when we first met back in Fort Lauderdale after the debate between Dent and Stearne? Personally, I felt like the future of humanity was being debated at the conference. It was not simply a question of technology or artificial intelligence. It was a battle between two opposing world views. Dent and his kind have taken over and ruled for the past hundred years. Stearne seems to be a lone voice in the wilderness, yet a powerful and compelling voice that touches the soul. I know it may sound arrogant, but I feel AIS is the best thing that has happened to the world in a long time. I don’t mean because we have done it. I don’t claim any great personal contribution. It’s because of *The Book*. Are you all ready to drop this

project in the middle and walk away, the first time we meet some significant opposition? If so, we might as well do it. Because I am sure that if we get through this successfully, we will certainly meet greater obstacles down the line. You heard how Graham, Boyd and the other scientists tried to rip us apart. Do you think that is the last of their opposition? If making money is your index of success, then selling makes sense. But if the goal is to do what we set out to do six years ago, what we all gave up our jobs to attempt, then I think that in selling the company we are selling ourselves and our dreams. Ray is right about the risks. And I don't blame him or any of you for wanting to avoid confrontation. I would like to avoid it too. I do not feel any self-appointed mission to take on the US Government and try to transform it. That is not the issue. The issue is that the Government is trying to take us on and stop us from doing what we set out to do. Thompson wants to make us feel guilty, as though we have done something wrong. But the intensity of his opposition makes me feel even more certain that we are doing something very right. I don't fully understand it, but I feel it."

When Dan finished, the group fell into silence. They all withdrew back into their own worlds. For twenty minutes no one said a single word. Then Anya spoke in a soft soothing tone. "Let's consult AIS⁶. After all, we did start out to produce a decision-making system and we have the best the world has ever seen. Let's ask AIS⁶ what we should do." They all were relieved to have an excuse to postpone making a decision, so they agreed and adjourned.

Vinay left the meeting without speaking another word to anyone. He consciously avoided making eye contact with Anya, who drove to the office to start preparing AIS⁶ for consultation on their dilemma.

53. Forces of Darkness

Dan went home to consult *The Book*. His biggest concern now was his partners, not Thompson. He saw all their work together unraveling at the meeting and none of the others seemed to realize it. It had been raining heavily the past two days, carrying mud down the slope bordering the walkway from the garage up to the entrance of his apartment complex. No matter how hard he tried to maneuver, he could not avoid getting his shoes wet and dirty. As he opened the door to his apartment, he was thinking of the look on the faces of his partners as they left the hotel. As he slid off his shoes to place them on a mat as usual, he noticed a few tiny specks of mud on the carpet. He thought he had been more careful than that when he came in the night before. He looked around and saw faint tracks of mud across the room. Suddenly, he became suspicious. Could someone have been there during his absence? He walked carefully around the room checking everything—his desk drawers, the files in the credenza, the bookshelves with the 30 volume Encyclopedia and other volumes. Everything seemed to be as he had left it. There was absolutely nothing in the apartment worth stealing, except a stereo system and TV which would be difficult to remove without being observed. The only things of real value were his notebook computer, *The Book* and *the Archives*. Fortunately, he had taken his computer and *The Book* with him to the meeting in his briefcase. Everything else was accounted for. What could they have been looking for? He opened the wall safe. He had not left anything inside except a few documents. They were untouched. He then examined the beading behind the door where he had created a compartment for *The Book*. He thought it was not exactly as he had left it, but he could not say for sure.

Was it possible that the government knew about *The Book* too and had come looking for it? The idea was too preposterous to pursue. There were probably less than ten people at MAI who had ever heard about it. Could word have leaked out somehow? It was a frightening thought. They could always make copies of AIS, any number of copies, and conceal them. But there was only one Book. If someone was truly after it, the two attempts to steal his briefcase may have really been attempts to steal *The Book*. In that case, he would have to be extremely careful from now on. He could always try to conceal it somewhere no one would find it, but that would interfere with his daily reading and he might run the risk of the pages disappearing again from neglect. Or he could keep it with him always and hope it was never seized, which would make him a target for yet another robbery attempt.

Could Thompson be after *The Book*? That made no sense. Thompson had made it clear that he was after AIS⁶. There was no reason to believe that Thompson even knew about the existence of *The Book*. Perhaps they—whoever they were—had been after his computer hard drive and did not even know or did not care about *The Book*. Dan wondered what would happen to *The Book* if someone actually managed to steal it. Would the pages disappear or would it respond to the attention of the thief as it responded to his attention? Anyway, he decided that from now on he would never let *The Book* out of his sight.

He had gotten into the habit of consulting *The Book* on a variety of issues. His method was to quiet his mind and then open it to some random page and read whatever lines caught his eye. He had gotten the idea from a sentence he had read in the first chapter of *The Book* which stated there was no such thing as chance. All events have a significance which reflects one's own inner conditions and the deeper forces at work in life. It was simply a device to remove conscious intention and allow subtle conditions to express themselves through apparently random events. If he could remove conscious intention and causality simply by the way he opened *The Book*, it should allow deeper relationships and correspondences to reveal themselves. Each time he consulted *The Book* in this manner, he came upon a word or a passage that seemed to exactly fit his question or condition. It had helped him work through a number of tough business decisions and technical problems that had defied days of labored study. He had even found it useful to help him decipher difficult passages in *The Book* itself. Consulting another page at random invariably revealed a relationship or perspective that he had missed before. He made it a point never to speak with his partners about this practice, but he did on occasion consult *The Book* on their behalf to address a difficult problem they were struggling with. They always found that the answers it had given were helpful, without knowing their true source.

Dan had always believed in human free will, rather than fate. He did not look to *The Book* to predict his future. He looked for guidance on how to act more effectively to resolve problems and tap opportunities. Invariably, *The Book* helped him become more conscious of how his own inner perceptions and attitudes determined external events. His very first experience had provided striking confirmation of the power of the greater insight he derived from *The Book*. During the first round of recruitment for PAIS, Ray had hired a very smart and attractive young psychologist named Sylvia Reynolds to head up research on small group dynamics. Ironically, she became the main source of friction and discontent within MAI, provoking quarrels and generating tension with virtually everyone she interacted with. Whenever Ray tried to counsel her to

modify her behavior, she accused her co-workers of a conspiracy to undermine her position. Ray felt powerless against Sylvia's assertiveness and Dan was reluctant to interfere in Ray's area of responsibility. One night Dan went home preoccupied by this problem and opened *The Book* at random. The passage he read explained that weakness arises from the wrong application of principles to a situation. It suddenly occurred to Dan that this might be Ray's problem. Perhaps it was not Ray's incapacity to confront Sylvia, but some wrong understanding on his part. Ray often mentioned that his father had taught him from early childhood that politeness and gentleness were imperative rules of conduct with respect to women. Taken as a general norm, it was admirable. Taken as an inviolable principle to be followed without exception, it left him open to exploitation and manipulation. Indiscriminately applied, it became unmanliness. Like every principle of life, it had to be appropriately balanced by other principles, such as self-respect which demands the capacity to stand up for what one believes to be right and not submit to irrational pressure or superstitious social habits. The next morning, Dan casually walked into Ray's office and mentioned the passage in *The Book* and his thoughts on it. The first requirement for effective leadership is self-respect. Without that others will never respect your capacity or authority. People respond to strength as well as fairness. At the time, Ray had listened to his explanation without comment. He used to call or walk over to Sylvia's office when he had something to communicate. Later the same day, he called Sylvia into his office and spoke with her for over an hour with the door shut. Everyone knew something was happening, but no one ever found out what transpired behind that closed door. From the very next day, Sylvia began to exhibit model behavior dramatically different from what her colleagues had come to expect, and she maintained it during the remaining three months of her work at MAI. Dan never discussed the event with Ray, but he learned from it a valuable lesson about the power of knowledge to resolve apparently intractable problems.

Bringing his mind back to their present dilemma, Dan understood that Thompson was harassing them now because he thought they were weak and could be pushed around. Without strength they could never resist his irrational pressure. But what strength did they have to combat the authority of the US Government? He sat for a few minutes trying to clear his mind, and then opened *The Book*. The pages slipped through his fingers and stopped towards the very end. He looked down and read the following passage:

Formidable forces of Darkness, evil and violence are active in the Ignorance. Their aim is to contaminate or destroy all higher Light. They intolerantly oppose and persecute all that tries to break away from the established order. In rare instances where the higher Light succeeds in establishing itself, these forces infiltrate it and offer to embrace it, which is far more dangerous than their opposition. In this manner they seek to dilute or contaminate the new principle. If the intention of the higher light is to embrace all humanity, the opposition might be even more violent. If the aim is high and the new light also bears with it a new and greater power, it might be necessary to separate and establish separate islands of the new life and spread from there to challenge and transform the established order, bringing aid and illumination which aspiring humanity may eventually come to understand and accept.

It was a difficult, enigmatic passage which he had to read and reread several times before it began to make sense. It spoke of danger, formidable forces of Darkness, supporters of evil and violence. Was it referring to the US Government or to some other forces? It referred to intolerance and persecution by an established order of human Ignorance. Was this order the same as the forces of Darkness or different? Were they dealing with one potential enemy or several? Could the break-in have been by someone even more dangerous than the Government? 'Intolerance and persecution': Hadn't Thompson's words reflected both those attitudes? But the next passage was puzzling. It seemed to imply that even if somehow AIS was accepted, that acceptance might be even more dangerous than open opposition. It might lead to a dilution or perversion of the new, an expropriation or commandeering of the new to serve the old. The passage said that the reaction and opposition would be even more violent, if the intention was to reach the whole earth, humanity as a whole, rather than just a portion. Did it indicate that they should confine their effort to what would benefit themselves and MAI, their clients or America, and give up the idea of doing something that would have universal benefit? Toward the end of the passage, *The Book* seemed to suggest a possible strategy—'to establish separate islands of the new' and spread out from there. This last portion seemed to him the most important. It seemed to suggest a strategy, but what it meant was not clear. He pondered over the quotation until he fell asleep in the chair.

Dan awoke with a start after several hours in the chair with *The Book* still on his lap. A chilling sense of fear spread through his body. His first waking thought was that there was someone in the room. He looked around, but saw nothing unusual. Still nervous, he got up and slowly walked down the hall into the bedroom. His legs were shaking. He called out, but there was no answer or sound of any kind. He checked the bathroom and the kitchen as well. Nothing. The door was still locked from the inside just as he had left

it. He told himself there was nothing to be afraid of, but his body was still shaking. He glanced at the clock and saw that it was past two in the morning. He felt very much like talking to someone, but who could he call at this hour without disturbing or even alarming them? He lit some incense which Lauren had given him the previous Christmas, made some herbal tea and sat down again in the chair with *The Book*.

He felt a sense of relief when morning finally came, relief coupled with concern regarding what *The Book* had indicated and what he had felt during the night. He could recall only one former occasion on which he had felt fear of that intensity. It had been when he was home alone at the age of ten and watched Hitchcock's original *Psycho* on TV. He was so scared he could not take a shower for a week. For a year after that, he always locked the bathroom door before bathing. The same feeling was there now. He knew there was no objective reason to feel afraid, but the vibration of fear was real nonetheless. It was not due to fear about what the government or someone else might do to them sometime in the future. It was more like a premonition or a perception about what they were already doing, which had not yet manifested itself.

54. Quadrant IV

Dan was anxious to get out of the house as early as possible. When he reached the office, he could see from the cars in the parking lot that Vinay, Ray and Anya were already there. He was not the only one who seemed to have had a restless night. Ray looked weary and bleary-eyed. Anya had a disheveled appearance, as if she had worked most of the night and slept on the sofa in her office, which turned out to be what she had done. Through the glass window of his office, Dan could see Vinay speaking with Lauren. He had a pained expression on his face.

“The thing that hurts me most,” Vinay told her in a subdued voice, “is that she could call me mercenary. Didn’t I walk away from MAIS without a murmur of protest? You were there, Lauren. You know what happened. When my partners came up with this crazy idea that MAIS was responsible for the market collapse, did I oppose them? Did I insist that personal profit was more important than public good? No, I pondered over what had happened and I conceded that circumstantial evidence suggested there might be a connection. You and I saw the difference when you consulted me on investment of your own funds. I agreed to give up a product worth hundreds of millions because they said so. Yet after all that she could call me mercenary.”

Lauren understood the whole thing from his tone of voice. It was not losing AIS or even MAI that was really bothering Vinay. It was losing Anya, someone he had not even won yet. She could fully understand Vinay’s attraction to Anya. What man wouldn’t be attracted to her? Lauren loved Anya like a sister, but she could not help feeling jealous when she saw how hurt Vinay was by Anya’s response. They were all part of an invisible triangle—or was it a quadrangle?—founded on deep attraction with no external expressions or commitments. She knew how Vinay felt. She wasn’t entirely sure how Anya felt in return. She would have to look for the right occasion to find out.

Just then Vinay received a phone call and asked Lauren to excuse him. On an impulse Lauren glanced across the open space separating their offices and saw Dan looking up from his desk. He looked haggard and exhausted, as if he hadn’t slept for days. Leaving Vinay’s office, she went into the cafeteria; prepared a strong cup of coffee the way she knew Dan liked it and carried it into his office with a warm, compelling smile. In spite of his fatigue, he felt a surge of energy as he returned her smile, accepted the mug from her hands and took the first sip.

The call to Vinay was from a woman at the US immigration authorities in San Francisco asking him to report to their office on the sixteenth morning for an interview, that is, the day before the next meeting with Thompson. Vinay inquired about the purpose of the meeting, but the woman refused to give him any information. He requested that the meeting be rescheduled until next week, but she curtly informed him that it would not be possible. He told her that he had not received any written notice of the appointment and asked whether she had written. When she said that she had not, he replied, ‘Isn’t that a bit unusual?’ At that point she hung up. Vinay was deeply shaken by the call. The perfunctory tone and manner of demanding his appearance smacked very much of the heavy-handed behavior of some Indian bureaucrats and police officials that he had come in contact with before moving to the USA.

A few minutes later, Anya received a similar call from the same office asking her to report on the same day. A surge of anger rose up in her when the woman addressed her precisely as a Russian official would have done in conveying the same demand. The words were polite, but the tone was offensive. At first she was too provoked to even think about the implications. When she started to consider them, she felt like her whole life was collapsing around her. “Where will we go, if they throw us out?” she asked herself. “I cannot bear the thought of returning to Russia.” Anya was always at her best when she was placed under pressure, especially when she believed that the pressure was intentionally being applied. Challenges always brought out her inner strength.

At 11 am, Anya informed them that she was ready with AIS⁶’s analysis. Without saying anything to anyone, they all walked out the front door to drive to another hotel three miles away. As Anya passed her in the hall, Lauren stopped and whispered something in her ear that made Anya pause for a moment, look in her eyes for confirmation, and then smile shyly. “I just may have lost a wonderful man,” Lauren said to herself as she walked back to her own office.

In the car Vinay reported to his partners about the call from Immigration and Anya said that she had received an identical instruction to report the same day. “Obviously Thompson wants us to understand that he meant what he said and has the power to do what he has threatened to do,” Dan remarked. Ray seemed to be even more disturbed than Anya and Vinay about their news. He could just feel Thompson bearing down on them. Thompson was sending them a message. This was only a taste of what he could do.

There were no jokes or small talk as they entered the hotel conference room. Anya was unusually serious as she passed out copies of the AIS⁶ report on the situation posed by Thompson's demands. The first page contained the standard matrix diagram of the four quadrants with scores in each of the four boxes representing the relative strength of factors in their current situation. One glance at the page was sufficient for them to understand their situation. The issue fell squarely in Quadrant IV, which meant that any action they initiated from this position was doomed to failure.

"I'm confused," Vinay said. "This matrix reminds me of the one generated for Accor, a company in a dying industry that has given up hope and was ready to close the door at any moment. But that does not accurately describe our situation at all. We have consulted AIS dozens of times with reference to key decisions at MAI and this is the first time that it has ever placed us in Quadrant IV, as far as I can recall. Could the situation really be that difficult to resolve?"

Ray nodded his head as if to silently communicate that this was what he had been trying to warn them about all along, but they would not listen. "I'm not surprised at all, Vinay. Externally, we are up against the most powerful opponent in the world. The Government has the legal right to act in the interests of national security. As Thompson just reminded us, you and Anya can be deported at on a moment's notice. What defense can you possibly put up when they have incontrovertible evidence that we conspired with a known terrorist organization? Thompson has our own admission that MAIS may have contributed to the dotcom bust. He has time on his side. Even without getting a final legal judgment in its favor, which might take years, the government need only stall the process of litigation long enough to drive us out of business, because we lack the financial resources required to endure a prolonged dispute. That sounds to me like an external situation which is entirely negative. Internally, we are extremely weak. We do not have any first-hand knowledge, expertise or experience in dealing with the government, nor do we have high level political connections to help us out. We are not aware of any good options or alternatives, short of leaving the country. As you said yesterday, we have already lost everything once and have a mortal fear of losing it all a second time, which could well happen if we refuse Thompson's offer. The money itself is very tempting, since it would guarantee our future financial security, so it weakens our capacity to resist manipulation. The internal conditions are negative too. So I am not at all surprised. It's a clear Quadrant IV situation."

Seeing that Dan did not choose to add anything or take exception to how AIS⁶ had summed up their position, Anya continued. "So we are in Quadrant IV. Obviously anything we attempt from this position will fail. So we need to find a way to move out of this quadrant as quickly as possible, preferably before your meeting tomorrow. I suggest you all turn to page two and read AIS's recommendations. The page contained a list of six principles.

Problems arise when organizations abandon their founding principles.

Fear attracts danger.

All problems of life are problems of harmony.

You cannot fight falsehood with falsehood.

Complete knowledge is incapable of selfishness, domination or evil.

Strength issues from universality.

"The first three principles seem to be an explanation for the problem and the last three the solution," Ray observed. "In the first statement, AIS seems to imply that the problem has resulted because we have drifted way from the inspiring goals with which we set out when we founded MAI. But I am not sure I agree."

"Ray, perhaps we should look at it in a slightly different way," Dan replied. "Maybe AIS is saying that the reason we are in Quadrant IV is because under the pressure of Thompson's threats and temptations, we have moved away from our founding principles."

"Dan, I suppose you are referring to what I said yesterday about being attracted by the money," Vinay said, looking defensive and slightly embarrassed at the same time.

"We are all attracted by the money," Dan replied, "even if you were the only one who expressed it yesterday. None of us want to lose everything and have to start all over again. But I think we all agree that profit was not our primary motive for starting MAI. We demonstrated that when we abandoned MAIS. So to make money the primary motive at this point can be considered abandoning our principles.

Vinay continued, "I confess that yesterday afternoon the government's offer looked very attractive to me. It seemed the only sensible option. But not now. If Uncle Sam thinks he can buy me out or use my visa to make me submit, he is wrong. My grandfather fought British rule in India and helped drive the empire from our shores, as he used to say. I didn't come to America to work for another imperialist regime. I

don't know how you guys feel about it, but I am not ready to sell out. I am not ready to run away either. Let them deport me if they want. But I am not leaving on my own initiative."

Anya felt a thrill of delight ripple through her body as Vinay spoke those last words. She loved courage when she found it in other people, especially courage to pursue a higher principle. Subconsciously she had been afraid that Vinay would opt for the money and she anticipated a sense of deep disappointment when he began to speak. She felt a deeper affection for him at that moment than she had ever felt before. Dan felt a great sense of relief on seeing the determination in Vinay's face. It struck him as significant that the threat from immigration which Thompson calculated would force Vinay to give in had had the very opposite effect. He recalled *The Book* referring to this phenomenon as a law of life. Up to now, Dan had seen Vinay's real strength only once before, when he agreed to give up MAIS because of its negative impact on the market. He had deeply admired Vinay for that act. Most of the time he was so fun-loving and casual that Dan had never been sure what was beneath the surface. Now seeing it emerge again, he realized how fortunate he was in his choice of partners. Then it occurred to him that he had not actually chosen at all. Life had.

"There is another way you can read this," Ray added. "It could refer equally to the Government's conduct. The problem is the result of the fact that the Government has abandoned the original principles on which this country was founded."

Dan agreed, but he pointed out that they had no power over what the government did. They could only alter their own attitudes and behavior. So in that sense, they had to focus on how the principle applied to them, rather than to others. Then he added, "The second principle states another reason why our internal position is weak—fear. *The Book* explains that what we crave for tends to avoid us and make us run after it, whereas what we fear is attracted by the vibration of fear to approach. I think AIS⁶ is simply saying that as long as we are afraid or react under pressure, we are weak and in danger. If we want to move out of Quadrant IV, we have to stop worrying about what Thompson can do to us and to MAI. We have to stop being afraid of his threats." No one looked at Ray, but Ray knew these words were particularly directed at him. Although the threat was still very real, the knowledge that fear made them weak and vulnerable gave him greater strength to reject it.

Anya moved on to the third principle. "This statement explains why AIS⁶ rated our inner conditions negative. It is because of the change in our partnership. When I was responding to AIS⁶'s evaluation questions yesterday evening, it became evident to me that this is the real source of our weakness. When we met at the hotel yesterday we had lost the sense of trust and harmony that has held us together through so many difficult challenges. If we lose that we become powerless. Thompson managed to divide us. He tempted us with money. He tried to frighten us over our association with the IRA. He threatened us with export controls. And his strategy worked. By the end of the day we were nearly at each other's throats. Last night I felt more disturbed and unhappy than I have ever felt during the past five years. At first I thought it was because of what Thompson was doing. In the middle of the night, I realized it wasn't that at all. It was what we were doing to ourselves, what I was doing too." Anya looked over at Vinay with an apologetic expression.

"Well, the fourth principle is certainly clear," Ray remarked. "Thompson is using deceptive, heavy-handed and false pretenses to compel our submission. AIS is saying that resorting to similar strategies will not work for us. It will only weaken our position. That means we have to fight it with truth. The question is: what is the truth we can use to combat his threats and temptations?"

"I believe the truth AIS is referring to is contained in the fifth principle," Dan said. "The idea that complete knowledge is incapable of error or evil is one of the central themes of *The Book* and one of the points where it most radically departs from contemporary science. The scientist believes that knowledge and results are almost independent of one another. He perceives that his task is to discover knowledge, but he cannot be held responsible for how that knowledge is used by other people. Even though Oppenheimer and many of the other members of the Manhattan Project lived to deeply regret their contribution to the development of nuclear weapons, most scientists would insist that they had done absolutely nothing wrong. If any mistakes have been made, it has been made by the politicians. But according to *The Book*, true knowledge, which means knowledge that is complete and all-encompassing, cannot be used for wrong purposes. That means it cannot be used selfishly for one-sided gain as MAIS was used by Jake. It cannot generate negative side effects such as environmental pollution. The application of complete knowledge is always in harmony with the whole."

Ray could not understand Dan's point and became impatient. "We've discussed this subject before, Dan, but what does it have to do with our present situation and our effort to escape from Quadrant IV?"

“I think AIS⁶ is telling us that we fight falsehood by demonstrating that AIS⁶ is incapable of serving falsehood.”

“How do we do that?”

“By applying AIS⁶ to address some issues of critical concern to the US Government,” Dan replied. “Suppose we take up a major policy issue, such as nuclear weapons, and show the government what AIS⁶ recommends. My guess is that they will find its conclusions either impractical, outrageous or too absurd to even consider seriously. If that is the case, what motive would they have for insisting on control or purchase of the software? We fight them with truth.” Ray nodded his head in comprehension and agreement.

“Everything makes sense to me, except the last principle,” Vinay commented. “I just cannot figure out what AIS means by universality.”

They all sat quietly for several minutes studying the report. Dan also struggled with that last line. Suddenly his mind flashed back to the passage in *The Book* which had he read the night before about the necessity to separate and establish separate islands of the higher light. “According to *The Book*, all pain and suffering is the result of ego. Ego is that which limits us. When we transcend ego, we universalize. Perhaps, it is telling us that our problem arises because our current thinking and action lacks universality. Our thinking is exclusively confined to our company in Berkeley, the American market, the US Government, our personal gains and losses. Suppose instead we try to view the situation from a universal perspective. We have created a product that can help the whole world. It has global applications and a global market. Our entire problem arises because we are localized. Suppose we could universalize ourselves, then there is nothing that Thompson could do to stop us. He could certainly hurt us by limiting our access to the US market, but he could not stop us.”

“I don’t follow, Dan,” Anya said, “what do you mean by universalize and how can we possibly do that when the threat is so imminent?”

“Well, there is one thing we could do immediately. Suppose we park copies on the Internet in servers around the world with coded access that only the four of us know, plus perhaps one other unidentified person who resides outside of the USA. Then there would be no way for the government to control the program, no matter what they do to us. If they threaten us, we can always release it to the world. If Thompson raises the threat of export controls, we can convince him that the only thing he will accomplish is to force us to give away the software to the whole world, including all America’s enemies.”

“I’m not sure I want to do that,” Anya said.

“We don’t have to do it, Anya. It is enough we persuade Thompson that we are capable of doing it out of some starry-eyed principles of freedom and universal fraternity.”

Vinay nodded and smiled for the first time all morning. “It just might work.”

“What AIS says makes sense,” Ray remarked while shaking his head, “but I still don’t see where it will get us. The decks are stacked and all the aces are with Thompson.”

Dan replied, “I think you are forgetting one of the first principles we studied, Ray. If we were really as weak as you think, Thompson would not have bothered to attack us. Life does not attack the weak because it has nothing to gain by doing so. No one bothers to defame the politician who is over the hill and out of office or rob the slum-dweller who has nothing to eat at home. Thompson is after us because we have a strength and he wants to take it from us. We need to find a way to utilize that strength to defend ourselves.”

55. The Plan

By the end of the afternoon they had worked out a plan of action. There were still three issues that needed to be addressed: How to secure AIS⁶? How to respond to the demand from the US Immigration? How to conduct themselves at the meeting with Thompson on Thursday? The first priority was to reduce the vulnerability of AIS⁶. They decided to break up the program code into a dozen interdependent pieces, divided in such a manner that even if one or a few of them were intercepted, they would be unusable without all the others. They agreed on an encryption technique; actually, different encryption methods for each piece. Each of the parcels would be disguised as a different type of algorithm—astronomical, subatomic, geological, electronic, etc. so that its application could not be easily deciphered by examination, even if it were decoded. Then they identified safe servers located in different countries that would be least accessible to influence from the US Government. A variety of different types of servers were selected to avoid any pattern—a scientific research institute in Bangalore, a library archive in Moscow, an observatory in Australia, a Microsoft mirror site in Europe, etc. Vinay jokingly suggested they lodge at least one parcel on a secure US Government server in Washington. Dan thought that it was a tactic that might come in handy, so they agreed. It was essential that the server administrators had no knowledge of what the parcels contained or where they came from. That would minimize the risk of exposure and protect the hosts from prosecution in the event of discovery. Anya said she could obtain access to a long list of servers through a hacker she knew in Leningrad without disclosing their purpose or revealing which ones they proposed to use. They debated how many copies of each parcel should be made and finally agreed upon twelve. Twelve parcels, twelve copies of each, one hundred forty-four in all. That would enable them to ensure geographic dispersion and a very wide margin for error or discovery. Anya said she could complete parceling and uploading of the parcels within twenty-four hours. The same method was agreed upon for AIS⁶'s data bank, which was already hundreds of times larger in size than the program and growing daily. That too would be broken up into twelve parcels, each multiplied twelve times and sent to a different set of servers. They also agreed that the uploading had to be done off-site, considering the high probability that MAI's own network was under surveillance. They agreed to follow a similar procedure to protect copies of new code, as and when upgraded versions of AIS were completed.

A more difficult question was deciding what to do with the key or keys. Who should possess knowledge of the parcels and the codes to access them? Should they make one key or many? Where should the key or keys be stored? The key would be so small that concealment would be very easy, but discovery could be fatal to their whole plan. The more keys they made, the less the difficulty in preserving the program from confiscation or loss, but the greater the chances of discovery or theft. They finally decided to split the key into two parts and make two copies of each. Dan and Ray would share one key, Vinay and Anya the other. Each of them would be responsible for concealment of their own key and they agreed not to disclose the locations even to one another. All these precautions seemed extreme and melodramatic at the time, but later on they were glad that they had taken the issue so seriously.

The idea of these elaborate procedures was to ensure that AIS⁶ could never be confiscated and withheld against their will from either the partners or the world. But that would not prevent someone else from acquiring a copy of AIS⁶ from MAI's own servers. They had already instituted all the standard safeguards adopted by Silicon Valley companies to protect their proprietary software from unintended duplication, i.e. commercial theft. But they were not completely sure that these procedures would be fool-proof against those who were now interested in their work. Anya agreed to consult her Leningrad hacker for advice on further precautions they should take.

These things agreed, they turned to the second pressing issue: the appointments with Immigration for Vinay and Anya. After discussing a variety of approaches, Dan suggested that both Vinay and Anya place calls to colleagues or relatives in India and Moscow to discuss the possibility that they may be returning to their native countries shortly to set up permanent offices for MAI. Dan emphasized that the calls should be made on MAI phone lines. Anya objected to the proposal. "Dan, I already told you I do not want to go back to Russia. I want to stay here. And Russia is not the place to open a MAI office anyway."

Dan smiled and replied. "I know you don't want to go and I don't want you to. I also know Russia is certainly not high on our list for strategic relocation. If we have problems in California, I would hate to imagine what they might be in Moscow! But the US Government does not know how you feel or what we are thinking. Just now the important thing to communicate is that we have a contingency plan in case they try to levy the visa threat against either or both of you. If they think that threatening you may only hasten your departure from the USA where they can exercise some measure of control over your activities, then they have no incentive to employ that weapon. If they know how much you really care, you are vulnerable."

It was also agreed that Vinay and Anya would attend the appointments and simply listen to whatever they were told without expressing particular concern regarding any explicit or implied threats they might receive.

Finally they turned to the third issue, Thompson. He was expecting a reply to his offer and would not wait indefinitely. Vinay came up with a resourceful strategy. “We agree we will not sell under any circumstances, but Thompson does not know that. In fact, he may find it very difficult to believe, even if we tell him. He believes money can buy anything, it is only a question of price; so let’s play on that belief. Let us go in and negotiate on price and see how high we can push him. It will buy us some time and, perhaps, he will reveal some useful information about what they really want and why.”

Dan agreed with that strategy and added another dimension. “Let’s do more than negotiate. Let’s sell to them. Let us go in there with a sales presentation designed to prove that AIS⁶ is worth more than they are offering.”

“Why would we do that, Dan?” Anya asked. “I thought our objective was to discourage them, not to raise their interest level or fuel their greed.”

“You are right, Anya,” Dan replied, “but I think there is a way we can do both at the same time. It is not necessary that our sales presentation be convincing. It is enough that they think we believe it is convincing. Suppose we go in with a demonstration of AIS⁶’s capabilities that we know they will reject as unacceptable or, better still, erroneous.”

Then Vinay asked, “You mean falsify recommendations to convince them AIS⁶ has flaws?”

“No, I don’t think we should falsify anything, Vinay. It is enough if we tell them something they do not want to hear. That should not be difficult, because the obvious solution to the many problems facing the USA and the world today is the last thing that politicians want to consider.” Dan suggested they review some of the test projects they had taken up on international problems with AIS⁵ and suggested they run the same tests with AIS⁶ to see how their results compared. Anya said she could have those results by the following evening. Dan proposed that he, Ray and Vinay attend the meeting. He would make the presentation on the software, Ray would present the case studies, and Vinay would handle the business negotiations. He also suggested that they request Thompson to invite representatives from related government departments for a complete overview of AIS⁶’s capabilities. “I will tell him to bring people with expertise in politics, security and economics. I need not mention espionage. I am sure he will think of that by himself.”

Vinay added, “Ray, be sure to send him confidentiality agreements to be signed by everyone attending the meeting. That will help convince them we are serious about selling.”

By the end of the meeting, a feeling of hope had replaced the gloomy darkness with which Dan had started the day. He found his natural confidence returning and with it his energy and determination. The heavy feeling that had descended on him over the weekend seemed lighter now and more manageable. His thoughts were clearer, his emotions calmer, his body lighter in its movements. They had received a stunning blow and survived it. Now they were preparing for battle.

Everything went as planned during the next two days. Anya parceled and uploaded the software to twenty-four servers internationally and distributed keys to each of them. Ray spoke with Bill Gershwin and set up a fail-safe mechanism with two off-shore trustees. Vinay and Anya placed their overseas calls to discuss opening offices in Bangalore and Moscow. On the sixteenth morning they each met with an official from the US Immigration in San Francisco, a woman named Margaret Bleacher, who was cold, curt, suspicious and bordering on offensive. Vinay sensed from her questions that she was being asked to put pressure on him, probably without fully knowing why. Bleacher made some vague threatening statements implying possible violations of immigration rules. Vinay just listened impassively without responding. Anya was less sanguine. She was annoyed and irritated by Bleacher from the moment she sat down and found it difficult to restrain her feelings, especially when Bleacher started inquiring about her daughter, Katia. Halfway through the meeting, Anya realized that reacting to Bleacher was exactly what they wanted her to do. They wanted to disturb her. To react was to play into their hands, whoever they were. From that point on, Anya assumed the coolness and impersonality of a low-level Russian bureaucrat perusing someone else’s job application. She started thinking of Bleacher as the interviewee rather than the interviewer and critically examined every aspect of her appearance and every gesture she made, silently passing judgment and listing reasons why she would never hire Bleacher for a job, even as an intimidator. Anya observed that the less concerned she became regarding Bleacher’s behavior, the more subdued and helpless the lady appeared to become. Finally she just ran out of energy and questions and curtly dismissed Anya. Clearly the government was trying to send a not too subtle message. Vinay and Anya sent one back.

56. The Great Men

On sixteenth evening Vinay drove Dan and Ray down to SFO for the flight to Washington. As Vinay was pulling out of the parking lot, a reckless teenager in a souped-up truck ran a red light and nearly smashed into them, before veering sharply to avoid a collision. Anya had agreed to complete the presentations that night and email them to Ray before morning. The meeting took place in the main State Department building on C Street. They were led into a conference room with a large circular table that could seat about twenty-five. There were fifteen people present when they entered, including Thompson and his assistant. Thompson introduced the Director of the Bureau of Intelligence and Research, the Assistant Director of Political-Military Affairs, the Director of Policy Planning, the Director of Economic & Business Affairs and nine lower level officials. This time there were no academics present. As he went around the table, Vinay made a visible demonstration of checking their names off the list of confidentiality agreements he had received back from Thompson. Of course, he knew there was no way they could be sure that these people were actually who they said they were or even worked for the departments they claimed, but that did not really matter. What mattered was that they make Thompson think it mattered.

Thompson welcomed them all and introduced the three representatives of MAI to those assembled, then requested MAI to proceed with their presentation. Dan spoke for about an hour on the technical structure and capabilities of AIS⁶, carefully avoiding any proprietary information of particular importance, while demonstrating that MAI staff had the technical expertise to know what they were doing. The Government evidently did too. Judging from their questions, at least three officials in the room appeared to be specialists in expert systems and artificial intelligence. Another two specialized in scenario formulation and strategic planning. All five bombarded Dan with questions. At crucial points where he was far more knowledgeable than anyone else in the room, Dan feigned ignorance and said that only his own technical specialists could provide further details. The officials seemed pleased that they could demonstrate their superior knowledge in MAI's field of expertise.

Then Ray presented two case studies to demonstrate the complexity, range and depth of issues AIS⁶ was capable of handling. The first case was a strategy to achieve Global Food Security within three to five years. It provided a solution to endemic famine in Africa as well as global emergency food aid during natural calamities and man-made emergencies. More importantly, it proposed measures that would enhance the incomes of more than one billion farmers in developing countries around the world—including six out of ten people in sub-Saharan Africa—and could reduce global poverty by seventy percent in three to five years. At the same time, this approach would reduce budgetary pressures in economically advanced nations by more than hundred billion dollars annually.

The presentation included charts and tables of historical data, future projections, application of differential calculus, sample algorithms, factor analysis of three-thousand independent variables, time variance analysis, error analysis, multilevel and multivariate computations and other tools. Ray knew that little of this would make much sense to his audience, but it was important to demonstrate that AIS⁶ was based on higher level mathematics, not just higher levels of imagination. To illustrate the power of AIS⁶, he showed a few slides revealing subtle relationships between factors: a ten percent rise in farm prices in developing countries correlated with a twenty percent drop in violent crime in rural China and a twenty-seven percent drop in terrorist incidents in Northern Africa. A twenty percent increase in farm productivity in India—India had the scope to double or triple productivity on many crops, so twenty percent was a very modest figure—correlated with a three percent growth in GDP, creation of fifteen million additional jobs in the economy, and—most interesting of all—creation of two hundred thousand jobs in America as a result of increased export orders to India. Finally he presented a slide showing the strong positive correlation between agricultural price subsidies in the USA and the size of political contributions to incumbent officials in Washington, a relationship everyone understood but AIS⁶ was the first to actually measure.

Ray's introductory remarks sparked the interest or curiosity of at least half the people in the room, but when he presented AIS⁶'s actual recommendations, their eyes glazed over and he observed expressions of impatience or annoyance on most of their faces. It was not difficult to guess why. AIS⁶ recommended exactly what international experts had been saying for years, which every US administration had rejected because of political pressure from the farm belt. The three key recommendations were simple and straightforward. "First, AIS⁶ calls for elimination of all agricultural subsidies in economically advanced countries. Today we have a competitive food security system that results in wasteful overproduction, unremunerative prices and unsustainable subsidies. This measure will not only save fifteen to thirty billion dollars for American taxpayers annually; it will also raise market prices of key food exports by developing nations by an average of thirty-five percent, ensuring a higher price to farmers in those countries. Second," Ray continued, "raise farm productivity in developing nations by transfer of advanced technologies from the

West. AIS⁶ projected that this measure alone would double food production and triple net farm incomes in developing countries, virtually eradicating rural poverty around the world. Organization holds the key to global food security. The present, unorganized functioning of global agriculture, like the present global approach to military security, engenders insecurity and generates new threats by the very act of trying to eliminate existing ones. Therefore, third and finally, establish a World Food Corporation to buy up surplus food stocks wherever they were generated and market them in food deficit areas at minimum price, rather than the maximum prices that typically prevail during food shortages. A cooperative organization for food security needs to be put in place at all levels—local, national and international. Such a mechanism can eliminate the huge overproduction of food crops within and between countries that result in collapsing market prices, farmer bankruptcies and huge subsidies. The need for maintaining costly national buffer stocks can be minimized through creation of an international buffer stock and food security system. The huge waste of food due to poor storage and handling—estimated at more than twenty percent of agricultural GDP in developing countries—can also be eliminated. An international food organization would provide accurate, up-to-the-minute information on supply and demand for food worldwide together with a fool proof system for rapid transfer of resources wherever and whenever they are required.”

When Ray had completed the case, an economist from USDA asked him how he proposed to deal with the farm lobby in the USA. Ray first reminded him that the recommendations were those of AIS⁶ and did not represent MAI’s views. What AIS⁶ recommended was rational and good for the country, but he agreed that finding a way to implement it politically would require courage and sincerity. Ray pointed out that less than two percent of the US work force was engaged in agriculture and that three-quarters of all subsidies went to the top ten percent of recipients, most of whom have an average annual income of more than two hundred fifty thousand dollars and several of which were Fortune 500 companies. Ray said he doubted that a policy change would cause much hardship to either the economy or the American people. He pointed out AIS⁶’s estimation that raising the incomes of seven hundred million farm families in developing countries would add an average of 2.3 percentage points to America’s growth rate over the next decade, even after adjusting for any fall in agricultural incomes. Clearly it was a win-win for everyone—everyone except the politicians in the farm states. Ray then came to his concluding remark on the first case. “I would like to emphasize the close linkage between global food security and the overall security of the American people. In today’s world, violence, hunger, unemployment, disease and pollution know no boundaries. Last year the US spent seventeen billion dollars on farm subsidies, but just two million dollars to store food overseas close to areas suffering from food shortages or famine. Unemployment begets hunger and hunger begets violence that can spill over and touch the lives of people anywhere. Of the 104 new conflicts that have broken out around the world since the end of the Cold War, most are concentrated in regions heavily dependent on agriculture. Very few have occurred in food-secure environments, but their consequences threaten security throughout the world. No one can be fully secure unless and until everyone has obtained a modicum of security, both physically and psychologically. AIS⁶ has formulated an approach that brings enormous benefits to the American people and to the rest of the world.”

Thompson seemed eager to get on with the next case study. Obviously solving the problem of hunger and poverty worldwide was not high on his list of priorities. Ray paused and looked around the room for questions. Several officials were glancing at their watches. A few were filling their mugs with fresh coffee.

The Director of the Bureau of Policy Planning asked in what way the structure and methodology of AIS⁶ differed from that of other systems used to analyze statistics, project trends and formulate recommendations. Ray nodded to acknowledge the relevance of the question and replied, “The main difference is that AIS⁶ does not base its conclusions on statistical analysis. It bases them on principles. It utilizes statistical data to document facts and support its recommendations, not to determine how it arrives at its conclusions.”

Another planning analyst interrupted Ray at this point and exclaimed in a provocative tone, “That is simply impossible! Economics does not currently possess any set of widely accepted principles that are capable of arriving at such sweeping conclusions as you have just presented.”

“That may well be true,” Ray replied, “but that is the basis of AIS⁶. If you question the validity of its conclusions, I would ask you to study the results it has achieved in other cases. I believe they speak for themselves.”

“But what then is the source and origin of these so-called principles,” the analyst replied.

“I am afraid we are not prepared to disclose the inner workings of AIS⁶ at this point. But I do encourage you to analyze our previous work and judge its value on the basis of results achieved.”

Seeing that there were no more raised hands, Ray resumed his presentation. “Our second case addresses the proliferation of nuclear weapons to rogue states such as North Korea and Iran. AIS⁶ has analyzed the problem and generated a prognosis score of 9.5, which means it estimates a 95 percent probability of total and permanent solution to the problem if its recommendations are implemented.” There was pin drop silence in the room. He had everyone’s full attention.

Once again he presented dozens of slides with formulas, data and analysis to demonstrate that AIS⁶’s prognosis and recommendations were based on historical fact, impartial rationality, mathematical logic, and sophisticated analytic tools, uncolored by in-built assumptions, personal preferences or wishful thinking. “Those of you concerned with this issue are totally versed in the history and complexity of this issue, so I will come straight to the diagnosis, prognosis and recommendations. Again, I wish to remind you that the views expressed are those of AIS⁶, not our company or its employees.” Vinay could not suppress a smile at that remark. He knew that what Ray was going to say would be totally unacceptable to their audience. The key was to pretend that they did not know it, and that everything Ray said made perfectly good commonsense. In fact, it did make good sense, but directly flew in the face of the present administration’s nuclear policy doctrine. “First, the diagnosis. According to AIS⁶ the root cause of the problem is the failure of the five original nuclear weapon states, the P-5, to fulfill the conditions stipulated in Article VI of the Nuclear Non-Proliferation Treaty. As you are aware, the NPT prohibits all non-weapon states from acquiring nuclear weapons in return for a commitment by the P-5 under Article VI. The P-5 were unable to fulfill their commitment during the Cold War, but conditions are now favorable for total and complete elimination of all stockpiles of nuclear weapons in the world.” Ray heard an impatient rustling of papers and sliding of chairs. People were getting edgy and annoyed.

“Now for the prognosis. According to AIS⁶, unless the P-5 agrees to a time-bound plan for total nuclear disarmament as stipulated in Article VI, by the World Court in its 1995 advisory judgment and by the resolution signed by the USA and other states in 2000, we should expect the continued proliferation of weapons technology in the coming decade. In addition to the P-5, Israel, India, Pakistan and North Korea, AIS⁶ anticipates a minimum of five and possibly as many as a dozen new nuclear weapon states by 2015, just nine years from today. AIS⁶ rates as less than five percent the chances of preventing the spread of nuclear weapons by means of military force, political pressure or economic sanctions.” Ray hurried on to the recommendations without pausing for questions. “Finally, the recommendations. AIS concludes that current US policy is reinforcing and accelerating the proliferation of weapons and that nothing short of a complete reversal of US policy can save the American people from a rapid deterioration in security. It goes further to point out that due to our overwhelming supremacy in conventional armaments, we are the one country in the world that has most to fear and least to gain by the continued existence of nuclear weapons. AIS⁶ has generated a list of twenty specific time-bound steps for solving the problem.” Out of the corner of his eye, Ray saw Thompson raising his hand and trying to catch his attention. He could feel the tension in the room and knew he would be stopped any moment. He suddenly turned to Thompson and said, “Mr. Thompson, might I suggest that we distribute written copies of these recommendations in order to leave more time for questions and discussion,”—knowing fully well that no discussion was at all likely. Thompson nodded his consent and smiled bear-like through his teeth. “Therefore, I will conclude with just two more important observations of AIS⁶.” Even the bear’s smile disappeared when he realized Ray was not finished yet.

“First, AIS⁶ has done a detailed analysis of the global security system which I am sure will be particularly interesting to military strategists as a means to drastically reduce threats to US security.” He had managed to gain their attention again. “Today the world lives with a competitive security system, wherein each nation is largely responsible for its own defense and the very act of strengthening its capacity for defense increases the real or perceived threats and insecurity of other nations. The stronger our potential enemies become, the more we must arm ourselves in anticipation.” Ray noticed several people agreeing. He did not mention the obvious fact that the more the US enhanced its military capabilities, the less secure other nations felt and the more they were urged to strengthen their militaries too. “Now consider the alternative, a global cooperative security system in which each nation agrees to eschew resort to military force, all nations consent to lower their levels of militarization to an absolutely minimum level, and at the same time they agree to cooperate to secure the safety of any member nation against invasion by a rogue state. Add one final element, and the system is complete. Membership in this organization can be restricted to those with democratically-elected governments. Let all members of the cooperative security system agree to contribute their forces to a World Peace Army whose sole purpose would be the protection of its members against any threat of aggression or actual aggression by other states. AIS⁶ is proposing is nothing short of a global version of NATO open to all democratic states. The UN is the logical organization to play that role, but it must be a democratic UN in which no country can exercise a veto power on the will of the world community as the P5 are currently able to do. According to AIS⁶ a global cooperative security system would bring down US military spending from five hundred seventy billion to hundred billion dollars and world military

spending from one trillion dollars to less than two hundred billion dollars. It would radically enhance our security and reduce the likelihood of war between nations. Investment of these savings in the civilian economy would virtually double the growth rate of global GDP and halve global unemployment.”

Thompson abruptly stood up, thanked Ray for his presentation and said that due to the shortage of time, they needed to immediately move on to the next topic on their agenda. Ray nodded his agreement and said, “I am sorry, Mr. Thompson, if I have exceeded the time allowed for this presentation, but I wanted to ensure that you and your colleagues got a clear picture of the depth and range of AIS’s capabilities. Therefore, due to the shortage of time, I would like to present only one more recommendation to enhance global security.” Without pausing to see if Thompson agreed, he continued. “Democracy is the greatest safeguard of world peace and security. Unfortunately today our international institutions are a relic left over from the Second World War and the Cold War. They are highly undemocratic. In order to elevate both US and global security to the highest possible level in the shortest possible time, the very first and most vital step is for the USA and the other four permanent members of the UN Security Council to give up the veto power, so that the UN can be transformed into a truly democratic and representative world government. Thank you.”

Virtually every government official was murmuring, shaking his head, chuckling to himself or making a side-wise comment to the person next to him. Most of them appeared annoyed and eager to end the meeting. Vinay and Dan sat impassively, but Ray could see from the expression in their eyes that they seemed pleased.

As the officials filed out of the room, Thompson walked over to Dan and said he would like to continue their discussion in the privacy of his own office.

57. Debate of Light and Darkness

Thompson walked briskly down the hall to his office without glancing at them or speaking a word. Dan observed that he was annoyed, but could not tell whether the man had guessed their strategy. This time Thompson seated himself behind his massive rosewood desk, rather than at the small conference table where they had met previously. Perhaps he wanted to look more official and imposing this time.

Thompson's words were polite and even amicable, but his tone was one of omnipotent finality, as if he were dispensing justice with ultimate authority rather than conducting negotiations. "Gentlemen, thank you again for coming back at such short notice and making your presentation. It is clear to me and my colleagues that AIS⁶ is still in the prototype stage and it will take many years for the government to develop it as a useful policy instrument. Nevertheless, my superiors have instructed me to negotiate for purchase, and therefore I will do so in good faith. I certainly do not mean to underestimate the time, effort and expense you have invested in developing this tool. I assure you will take all of that into account in arriving at a final price. Depending on further information which you provide in response to our questions, the final offer price will fall within the range of forty to sixty million dollars."

Vinay indicated his intention to negotiate on behalf of MAI. Smiling politely he responded, "Mr. Secretary, we will be happy to provide all the information which your office requires. I am confident that when your staff examines our recent performance and current business potential in detail, they will discover their error and recognize that MAI is worth several times more than their original estimate. It is true that our revenues were a mere twenty four million dollars for the first six months of 2006, but we project that they may cross hundred to hundred fifty million dollars for the year. We anticipate a net income for 2006 at least ten to fifteen million dollars. As no doubt you are aware, a company like ours would be valued at a minimum of ten to fifteen times its annual earnings."

Thompson smiled awkwardly in return. He had hoped that an offer of \$60 million would be more than enough to tempt them into a deal, even though from the beginning he had been prepared to go as high as \$100 million, if necessary. Now it appeared that either MAI was performing better than he had been told or their future expectations were grossly inflated. There would be time enough for his team of auditors and lawyers to arrive at reasonable numbers. He did not intend to get bogged down in price negotiations with a bunch of techies.

But Vinay had not finished what he wanted to say. "I would like to add that the contracts now under negotiation and leads to new clients we are presently working on indicate that our growth over the next two years will be in the mid to high double digits. That means MAI could very well be a five hundred million dollar company or perhaps even a billion dollar company by the end of 2007. As I am sure you are aware, in the case of fast-growing companies like MAI, valuation is heavily weighted in favor of future earnings."

Thompson was beginning to lose his patience. It now appeared that these people had come to Washington actually hoping to sell their tiny business to Uncle Sam for a billion dollars or more. No wonder they had complied so readily with his request for a quick follow-up meeting. No wonder they had so willingly displayed AIS⁶ capabilities. They had to be fools to think that anyone in the room would accept the validity of the recommendations AIS⁶ had made. If they really wanted a higher price, they would have done better by keeping quiet. It did not matter to him what they told the other officials. He knew the value of AIS⁶, but after their presentation it would be more difficult for him to justify a higher price tag, if he could not negotiate them down to a reasonable level. These people seemed annoyingly naïve and foolish at the same time. He recalled to mind a proverb that even Jesus ran away in despair from the stupid man. It was getting very difficult for him to retain his patience and politeness.

He had to do something to make them more reasonable. So he altered his message accordingly. "Gentlemen, I did not want to unnecessarily alarm you, but it is my responsibility to make the situation clear. I am afraid that whether you find the government's price acceptable or not, you will not get more than the range I have indicated. It took a great effort on my part to argue in favor of such a large amount and there are those in my own department who frankly consider it a waste of money. In addition, I am afraid that your presentation this morning has only made my job more difficult. You may not be aware of it, but many of the officials in the room regarded AIS⁶ conclusions and recommendations as either erroneous or impractical. I might add that this only confirms the view of the distinguished academics whom you met during our last discussion." Thompson pronounced this verdict in a solemn, officious tone to add emphasis and then looked at each of them in turn to weigh its impact. They actually appeared surprised to learn that their presentation had been a total disaster. He was dealing with mere children.

"Then, of course, the Government is always free not to buy it," Vinay replied, as if he were very confident of getting a better price elsewhere.

Like a consummate artist Thompson painted a picture of the world for his guests, with words for paint and his tongue for a brush - the world as he saw it, or rather as he wanted them to perceive it. It was an image in the impressionist style, but inverse. Each brush stroke denoted a point of darkness that absorbed the light around it and sapped it of life. They could recognize every form, but all were cast in tenuous shadows. Nothing was as it had been or as it seemed. Even the man's smile radiated gloom, as if proclaiming it the natural state of things. "That's just the problem. The US Government has concluded that AIS⁶ is a potential security risk. The Government has an obligation to make sure that does not happen. There is simply no way that we can allow your technology to fall into the hands of foreign governments, splinter groups or even the general public. It is simply too dangerous. It is clear that your product is still rudimentary, but it has potential. But this kind of power must be controlled by those who are responsible and have the good of the people in mind. We cannot risk it getting into the wrong hands. I have received clear instructions that AIS must be removed from the public domain and I have been authorized to do so in the fastest and fairest manner possible. That is why I offered to purchase it. But as I hinted to you during our last meeting, if we do not come to a negotiated arrangement very quickly, I am afraid the alternative will not be to your liking at all. A mere signature of the Secretary will render your software and your company unmarketable. The Director of Intelligence has already drawn up a memo proposing a total ban on sales of the software without government license."

There was a cold, intractable logic to his words and all his computations arrived at the same result. Dan had no idea whether the words were actually true, but he knew that the man's motive for speaking to them was false. His instincts told him that if he accepted these threats as real and believed in them, MAI was lost; so he decided to simply ignore them. He replied immediately, as if he had not heard Thompson's overt threat or did not consider it worthy of reflection. "I am confused. First we were informed that the Government is willing to pay sixty million dollars for AIS⁶. Then you tell us that the State Department officials are convinced our software is valueless. Now we learn that the government is ready to impose a strict licensing regime."

Thompson smiled again and nodded, "Dan, that is exactly the situation. Perhaps this is your first experience dealing with the government. The inner workings of government are filled with such anomalies, because we have to reconcile opposing viewpoints and interests. The fact is that one way or another, for one reason or another, it is better that you come to a settlement as quickly as possible."

In response, Dan asked rhetorically, "Whatever happened to the ideals on which America was founded—our fundamental freedoms and due process of law?"

"That's all fine on paper, Dan, but even freedom has its limits. How do you expect us to protect your freedoms if we let everyone do anything they like? The Government preserves your freedom by restricting your right to do wrong. No one has a right to unlimited freedom. Individual freedom has to be matched by responsibility, conformity to the wishes of the collective and sacrifice for the greater good."

"Try selling that message to our founding fathers," Dan replied, "America was founded by rugged individuals seeking to escape the arbitrary exercise of power and conformity to the rigid and oppressive economic, social, and religious structures of Europe. Why do you think our forefathers came to this country in the first place?"

"I admire idealism as much as the next person, Dan, as long as you don't get carried away by it. Whatever our founding fathers had in mind, today the situation is radically different from when they framed the Declaration of Independence. Today America is the leader of the whole world and we have a responsibility to maintain that position for the sake of the whole world. We lead because we are the strongest, richest, most powerful nation on earth. If we sacrifice that leverage out of foolish sentimentalism, where do you think we will end up?"

Dan retorted, "Just how long do you think we can retain our position if we stray from the original principles on which this country was founded and which made America great? History is replete with examples of countries that became leaders of the world and then disappeared into oblivion. Who remembers Greece today? Or Rome, for that matter, except in the movies? Or even Britain, which ruled the greatest empire the world had ever seen just a century ago? If America is the leader of the world today, it is because the rest of the world follows us and wants to emulate our example. And why do they follow? Because here the individual is respected more than in any other country. America is founded on faith in the potential of the individual. People flock here today as they did in past centuries to realize that potential. If we lose that, then you can be sure America will not be leader for long. Just as America supplanted Europe, which had a thousand year head start, and Europe supplanted Greece, some other country will come along to give new life to the ideal which we have renounced."

Thompson smiled broadly and chuckled to himself. Now he was on familiar territory where he knew how to navigate. All this talk of artificial intelligence, expert systems and price negotiations was Greek to him, but he understood the language of diplomacy and the realities of power politics as well as anyone. “You gentleman may be well-versed in technology, but it is evident that your political education has been overlooked. The simple fact is that the world is ruled by power. Don’t be deceived by all the talk of internationalism and global governance. If America relaxes its strength, the vacuum created would soon be filled by a plethora of countries vying for world domination. You seem to forget that we fought two horrendous world wars during the past hundred years and then a forty year Cold War. We would be still fighting that one, if we had not defeated and dismantled the Soviet Union by our superior power. They were finally forced to see it was hopeless and give up the fight. Do you seriously believe that the US Government or any other government would follow the type of advice you presented this morning? The world is not governed by ideals and even the US Government is forced to be pragmatic. After all, we live in a democracy and are accountable to the people. Unfortunately, the electorate is far more interested in lower taxes and greater benefits than it is in curing the ills of the world. Just because AIS⁶ comes up with idealistic solutions to the world’s problems, don’t delude yourselves into believing for a moment that anyone is going to implement them. If you have labored all these years hoping to change the world, I am afraid you have been pursuing a vain illusion. Idealism is good for the soul and reassuring to the mind, but fatal as public policy. It has no place in the real world. It was Gorbachev’s idealism that destroyed the USSR.”

A sickly feeling began to gnaw at Dan’s gut as he realized how far power had corrupted idealism in his own government. The problem in America was not too much freedom for the people, but rather too much freedom for politicians and special interest groups to exercise arbitrary power in the name of the people. It did not come as a surprise, but the firsthand experience was depressing. Ray resented Thompson’s condescending remark and could not resist joining the debate. “The balance of power doctrine may have been fine for the fifteenth century Italian city-states, or for David Hume’s eighteenth century Europe; but if the two world wars have taught us anything, it is that this doctrine is archaic and obsolete. The Europeans who developed that doctrine and started all those wars learned their lesson and have given it up. It is extremely disconcerting to hear it cited as current policy in Washington. War among the nations of Europe has become unthinkable for the first time in recorded history, precisely because they have abandoned the idea of balance of power and are in the process of integrating themselves politically, economically and militarily within a supranational, democratic framework. As for the USSR, it is ludicrous to claim that we defeated the USSR in the Cold War. No matter how deficient their system, it could have persisted for decades longer had it wanted to, just the way monarchy persists in England centuries after it has become otiose. The USSR was dismantled from within by a courageous leader, not by threats from Washington.”

Thompson was nearing the limits of what he would tolerate in these people. They were as stubborn and arrogant as they were foolish. He decided to try just one more time to inject some realism into the discussion. “The fact of the matter is, gentlemen, that today America is under threat, and all your idealism is in danger of being undermined by resurgent forces of fundamentalism that are on the rise everywhere and will stop at nothing to destroy what we stand for. Have you forgotten September 11, already? Do you think this was or is the only threat we face? Do you know how many times each day, week and month your government acts to prevent a recurrence or an even worse tragedy? We are at war against terrorism, gentlemen. Every inch of freedom we give them, they use to attack us. During war, freedom has to be curtailed for the common good.”

Dan saw that Ray was still anxious to respond. He knew that Ray was in his element when the battle was about ideas and that he grew stronger by mental confrontation. Ray’s strength was a valuable asset that he was eager to foster. “You are right, Mr. Secretary,” Ray replied, “America is under threat, but it is a threat that comes from within. Fundamentalism is on the rise right here in America. The rising fundamentalism we see in the world around us is only a mirror image and reflection of the abandonment by Americans of faith in this nation’s founding principles. America is the leader and what is the example we are setting for the rest of the world? Narrow-minded intolerance, self-righteous assertion that God is on our side, unvarnished selfishness, unmitigated arrogance. That is the real danger. How can you fight a war on terrorism with nuclear arsenals and anti-ballistic missile systems? You can only fight it by demonstrating to the world an alternative model that is tolerant and inclusive. You are right. The end of the Cold War did create a power vacuum. But rather than building a stronger system of global governance to fill it, we have rushed to grab all the spoils and all the power to ourselves. The world we see around us is a direct reflection and result of our own actions. We have no one to blame but ourselves.”

Thompson saw that there was no way to reason with these people and no end to their appetite for frivolous debate. He decided to end the discussion and the negotiation with one final argument. Artfully entangling truth and falsehood in an inextricable web, he replied, “All you are saying is nothing but vanity of

idealism predicated on a fundamental error. You are under the illusion that humanity is somehow different today than it was in the past. That is simply nonsense. Nothing essential has changed. All our progress is scientific and technological, but essentially people remain as primitive and barbaric as they were at the time of the Old Testament, the Viking raiders and Attila the Hun. Human nature respects only one thing and that is strength. It submits to only one thing and that is power. It has only one urge and that is self-aggrandizement. Our dress may change, our manners may change, but essentially we remain what we were five thousand years ago.” Then coming back to the subject at hand, “Are you really sure you want to give the power of AIS⁶ into the hands of unregenerate human nature? People are as selfish and irrational now as they ever were. If AIS⁶ is half as powerful as you say it is, it will only make them even more dangerous to themselves and other people. We simply cannot and will not let that happen.”

Dan indicated by a nod that he would respond. “Science and technology are merely one expression of the evolution of human consciousness. Humanity today has infinitely greater peace, security, freedom, and prosperity than at any previous time in history. These are all a result of evolving human consciousness and, particularly, the emergence of individualism. If that is not obvious, then this is not the time or place to argue about it. We did not accept your invitation to debate about self-evident truths. Humanity’s problem today is not too much knowledge; it is too much partial, incomplete, one-sided knowledge - which is another term for ignorance. All the problems the world faces today arise from a partial perspective. Proclaiming partial truths as the whole truth is the source of the prevailing irrationality you speak of. Partial knowledge can hurt. Complete knowledge cannot hurt, regardless of who acquires it. Our objective is not to increase partial knowledge, it is to complete it and make it whole. That is what we are attempting in AIS⁶. It is too early to say whether we will succeed or fail, but we will continue the attempt, regardless of what the US Government decides. While we appreciate your position, we cannot simply buckle under pressure from the government in deference to the need for political expediency. When the four of us gave up lucrative careers and invested our life’s savings to start this company five and half years ago, we did so with the goal of creating an intelligent system for accomplishment that would help solve the world’s problems and make it a better place. We are not there yet, but we do believe we are on the right track. And it is simply impossible for us to consider stopping at this point.”

Thompson decided enough was enough. He had been very foolish to deal with these people on an equal footing. He had to reclaim the dominant position. “Your misplaced idealism is commendable, Dan. You have painted a glorious image of America, but one that will never withstand scrutiny. You seem to have mistaken your eighth grade government textbook for truth. Whatever the ideals espoused by the founding fathers, self-interest has always been and always will be the touchstone for government policy. No government, past or future, is going to listen to your ideas about complete knowledge or perfect solutions. Rugged individualism was fine for taming the American frontier, but it would only cause chaos as a basis for national policy. The goal of public service is to preserve the stability of the status quo. It’s late and I cannot spend any more time on this matter. I have tried to reason with you and see it is futile. This is no longer a question of your personal preference. What you want to do, or are willing to do is irrelevant. I am here to tell you what is going to happen one way or the other. If you decide to fight it, the only result will be to make things much harder on yourself. If you refuse to cooperate, the government will exercise its power to confiscate AIS⁶, prosecute the executives of MAI for consorting with known terrorist organizations, and expel Vinay Menon and Anya Serova from the country without offering you a single dollar of compensation.” Thompson closely examined their faces to determine the impact of his threats. Dan remained impassive. Vinay appeared angry. Ray’s eyes were twitching and his mouth was stretched thinly across his face with jaws clenched. “I am authorized to do all these things before you even have time to return to California.”

Dan concluded that this was the moment to play their only real card. “If your objective is to prevent AIS⁶ from falling into what you consider to be the wrong hands, I am afraid it will not be accomplished by any of these methods.”

“And why exactly do you think that?” Thompson inquired.

Dan spoke softly so that Thompson had to strain to clearly hear his words. “AIS⁶ has already been exported. We have already set up several independent operating companies overseas. Even if you expropriate MAI and shut it down, there is no way you can prevent the distribution of this product internationally. In fact, you will only accelerate it.”

Tension pervading the room, Thompson interrupted him with a shout. “You’re bluffing! We know all about your plans to open offices in Bangalore and Moscow, but you only started working on it this week. We can put a stop to all your activities within twenty-four hours.”

Dan replied, still more softly. "I am afraid you are misinformed. We have already completed the formalities and transferred the product overseas. In case you still don't believe me, you will find a fragment of AIS⁶'s code stored on your own State Department server. We placed it there yesterday so that we could prove to you that what I am saying is true. I can provide you with the exact directory location if you wish to verify."

Thompson made an angry grimace then controlled himself. This whole affair was completely out of hand. His original plan had been simple and practical. If he could get the government to spend a few million to acquire the software, then he would have access to all that he needed. Based on a slightly distorted interpretation of MAI's involvement with the IRA, he had his office prepare a brief setting forth the threat posed by AIS. He had made a convincing case to the Deputy Secretary and received authorization for the purchase with little scrutiny. Now things were getting more and more complicated. He knew that he could not carry through on all of his threats, but he had expected that he would never have to. These people were exasperating. Temptation had not worked. Threats had failed. He had to try another tactic.

With the deceptiveness of a consummate magician, Thompson's threatening expression vanished and was replaced by an endearing smile. The dark threatening canvas was erased. With speed and unmatched dexterity, he painted a scintillating vision with a fairy tale ending. He offered a solution to all their problems, unparalleled opportunities, fame, power, idealism and untold wealth. Anyone who had just entered the room might have thought he was bestowing gifts on willing recipients, instead of weaving an illusory fantasy to conceal his weakness, desperation and deceit. The peremptory tone of authority was gone. In a honey-tongued, southern drawl exuding warmth, goodwill and empathy, he said, "Gentlemen, we are all committed to the same goal. We all want the same thing—a better, safer world. I think I may have another solution to this problem which serves everyone's interests. We will set up a joint venture to develop AIS⁶ and subsequent versions. You can continue to run MAI in your current positions. The only thing that will change is that you will join hands with another company, secretly owned by the government, and will refer all strategic decisions to the board of the holding company. You will remain in the public limelight and continue to make key decisions on product development. That way you can continue to work on the fulfillment of your mission and take the credit which you rightly deserve. In addition, through the joint venture we will be able to provide all the financial support needed to develop future versions of AIS and access to a huge market for AIS within the Federal Government and among state governments. Working in concert, MAI will be worth billions and become an instrument for American ideals to serve all humanity."

"And what about the export controls?" Vinay inquired in a non-committal tone.

"I am sure through a joint monitoring system we can ensure that the software does not fall into the wrong hands, thereby enabling you to continue marketing it overseas."

"And what involvement would this other company have in the actual development and management of MAI?" Dan asked.

Thompson replied reassuringly. "Our people would work hand and hand with you as partners. As you no doubt observed, some of the top AI experts in the world work for the Pentagon and the State Department. All that expertise would be available to support development of AIS. The compromises you will make are a small price for the greater service you will perform."

Dan saw through the illusion and the magician's tricks. He threw aside the colorful veil of deceit and looked straight at the darkness it concealed. Shaking his head, he calmly replied, "I am afraid we could not possibly permit outsiders to interfere either with the development of AIS⁶ or our business decisions. MAI is our company and it will remain that way as long as it exists."

Thompson had never given up a fight in his life and he had won almost all the battles in which he had engaged, either by shrewdness, deceit or sheer power. He saw one last desperate chance to turn truth into falsehood. Smiling again and nodded his head, he said, "Now I understand. Your patriotic and idealistic pronouncements of self-righteous idealism are nothing but a disguise for the blind pursuit of your own self-interests. You are as interested in money and power as all those you condemn, as attached to power and self-interest. All this is only pretense to negotiate for a higher price."

Seeing that Thompson twisted and misinterpreted everything he said according to his own perverse logic, Dan decided to concede the point. How did it matter to him what Thompson believed? He replied in a jovial tone, "You have a keen insight into human nature."

Then Vinay interjected, "Yes, as keen as Duryodhana's insights about Yudhishtira. So there is no point in our trying to deny our true motives."

Thompson seemed relieved that finally Dan had given way, but was puzzled by Vinay's comment. "I don't believe I know either of those gentlemen. Indians?" Then smiling broadly, he added, "In any case, if money is what you want, say so. If Uncle Sam cannot meet the price, I have friends who can."

Thompson's last comment convinced Dan that Thompson had some kind of personal agenda that was driving him, something that went beyond the interests of the government. It made him question how much real authority Thompson actually possessed to back up his threats. In any case, he was so convinced that they could not possibly deal with a man of Thompson's character, he decided to risk calling his bluff.

"We have nothing more to discuss. We have heard and said enough," Dan said, as he turned to his partners and signaled his intention of leaving.

Seeing him begin to rise out of his chair, Thompson suddenly found he could not longer contain his anger. The quiet, calm but uncompromising manner in which Dan replied to his every tactic was absolutely infuriating. Without thinking, he pounded his fist on the desk twice, so loudly that Ray was physically startled. Thompson stared at the three of them with open aggression and blurted out before he had time to even consider the wisdom of his words. "I know about *The Book*." He had not intended to speak about it, but now that he had he wanted to see its effect. "You probably have it with you right now," he added glancing down at Dan's briefcase.

It was Dan's turn to be startled. He lowered himself back into his seat. Involuntarily, his right hand went down to reach for the briefcase at his feet. He immediately regretted the movement. He could not think of any way to respond. How could Thompson know about *The Book*? Even if he did know, what was his purpose in mentioning it now? Was he actually planning to seize it right now? Suddenly the words he had read in *The Book* a few nights before came sailing through his mind.

Formidable forces of Darkness, evil and violence are active in the Ignorance.

Those words exactly described the dreadful feeling of suffocation that seemed to fill the room at that moment. It was no longer a business or diplomatic negotiation. There was something more sinister going on, which Dan did not understand. But at the moment, the only thing he wanted to do was to leave the room as quickly as possible. He paused to consider for a few seconds, then without speaking another word, he stood up, turned to his partners and walked out the door with Vinay and Ray at each side.

Thompson's whole body was trembling with anger as they closed the door behind them. He banged the table three more times till his fist ached with pain. He had handled some tough negotiations in his time, but none that had ever disturbed him as much as this. Perhaps it was the humiliating thought that these nobodies from California could fail to recognize his power and authority. He would show them. With his teeth clenched to prevent him from shouting, he picked up the phone and dialed an extension.

The three of them walked out of the building without saying a word and around the corner to the parking lot a few blocks away. Ray walked unsteadily as though his legs might give way at any moment. Vinay felt ripples of tension coursing through his nerves. Dan's mind was silenced by the magnitude of the calamity he suddenly saw looming before them. Earlier he had understood that Thompson posed a real threat. Now he experienced it for the first time as a living reality. In spite of his attempts to appear firm and unshakeable, the very notion of direct confrontation with the US Government was profoundly disconcerting.

They got into the car they had rented at the airport the night before. Vinay had offered to drive, but he did not immediately start the car. His nerves were wrought with the tension of the meeting. He felt short of breath and his head was pounding. They sat in silence for a few minutes. Vinay tried to force himself to breathe deeply. Ray sat silent and motionless. Finally, Vinay started the engine and headed for the exit of the multi-story parking structure. As he pulled out of the parking lot onto the road, he faced an eight foot high fence down the middle of the street. Obviously some construction was underway. He could not see anything on the other side of the fence, but he had to cross a busy lane of traffic in order to reach it. He waited patiently for an opening, gunned the gas pedal, sped across the lane, passed through an opening in the fence, and made a sharp right turn on the other side of the partition. At that exact moment a large truck came zooming down the lane at 30 mph. It was only twenty feet away and rapidly closing on a collision course. Vinay shouted and slammed on the brakes. The narrow road left absolutely no way to turn out of the path of the on-coming truck. They heard a loud blasting horn. The truck bore down, obviously trying but unable to slow. It screeched, swerved and finally stopped. The two vehicles were facing each other head on and just eighteen inches apart! The driver jumped out of the bus shouting in Italian. They all sat silent and motionless. Vinay mumbled something about the fact that he had not known it was a one-way street. The driver kicked the front right tire of their car, pounded his fist on the hood, and shouted again about calling the police. Traffic was backing up and people were blowing their horns due to the traffic jam. Reluctantly

the driver got back in his truck. Vinay managed to back up and maneuver the car so they could drive off in the right direction to the airport.

None of them spoke a word until they were inside the terminal. Vinay was feeling happy just to be alive, but terribly guilty for endangering the lives of his partners. As Dan reviewed the accident over and over in his mind, he suddenly recalled that as they were pulling into the parking lot that morning, the thought had occurred to him that the tall wooden partition was a dangerous obstruction. He had actually thought about the possibility of an accident at that very spot five hours earlier! Finally, Vinay broke the silence. “I have never been so scared or so grateful in my entire life—all within the space of thirty seconds!” Dan mumbled something which neither Vinay nor Ray understood, “That’s the second time in six months.”

58. Counter Measures

They had arrived at Dulles nearly three hours before their scheduled 6:00 pm United non-stop flight back to SFO, but Vinay noticed that there was also a 4:00 pm flight which would get them home two hours earlier. When he suggested they try for it, Dan hesitated. "I prefer we use these two hours to digest what happened today and take some immediate precautions. Let's go to the Admiral Club and find a quiet corner where we can talk."

Ray's nerves had still not fully recovered from the near fatal collision and he was feeling more and more exhausted by the minute, but Dan was insistent. After they sat down, Dan summarized his understanding of what had transpired. "Thompson is desperate to stop us any way he can. I find it hard to believe that he is just following someone's orders. He is an experienced diplomat who knows how to handle himself under pressure. He would never have become so emotional if he were merely carrying out instructions. If what he said had been true, he could have had us detained on the spot. Why should he spend three hours trying to persuade us to cooperate, if he had the authority to carry through with his threats? He has some agenda which he is not revealing. I have no idea what it is, but that man is dangerous. That accident was no accident."

Vinay interrupted, "Do you mean to say Thompson planned that accident, Dan? That's a crazy idea. I don't believe that for a second. I couldn't see around the partition and I thought it was a two-way street, that's all there is to it. We are lucky to be alive right now, but I don't think we can blame the incident on the US Government. That's just paranoia."

"No, Vinay, I did not mean that Thompson was plotting our death," Dan explained. "But I do think the intensity of his anger is connected with the accident, just as the shooting outside Ray's hotel room in Chicago was connected with his brother's jealousy. The accident is an indication of just how serious our predicament is. We may have saved the software from confiscation, but there is no telling what these people may do next. We are a mosquito bite for the Government. We can be crushed out of existence simply by keeping things on hold for a while. This thing is not over, of that I am sure. Our clever strategy to outwit Thompson today and the narrow escape from the accident does not mean we are free and clear. Ray did a terrific job presenting AIS⁶'s capabilities. Everything you said was sensible, practical and should be done, but we knew before we went in that telling the Government what is right or rational is no way to win their appreciation. You have to tell them what they want to hear, you have to tell them they are right and show them how they can make their chosen policies a success. We threw all that in their face. It was an effective diversionary tactic, but it only buys us a little time. And my feeling is, we have less time than we thought. We have to act immediately, now, even before we get on the plane tonight."

"What can we possibly do now at 4:00 pm sitting in the airport, which will make any difference to how things work out? Vinay asked.

"Ray, you said Bill Gershwin is close to the ACLU didn't you? What about with the press? What about with the UN?"

"I don't know about the UN, but I know he has lots of contacts with press people at the state and national level. Why do you ask?" Ray replied.

"We need some publicity and we need it quick," Dan continued. "I have an idea that may provide us with some protection. Suppose we issue a press release today regarding our meeting with the US Government? We announce that we were invited to a high level meeting with representatives of State, Defense and other agencies to make a presentation of AIS⁶'s capabilities to promote global peace and food security. We make it sound like we are seeking publicity for our product and our programs. Maybe Bill can set up a phone interview with someone from Associated Press or New York Times or something."

"How do you expect that to help, Dan?" Vinay asked.

"It looks like Thompson wants to keep this thing as quiet as possible," Dan replied. "The US Government wants to snap us up before anyone important really takes note of AIS⁶. If he thinks we are going to act, he may rush into something. If he finds out we have already acted and it is too late to keep the cat in the bag, he may go back to the drawing board or to his superiors for further instruction. But I have another idea which I think we should implement at the same time. We should issue another press release tomorrow morning regarding the capabilities of AIS⁶ to solve global problems and announce that we are offering free advisory services to the UN to model solutions to critical issues such as food security, peace, employment and terrorism. Our presentation to the US Government will lend credibility to that offer. Maybe Bill can even set up a meeting at the UN tomorrow, so we can make the offer in person to a high level official at the UN."

“I like the approach,” Vinay interjected. “At least it certainly cannot hurt. Publicity is always welcome for our product. I hadn’t thought of offering free service to the UN, but it’s a good gesture that may gain us access to other clients. I’m in favor.”

Ray nodded consent and dialed Bill on his mobile. Fortunately Bill was available. Ray explained their situation so that Bill would understand the reason for urgency. Bill said he would make a few calls to press contacts and get back to them in an hour. He also said he knew enough people at the UN to ensure that they could meet someone on short notice and get the UN press service to cover the meeting. They sat back and waited. Then suddenly Ray recalled a question he had wanted to ask Vinay. “What was that comment you made about Durdana and Yudita or whatever their names were? I couldn’t figure out what you were talking about.”

Vinay laughed heartily. “Its Duryodhana and Yudhishtira. They are characters from the Indian epic *Mahabharata*. Duryodhana was the head of the Kaurava clan. He was the evil elder son of a blind king in North India about three thousand years ago. He plotted to succeed his father even though the first right to the throne belonged to his cousin Yudhishtira. Duryodhana employed every mean trick and false method he could think of, including several assassination attempts against Yudhishtira and his four younger brothers, who were known as the Pandavas. When nothing else worked, he appealed to Yudhishtira’s sense of righteousness. Yudhishtira was a noble, idealistic man who had never told a lie in his life nor done wrong to anyone. Duryodhana told Yudhishtira that it would be wrong for him to claim the throne, because it would only lead to internecine warfare between cousins and uncles of the same family. He appealed to Yudhishtira in the name of *dharma*, righteousness, when all along he himself was employing every unrighteous method he could find to attain his end. Self-righteousness—not patriotism—is the last resort of scoundrels. I’d love to see Thompson’s face when he figures out that I was calling him a scoundrel!”

“By that time, I hope we are all safely back in California,” Dan said. “Thompson interpreted everything we said to his advantage and according to his own value system, so I saw no point in professing motives he did not believe anyone really cared about. While I was listening to him, I recalled something I had read in the *Archives* to the effect that people who lie only believe what other people tell them when those people lie as well. So I thought, Thompson will accept what I tell him only when I tell him what he himself believes. So I confessed that we are after money and left it at that.”

Twenty minutes later Bill called to say that the UN Secretary General was traveling overseas, but he was able to set up a meeting the next afternoon with Kofi Annan’s Under Secretary for Disarmament Affairs and another with the Administrator of the UNDP. He asked an ACLU friend to schedule a press conference right after the meetings. Fifteen minutes later he called back to say he was sure of coverage by AP and was still working on Reuters, LA Times and NY Times. He asked Ray to email a draft press statement, so he could review it and pass it on. Vinay had been working on a statement from the moment Ray dialed Bill the first time. They had just finished reviewing it and he sent it off while Ray was still on the phone. Dan called the office and asked Lauren to reserve hotel rooms near the UN in New York and to reroute their air tickets to NY tonight and back to SFO tomorrow night.

They caught a 6:00 pm shuttle to La Guardia and got into the hotel around 8 pm. A few minutes later, Ray received a call from Redford of the NYT regarding a story. He wanted details on the meeting earlier today—whom they had met, who had called the meeting, what they had presented, how the government officials had responded. When he heard Thompson’s name, his interest increased markedly. He described Thompson as a very tough nut who handled important issues related to national security. Jake told Ray that he would try to get something into the morning edition. He also wanted to meet them for breakfast to learn more about what they are doing and why the US Government was so interested in it.

The following morning, Vinay Googled for news reports and found at least a dozen versions of their press release on the web. The NYT print edition carried a four inch column on the international pages describing MAI, AIS⁶, their research on global food security and nuclear weapons, and their meeting with representatives of the US Government. Some of the other coverage was more extensive, some more brief. Reuters’ story had been picked up by European newspapers. The International Herald Tribune, London Times, The Washington Post, Christian Monitor, and the Atlanta Journal all carried web versions of the news.

Redford came for breakfast. He seemed to be intrigued by the drama and Thompson’s implied threats. He said that higher officials must be behind his actions, otherwise Thompson would not have pressed as overtly and illegally as he had. He asked for a copy of yesterday’s presentation. He then asked a whole series of questions regarding potential applications of AIS⁶. He wanted to know what the software was intended for and what it was capable of doing. He seemed particularly interested in possible military applications and possible applications for espionage. Ray explained that other than their work with the Irish

Committee and a case study on nuclear weapons, their main focus had thus far been on commercial and economic applications.

The two meetings and the press conference at the UN went off smoothly. Ray went through the same presentations on food security and nuclear weapons for the Under Secretary and a small group of top economists and disarmament specialists who worked for the Secretary General. He also included a third case study on enhancing world trade, which he had not presented in Washington. The Under Secretary expressed gratitude for MAI's offer to provide free consulting services to the UN and promised to formalize the arrangement as soon as he could consult with the Secretary General. Ray covered the same ground on food and trade with the UNDP Administrator and three of his staff members. They had been lucky to reach the UN on a quiet day when neither the General Assembly nor the Security Council were in session, so the press corps had time to cover their meetings and interview the three of them for their in-house news service. They flew home that night exhausted, but feeling slightly more confident and secure than they had twenty-four hours earlier.

59. Elements of Truth

Arriving back home after midnight on Friday, Dan slept fitfully, awoke at around 10 am on Saturday morning and lay in bed for another half hour trying to clear his mind. Vinay had suggested they all drive up to Lake Tahoe for the weekend to get away from work, but Dan had doubted very much that they would have succeeded if they had all been together. Ray had declined in order to spend time with Rana and the girls. Dan just wanted some time to himself. Dan encouraged them to extend the trip by an extra day and enjoy themselves before school began again for Katia. I'm becoming a recluse, he thought and laughed to himself. As a boy he grew up in a large family always surrounded by people day and night. At first, being alone was something of a novelty in his life. Gradually it was becoming a necessity. He was glad that Vinay had agreed to brief Anya on their two long days on the East Coast. He wasn't anxious to relive it again in words. He had to move on. Ray had held up well during the trip, performing a crucial role, but Dan knew it had been at great cost.

The previous two days had been so demanding, there had been no time to even to think of anything beyond the moment. But throughout all their strategy sessions, interviews, and official meetings, one recurring thought kept pressing on Dan's mind and distracting him from the work at hand. Thompson had said he knew about *The Book*. How on earth was that possible? Why was he even interested in it? Could Thompson possibly understand how important *The Book* was to him personally and to their work at MAI? Why did he speak about it in such a threatening tone, unless he was threatening to take it away? Dan could not answer any of these questions and for some reason that disturbed him as much as the threat of export controls.

There was another 'why' question that kept pulling on his consciousness, like a child with fever vying for parental attention. Why was all this happening to them? What had they done to attract the might of the US Government upon their heads? Thompson had given them the obvious, superficial answers, the practical explanations, but even if Dan had believed what Thompson told them, it still left something unexplained. Over the past four and a half years, *The Book* had made him understand that nothing happens by chance. There is a meaning to every event, a deeper significance and causality. He had only recently begun to see the connections and possible explanations for some of the major events in his own life, such as his meeting with his partners, the failure of MAIS, and the discovery of *The Book*. He still did not understand the laws that governed these connections or the process that made them happen, but he had gotten into the habit of asking himself the question whenever something out of the ordinary occurred, such as Lauren's sudden visit to his apartment that Saturday which helped him discover that *The Book* was disappearing.

Occasionally he saw, or rather felt, a direct connection between an external event and something he had been thinking or feeling at the time. Just the previous week Jack Pedder, CEO of one of MAI's subcontractors, had sent Dan an email which he had found arrogant and offensive, implying that MAI was acting arrogantly in its relationship with Pedder's company. Pedder's tone was provocative and infuriating. Dan's first impulse had been to send a forceful and angry denial. Then he caught himself and paused to reflect on the situation. He reflected on some of the comments he had heard from MAI staff about their dealings with subcontractors and realized that they had been arrogant. When he examined his own mind, he saw that he harbored similar thoughts as well. He may not have expressed them to anyone, but they were there all the same. He saw that Pedder had not been wrong, even though he had expressed it in an arrogant manner. He decided to remove the arrogant from his own mind. A moment later Pedder called him and apologized for his rude message.

Dan had seen many connections like that one and occasionally found a way to apply the knowledge to deal with a problem. But this situation was different. The Government had unilaterally taken initiative to approach them and there had been no prior opportunity for errors or omissions on their part. So why had it come and why now? From *The Book*, Dan recalled reading about two situations in which life acts unilaterally: to restore the balance of life forces when they are disturbed for any reason or to present the external conditions required to fulfill an inner intention. The development of paper currency, democracy, the steam engine, mass production, the automobile, the atom bomb and the Internet were changes that had radically altered the balance of forces and raised strong opposition from established forces. Dan could not see how MAI had disturbed the balance of forces unless it was by the development of AIS⁶. Was there something about AIS⁶ that made it far more powerful than earlier versions? The main difference was that AIS⁶ was able to encompass a much wider situation than the previous versions. AIS¹⁻³ had focused on individual decisions. AIS⁴⁻⁵ had focused on organizations. AIS⁶ was the first to embrace the whole social context. Perhaps they had not yet come to fully recognize the significance of this evolution or its potential

power. But how could the government be reacting to the hypothetical power of a product that had not even been released yet?

There was another possible explanation offered by *The Book*. It said that our inner aspirations attract the external conditions needed for their fulfillment. It was very difficult for him to imagine that MAI could benefit in any manner by what Thompson proposed. Rather his proposal threatened the very existence of MAI. There was nothing positive about Thompson's proposal at all, at least not from their point of view. It forced them to look for ways to defend themselves, to spread out so they could not be trapped in one place, to publicize their activities and forge alliances, so they could not be made to disappear without others hearing about it. Should he regard Thompson's initiative as a negative external response that created conditions essential for MAI'S progress? Could life be providing help in the form of opposition? When he asked the question in that manner, the answer seemed obvious. He knew of countless instances in which people and organizations had made extraordinary progress when confronted by serious challenges. Hadn't that been what happened to Chrysler and Lempe? Hadn't that been the story of America's rise to world leadership? Hadn't Morris Goodman, the so-called miracle man, become a world famous accomplishment guru after being totally paralyzed in a plane crash, unable to breathe, speak or move any muscles except his eyelids? After the doctors explained that he had crushed three cervical vertebrae and would not survive more than a week, Goodman had announced by the blinking of his eyes that he intended to breathe, talk and walk on his own within a year and he had done it. No one would say that the accident had brought him good fortune, but he had certainly converted total tragedy into a phenomenal personal achievement and established himself as an expert on human accomplishment. Countless people facing extreme hardship had been inspired by his individual achievement.

Dan laughed to himself at the notion that all this trouble had come to them in response to their own aspiration and as a spur to higher accomplishment. He imagined how Ray would respond to that explanation. Somehow the balance of forces argument was less controversial, but the idea that Thompson represented an opportunity made a deep impression on Dan's mind.

Still feeling exhausted, he finally rolled out of bed, made himself an extra strong cup of coffee and went to his computer to check for email. Thinking himself immune to surprises after the intensity of the past few days, he was startled out of that complacency by a message from Lauren. It said that there had been a call from the assistant to Edgar Howard, Deputy Assistant Secretary of State. His assistant said that Howard would like to meet with them at their earliest convenience. Dan sat back in his chair and tried to imagine the significance of that message, but came up blank. Howard was Thompson's boss. Did this mean that they were going to be pressurized even more? If the government was so determined to stop them, why didn't they just act? Why were they using persuasion where they could use force? Why propose another meeting at MAI's convenience instead of simply specifying a date? There were already too many unanswered questions in Dan's mind.

Dan had no energy for either thought or a fresh confrontation at the moment. He was glad he had the weekend to regain his energy before returning Howard's call. He went over to his chair, picked up *The Book* from the side table and opened it out of habit without even thinking that he was too tired for serious reading. He glanced down at the page and read a single sentence which immediately caught his attention.

Ignorance is partial knowledge. There is an element of Truth buried even in the most extreme error and falsehood.

Taken as a statement of philosophy, the idea was simple enough. But what, Dan thought, if the author meant that the statement were literally true? Taken to the extreme, it implied that even the most slanderous accusation of one's enemy contained an element of truth. It would mean that however much Thompson had tried to frighten or mislead them, there must have been a grain of truth in what he said to them. Dan found the very idea revolting and he immediately put down the book and closed his eyes. Almost against his will, his mind started reviewing Thompson's statements to see if it could discover anything true in what he had said to them. It was true that they had unknowingly consorted with the IRA, he could not deny it. It was true that everyday politics was founded on cynical pragmatism and self-interest, rather than idealism. They knew that without needing to hear it from Thompson, but that was not the whole truth of politics as Thompson tried to assert. It was also true that no one in the government would take seriously their recommendations for eradicating agricultural subsidies and abolishing nuclear weapons. They had known it before Ray made his presentation. They had been counting on it to discourage the government. Thompson had cited that fact as indicative of a fundamental flaw in AIS⁶. Now Dan began to consider whether Thompson had been right.

Perhaps there was a fatal flaw in AIS⁶ which led it to propose idealistic solutions that looked good on paper but could not be or would not be implemented. What was the use of proposing a

solution if you knew in advance that no politician would be in a position to act on it, even if they agreed with the idea? For a recommendation to be fully true, it was not enough to know that carrying it out would generate desirable results. It was also necessary to know how to carry it out under conditions in which it would be vigorously opposed. Thompson had been right, after all. AIS⁶ was flawed. Their formula for accomplishment remained incomplete. AIS⁶ was capable of arriving at what should be done, but not necessarily how it could be done. Wasn't that the real problem with global warming? Scientists had demonstrated that human activity was causing climate change and identified alternative technologies that could mitigate or reverse the effect. Yet, in spite of countless resolutions and international conferences, the world's political leaders had thus far been unable to arrive at an acceptable method to address the problem. They knew what needed to be done, but not how to make it happen.

Lauren had called to make sure he got the message about Howard and asked him about their meeting with Thompson. When she found out he was alone for the whole weekend, she invited him over for dinner Saturday night. Dan enjoyed being with Lauren. Apart from being lovely to look at, she was bright, cheerful, full of life and warmth. Her laughter was enchanting. He hesitated because he sensed he could get lost in her and forget everything else, perhaps even *The Book*. He wasn't ready for that just now. The *Illusionist*, a romantic mystery centered around the career of a brilliant magician, played by Edward Norton, was premiering in San Francisco, so they finally decided on dinner at Fisherman's Wharf followed by the theater. "I could use a few good magic tricks, just now," Dan remarked.

60. Mercury Rising

Three things are necessary for any accomplishment: First, you must have the required positive capacity for creation. Second, you must refuse to express your own negative capacity for destruction. Negativism is universal. It cancels luck. Third, you must have the capacity to compensate for your earlier errors, omissions, false steps and wrong actions, which is known as reversing one's karma.

Messages III

On Monday morning Dan asked Lauren to call Howard's office, tell Howard's secretary that he was in meetings all day, inquire regarding the purpose of Howard's call, and, if necessary, schedule a call with him later in the week. An hour later Lauren came into Dan's office to tell him that Howard had requested a personal meeting on the twenty-fourth to see if they could iron out any misunderstanding that had occurred. Dan asked Lauren to confirm the meeting.

Dan was late coming in on Tuesday. He had spent three hours studying *The Book* in search of the missing link for AIS⁶. He was fascinated by a passage describing the complementary role of two opposing conditions in human accomplishment. On the one hand, *The Book* stressed the importance of balance, equilibrium and harmony as the foundations for all progress. On the other, it emphasized the need for continuously breaking old patterns, disrupting the existing equilibrium, confronting and absorbing the impact of new challenges. Undisturbed harmony quickly degenerated into complacency and stagnation. Excessive conflict prevented higher patterns of organization from establishing themselves. Continuous progress depended on disruptions of the existing equilibrium sufficient to release energy for progress, while at the same time maintaining sufficient balance to preserve the underlying foundations. Too much pressure might crack the foundation and lead to a revolution or revolt that destroyed the fabric. Too little might lead to a static and ossified condition in which the external form of organization dominated over the inner essence and suffocated it in structure and dead formalism. Dan sensed that this passage offered a valuable clue to the dynamics of accomplishment and puzzled over how they might incorporate it in their model.

The moment he walked into the office, he could feel a tension in the air that hit him in the gut like a mild shock wave. He found Anya, Ray and Vinay in the conference room immersed in a heated discussion. Anya was walking back and forth talking and gesturing loudly. She was furious about something and just barely keeping her temper under control. "If Tony disregards my instruction once more, he has got to leave. Ray, you had no right giving him permission to countermand my instructions just because I was away yesterday."

Ray tried to explain himself. "Anya, I never would have agreed had I known you had instructed otherwise. Tony never mentioned it."

"He was just playing you off of me so he could take over," Anya replied excitedly. "From the beginning he has never accepted my authority. He looks down on me as some silly Russian girl who he can out-manuever. If he had his way, I'd be working under him. I won't tolerate it anymore!" Neither Vinay nor Ray thought it wise to remind Anya that she was the only one of the four partners who approved of hiring Tony Preston back after he had betrayed their confidence with Jake Talbott.

They all turned when Dan enter the room. He looked to Anya for an explanation, mainly just to take the pressure off Ray who seemed to be wilting under the heat of her temper. "What's the matter?" she replied to his question. "Just because Vinay and I were away yesterday, Tony created an artificial emergency and took Ray's permission to alter my instructions on the structure of the Auku report. I'd been working on that for days with Allen. I am just asking Ray not to countermand my decisions without consulting me."

Dan turned to Ray as he tried to explain, "Tony told me he had a call from Auku saying they wanted immediate changes in the report. He said he could not reach Anya, Vinay or Allen for instructions, so he asked if he could go ahead with the changes."

"What was the urgency?" Anya interjected. "So we were a few days late. Don't you see he is just playing you?" Ray looked over at Vinay, who nodded in agreement with what Anya had said.

Ray was getting more uncomfortable and defensive by the moment. "If you guys were so concerned about how things are done, you could have been here on time yesterday or at least kept your phones on. Someone had to take a decision. I did. Next time I will let you take the responsibility. You may be tired of Tony, but I'm tired of being accused when I did what I thought was right."

Vinay jumped in again. "I agree with Anya. Tony has gone too far. He needs to be put in his place and sent packing."

"Packing!" Ray exclaimed. "You want to send away a one hundred fifty thousand dollar senior project manager, one of our most experienced and knowledgeable people, because you find he has a mind of his own? This is not India or Moscow. Like the rest of us, Tony wants some freedom and respect. You have to cut him some slack." Then glancing at Anya but without making eye contact, "Just remember, I was not in favor of rehiring Tony in the first place."

Dan felt things were getting out of hand and tried to divert their attention. "Edgar Howard, Deputy Assistant Secretary of State, wants to meet us," he said and then paused for effect. He waited for his words to sink in and catch their attention. "I agreed to a meeting on the twenty-fourth." He knew what question they would ask next, but he waited for someone to ask it, just to maintain the diversion. When both Ray and Vinay voiced it simultaneously, Dan replied, "Lauren says he wants to see if he can iron out any misunderstanding that had occurred during our last meeting with Thompson. Howard is stepping in to deal with us directly for some reason." As the implications of Dan's message sank in, it left them all speechless. They looked to Dan for further explanation. He wanted their attention and now he had it. "The last thing we can afford just now is dissension. We have got pressures coming at us from all directions. We are all tired, stressed and overworked. We need to concentrate on the big picture."

Just then, Ray's mobile phone rang. He looked down at it and said. "It's Eric Green calling. He is at Lempe for the major six month presentation and review. I better take this." Dan nodded and Ray left the room.

Anya saw the opening to continue. "Dan, I want to sack Tony. In know you guys warned me not to take him back and I concede I made a mistake, but that doesn't mean I have to live with it forever. While you were in Washington, he came into my office and spoke about a serious defect in AIS⁶. You should have heard his tone of voice. The clear implication was that I had made a mistake and he even claimed he had warned me about it, which is totally false. Tony is too assertive. Vinay agrees with me, don't you?" Vinay hesitated. "Well, don't you? You yourself said he was arrogant and pushy."

"He is arrogant and pushy, Anya" Vinay replied. "But can we really afford to lose him just now? Let me speak to Tony and put him in his place."

"Everyone is too hot and too tired for a rational conversation," Dan advised him. "I suggest you postpone this discussion for another occasion. If you speak to Tony in that tone of voice, he'll resign on the spot. If he wants to resign, that's fine, but we need not provoke it at this crucial juncture."

Just then Ray walked back in the room, looking even more disturbed than when he left. "What's going on, Ray?" he asked.

"Eric said the presentation to Lempe was a disaster. In the middle of the meeting, Lempe's wife called him and started shouting on the phone. Eric could hear her voice from across the conference table. Lempe sat there helpless telling her he would call her back, but she persisted. He tried to hang up four or five times. She insisted. Finally, he was so embarrassed he hung up the phone. Eric says Michael hardly heard a word that was spoken after that. Eric had been planning to ask for the first payment from Lempe at the end of the meeting, but the atmosphere was so sour, he could not do it. Now Michael's leaving for a three week vacation and we do not have clearance for implementation of the next set of recommendations. That means we will lose a minimum of a month, maybe more. Worse still, toward the end of the meeting, Michael started questioning and reversing his position on decisions he had agreed to in June. Eric said the other members of his team looked confused and discouraged. The energy level came way down. Oh, and Edna saw me in the hall and caught hold of me as soon as I disconnected with Eric. She says she is receiving numerous complaints and hearing lots of grumbling from staff that we did not give half yearly pay raises as we did last year. It seems a lot of people were expecting it. She even heard a rumor that Jean had another offer and was considering whether to accept it."

Anya gasped. "Jean! He's one of our oldest project managers and our best. Losing him would really hurt. Don't they realize we don't have the cash? Didn't she tell them we are still waiting to get paid by customers? None of us have taken a pay hike. Can't people wait till things really improve?"

Dan glanced over at Ray and noticed he looked quite pale and was rocking back and forth, shifting his weight from one foot to the other. When Dan asked if he was alright, he said he has a severe pain in the stomach and thought he must have eaten something that did not agree with his system. He said he was thinking of taking the rest of the day off and would see them in the morning, then he walked out without waiting for a response.

Anya looked at Dan apologetically, “I didn’t mean to upset him. I know how sensitive he is. I don’t know why, but I just felt so irritated this morning, I could not help expressing it.”

Just then Randy came in. “Dan, I need some advice how to reply to Compusys in Bangalore. We owe them six hundred thousand dollars on prior contracts and I still don’t have the cash to pay them.” Dan took the occasion to end the meeting by saying he’d discuss it with Randy in his office. After Randy left, he called in Jean on some excuse to see if he would say anything about his job. Jean responded matter-of-factly to Dan’s questions and never raised the issue. Dan did not feel this was the time to stir up any further problems.

It was still early in the day, but he was already feeling totally drained and found it hard to concentrate. He could feel a physical sensation of disturbance, a combination of extreme sensitivity and irritation, occupying his nerves and making it impossible to concentrate. Apart from a long list of unanswered questions and looming threats to MAI, there was nothing bothering him personally, yet every fiber of his being was disturbed. He sensed the same vibration pervading the atmosphere of the whole company and wondered where it came from and why it was there. He knew he would not accomplish anything in this condition, so he told Lauren he’d be out the rest of the day and went home early. Dan called Ray in the evening. Rana said he was in bed with stomach pain and had taken something to make him sleep. Dan heard tension in her voice also. He asked her to let him know when Ray woke up, but he did not hear back from Rana the rest of the day.

As he climbed into bed that night, Dan had a faint recollection of reading about harmony and balance that morning, but looking back it seemed like it had been ages ago. He tried to recall the old proverb about troubles coming in bunches. Then he wondered if it was just a proverb or was it another law of life. The past ten days after their second meeting with Thompson had been a string of disturbances and apparently it was not over yet. If only he could discover and understand their source, it would give him greater strength to handle them.

He lay on the bed and realized he was tired but not sleepy. There was too much energy coursing through his nerves. He seemed to be surrounded by choices at every moment, small, apparently insignificant choices that actually had profound significance. Was it like that for everyone? It must be. A vibration of anger urged Anya to act precipitately and fire Tony Preston. What were the implications of that decision? How would it affect Jean’s response to an alternative job offer? How would it impact the attitude of employees about the lack of bonuses? What impact might it have on relations with Auku or Lempe? Each moment he was faced with a choice—to speak or remain silent, to react or remain calm, to assert or remain passive, to act or to wait. Did it matter whether he returned Howard’s call immediately or two days later? Did it matter whether he called Howard’s secretary or asked Lauren to do it in his place? If he had not entered the room and defused the quarrel between Ray and Anya, what might have happened? Had he responded rightly when Lauren called and invited him to dinner, and he had shifted the venue from her place to a restaurant? Strands of his strenuous negotiation with Thompson the previous week kept coming back to mind. Words he had spoken or decided not to speak. Thompson had burst out in uncontrollable anger and declared his knowledge about *The Book* without intending to. How would that affect their future? Was it in any way connected with Howard’s direct intervention? With each passing month, life was becoming more intense. Each moment became more significant and demanding of full attention. Choices. Life was an infinite array of choices spreading out in all directions and offering alternative paths to alternative futures. Some paths led up, some down, some sustained the present, others reverted to the past or created something new. How was he to be sure he was making the right choice?

An incident about the founding of Israel came to his mind, which Ray had narrated to him from a book he was reading on the plane, *O Jerusalem*. The British had announced they were ending their occupation of Palestine within six months and setting up two states, one Jewish and one Palestinian in their place. Already fighting raged between the two peoples, but everyone knew that as soon as the British left, total warfare would break out. The surrounding Arab states were preparing to invade and wipe out the nascent state of Israel before it could be established. The Israelis were ready to fight, but their hand guns would be no match for the national armies of their neighbors. They needed tanks and heavy artillery. Kaplan, the unofficial treasurer of the nascent state, had just returned from an unsuccessful fund raising effort to America. American Jewry had told him that their largesse was running dry. They had hospitals and schools in America to support. He could not obtain commitments for more than five million dollars in donations during the coming months. David Ben Gurion knew they needed at least five times that amount for weapons. Without it, there would be no Israel. So he decided to fly to America immediately and make a direct appeal. A colleague, Golda Meir, daughter of a Ukrainian carpenter, insisted that Ben Gurion was needed in Palestine. She offered to go in his place. She got on the next plane with only the dress she was wearing and ten dollars in her purse. When she arrived in the USA, she learned of a national assembly of Jewish

organizations convened in Chicago. She called the organizers and told them she was coming and they would have to find a place for her on the agenda. She told the assembly that the entire survival of the Jewish race was at stake and she required twenty-five million dollars immediately. She raised \$1.5 million in a single night and before she left America she had commitments for fifty million dollars, ten times what Kaplan had obtained, twice what Ben Gurion said they required and three times the annual oil revenues of Saudi Arabia at the time. A carpenter's daughter had changed the fate of Israel.

Just recalling the incident swelled Dan's heart with a rich emotion. Golda's strength, courage and determination were inspiring. But he sensed something more to the story. It was a story of ultimate accomplishment, not only for Golda as an individual, but for a whole nation. It touched on a crucial question that remained unanswered in his mind—the precise relationship between the individual and the collective in human accomplishment. All great accomplishments were in essence accomplishments of all humanity, built on the foundation of cumulative achievements in the past, yet often he observed a single individual or a small group played a crucial role in bringing them to fruition. It had become fashionable to praise the outstanding individual and forget the collective that made him what he was. Bill Gates did not make the revolution in personal computing. The revolution made him. There would have been no revolution in France without Rousseau and Voltaire, but there would have been no Napoleon without the French Revolution. They created each other.

The precise relationship between the two—the individual and the collective—was a missing link in their formula and Golda's story contained a key. One person, totally determined, thoroughly motivated, identified with the wider interests of the entire society, rather than merely selfish, narrow interests, could make the difference between victory and defeat, high accomplishment and failure. In effect, her personality became a vehicle for the social aspiration and social energy to express itself in action. And this principle seemed to be true both positively and negatively. It was true of the coward and the traitor as well as the hero. The incident revealed the link between the decisions and actions of an individual, the initiative of an organization and the destiny of an entire society. It seemed to combine and integrate in some manner elements of the decision-making matrix, the power of organization, energy conversion and social integration. He wondered whether Golda had understood the process that governed her remarkable accomplishment. She had done it, but did she understand how?

Rising from bed, he turned on the light and reached for *The Book* on his night table. He flipped through the pages to a chapter entitled *The Individual* and read these lines.

The individual rises on the strength of endowments drawn from the collective. The collective fulfills itself through the differentiation of the individual.

Society fulfills itself through the uniqueness of its individual members. The individual fulfills itself by universalizing to identify with the whole society. Both give expression to something beyond either of them which is trying to manifest.

And what about them, he and his partners? To what extent were they products of their times and to what extent social creators? He did not flatter himself with delusions of his own uniqueness. He knew they were being carried on a wave by invisible hands. Suddenly overcome with the sleep that had evaded him, Dan lay his head back down on the pillow and slept undisturbed through the night.

61. Don Quixote

No man is simply good or simply bad; every man is a mixture of contraries often inextricably mixed up in a single feeling, a single action. All kinds of conflicting qualities, powers, values meet together and run into each other to make up our action, life, nature... We can only understand entirely if we get to some sense of the Absolute and look at its workings in all relativities—look not only at each by itself, but each in relation to all and to that which exceeds all and reconciles them all.

The Book

While Dan was driving to the office the next morning, Lauren called to give him some messages and casually mentioned that Ray was still not well and would not be coming to work. Ray and Rana lived in a lovely house on a terraced hill off of Grizzly Peak Boulevard about five miles north of the university, within a few miles of Dan's route from Kensington to MAI. On an impulse, he decided to drop in unannounced. When he rang the bell, Rana opened the door. She looked surprised and slightly uncomfortable. Dan's first thought was that perhaps Ray was more seriously ill than he had thought. A sharp pain of that type could have meant appendicitis, pancreatic malfunction, who knows. But when he asked if Ray was alright, she hastened to say he was feeling better and then with some awkwardness asked him to come in. Ray was sitting in the living room in a bathrobe. Another man was sitting with his back to the door, whom Dan did not recognize until he turned around to also face the new arrival. It was one of Ray's oldest friends, Bill Gershwin. When Bill looked up and saw Dan, a somewhat embarrassed expression came over his face, but he quickly replaced it with a smile. Then Ray stood up and invited Dan into the room.

Dan had met Bill several times in connection with the financing of MAI, but the meetings had always been brief and formal, so they never had an opportunity to get to know one another or forge a personal relationship. He knew from what Ray had told him that Bill was personally wealthy, the result of a substantial inheritance from his grandparents, and that he also operated a very successful legal practice, heavily oriented toward cases involving the defense of liberal idealism. That was what had brought him into close association with the ACLU and the UN. Bill was a short, rounded, half bald man in his mid forties with a ruddy complexion and a warm smile. Dan had liked him the very first time they met. As Bill stood up to greet him, Dan said "What wonderful timing! I have been wanting to meet you and thank you, Bill, for the tremendous support you have provided us whenever we called on you for assistance, and most especially last week at the UN. It may have been more important to us than you know." Ray's look of embarrassment faded as he saw how happy Dan was to find Bill at his home.

Bill smiled warmly and replied, "Dan, the pleasure is mine. Everything Ray has told me about you and MAI over the years has only enhanced my respect and admiration for your effort. As for last week, what I did was almost nothing—just a few phone calls. I have sensed for a long time that what you people are doing may be very important indeed. Ray was just relating to me the details of your remarkable encounter with Thompson. It only confirms that you are on to something important."

Ray asked both of them to sit down, called out to Rana to bring coffee for Dan, and excused himself for a few moments so he could take a shower. Bill said he was eager to talk with Dan and urged Ray to go. After an exchange of pleasantries, Bill asked, "I am curious, Dan, to hear your take on recent events." Dan narrated his own version of the previous weeks' events, amplifying on Ray's impressive performance at the first two meetings with Thompson, the academics and government officials. Bill was obviously pleased to hear how Ray had handled these challenging situations. Then he explained in detail about the tug-of-war that occurred in the privacy of Thompson's office, omitting only Thompson's reference to *The Book*. Bill was a sharp and interested listener, easy to talk to and quick to grasp the implicit issues. He asked several perceptive questions regarding Thompson's intentions, tone and the precise words he had used. When Dan came around to mentioning the call from Howard, Bill sat up and expressed his surprise.

"A call from the Deputy Secretary of State?" he replied in a questioning tone. "Now that is something. Howard would never have done that unless he was deeply unsatisfied with Thompson's conduct and keenly interested in MAI and AIS⁶. Surely you must have some idea about why they are so powerfully drawn to your work, don't you?"

"Frankly, I am confused, Bill. If I didn't know better, I would say that Thompson has some personal agenda. He was so passionate and involved in the negotiations. He did not conduct himself like the experienced diplomat that he is. And some of the things he knew about us, he could only have known by eavesdropping and close scrutiny of our activities over a prolonged period. I would have to guess he has planted an informer among our employees and possibly a thief."

“Well, such things are not that uncommon, Dan, but I must say it sounds a bit unusual for the Government to target a small software company with this level of scrutiny. Perhaps Thompson really believes you were consorting with terrorists as he claimed.”

“Perhaps, but I doubt it,” Dan replied. “It didn’t sound like a real accusation. When he said it, it sounded more like a ploy to shake our confidence, to shock us into submission. Besides, all the records of our interaction with the Irish Committee are documented and Thompson has seen them. But that does not explain why the Deputy Secretary of State would get involved. Government experts have virtually dismissed AIS⁶ as an unproven concept. Under the circumstances, it is very hard to explain Howard’s interest.”

“We live in paranoid times, Dan, and rarely have I seen a more paranoid group in Washington than the boys assembled at the present time. Oh, I don’t mean Condoleezza or Howard, they both seem level-headed and sensible enough, but that group in charge of intelligence and security at the White House and at Homeland Security are extreme. Who knows? Perhaps, State is under heavy pressure to tighten up on all possible sources of threat; though I must confess that even as I say it, it sounds like a long shot.”

Just then, Ray walked into the room, bathed, dressed and looking much better than before. He sat down and Bill explained how they had spent their time since he had left the room. A moment later, Rana came in carrying a tray with coffee and sweets she had brought back from Bangalore. Finding a lull in the conversation, she interjected, “Bill, now that you have these two together, try to talk some sense into them for me. Tell them that just because they think they are visionary entrepreneurs, they cannot afford to take on the US Government. Sometimes I think I married Don Quixote and I am his fair lady Dulcinea. Maybe Dan is his neighbor and co-conspirator, Sancho Panza. Then there are times when I think you are the Don, Dan; Ray is playing Sancho, Anya is the fair lady, Vinay is the Don’s horse, Rocinante, and I am the windmill turned dragon-lady trying to wake my husband from the magic spell cast upon him six years ago by three witches in Fort Lauderdale. Bill, tell me how I can break the spell and get back the man I married.”

Bill laughed awkwardly. Then Rana continued, “Did you tell Dan why you asked Bill to come today, Ray?” She looked Ray in the eyes and he replied with a silent ‘no’. “Well, since he has come just at this moment, I will tell him. Dan, I am asking Ray to get out of MAI while he can and I asked him to get some sound legal advice from Bill, who is the most rational man and the closest friend Ray knows. I have enough to do with two kids to raise. Ray promised a long ago that I would not have to work and raise kids at the same time. That promise went the way of many others. You guys have been in business for five years. I understand the first two years were tough. You didn’t really know what you were doing. But now you have AIS⁴ or AIS⁵ or whichever version you are on. You have some good clients, some cash flow, you are taking on new employees right and left, but nothing is coming home. We have less savings today than we did six years ago and far more expenses. Ray keeps telling me I can leave HP any time I feel like. How can I when my husband does not even bring home a regular salary some months? Its OK for you, Dan, you have no family to support, no obligations or commitments beyond your own ascetic life-style. Vinay’s younger, comes from a wealthy family which will support him even if he never works another day in his life, and he wastes everything he earns anyway. Anya’s got Katia to think of, but she doesn’t. She just keeps dreaming of utopia—a brilliant, bleary-eyed, mad Russian scientist who has bewitched the three of you—admit it, Dan—and is making you live out her illusory dream in the real world. I am not sure which of you is the greater dreamer. You all live in Fantasyland. That’s your right and your own business, but Ray is mine. Let him go, for his own good. Bill, tell him as a friend. Dan won’t. He needs Ray. Ray’s a genius, but like most geniuses his intelligence is narrowly specialized and outside that area he does not even know the time of day. Sometimes he reminds me of Sherlock Holmes and I’m his Dr. Watson. Once when Watson spoke to Holmes about the revolution of the planets around the sun, Holmes expressed surprise. He said he neither knew nor cared about it, because it had nothing to do with his profession of solving crimes. Well, Ray’s like that too. Outside of MAI, AI, algorithms, and saving the world from hunger and destruction, he knows nothing—except that he has an Indian wife prone to temper-tantrums and kids who long for his attention.”

The three men sat in quiet embarrassment until Rana stopped. The chain of disturbance was obviously not complete yet, Dan thought. Her outburst reminded him of a previous occasion when Rana’s objections had been almost enough to break up the company. It had been during those difficult months after they took the decision to trash MAIS. In retrospect he believed that had actually been her intention. She had been sharp not only with Ray, but with all of them. It came to the point where they avoided accepting invitations to Ray’s house. It made Dan question the notion of a submissive Indian wife. It seemed rather that roles were reversed here. It was Ray who took that part. She had gone so far as to imply that Vinay was lying and Anya was manipulating them all. None of her accusations felt true to Dan, but they had their impact on Ray. When Rana finished her diatribe, Ray said, “Rana, you’ve expressed your feelings with Bill and Dan, now give me a chance to talk with them man-to-man. It’s already 11 am. Why don’t you fix us a good South Indian meal for lunch?”

Rana got up and said, “Go fix your own lunch!” and then she stomped out of the room.

Bill and Dan said quietly waiting to see what Ray would say. After a few minutes in silence Dan rose to excuse myself. “I have work at the office. I think I will leave you two to continue your discussion. It was a pleasure meeting you, Bill.”

Dan began to rise, but Ray held him back. “No, stay, Dan. Don’t go. I probably should have invited you to join this meeting earlier. You are here and I’d like you to stay. I value your opinion. It’s Vinay and Anya that I am having difficulty talking and dealing with.” Ray went on to voice his own concerns. Most of them were a rehash of what Rana had said and clearly came from her, not him. But he did have a few of his own doubts. One pertained to the dangers of confrontation with Washington, which Dan shared in full measure. The second was the offer Thompson had made. “Dan, I didn’t tell Rana about his offer. If she knew he had offered us sixty or hundred million dollars and we had refused it, she would throw me out of the house this minute. I don’t say we need to sell out to the Government, but maybe we should find a buyer or at least a major investor so we can get some cash out of the company and not risk everything on one big, dangerous fling with Uncle Sam.”

Dan was about to remind Ray of the problems with venture capitalists and their kind. They had enough trouble with investors during the first round of financing. He was not willing to go that route again. But before he could speak, Bill started, “Ray, from what I have heard, I really do not think this is the time you should be thinking of selling. It sounds to me like you are on the verge of a huge breakthrough, Uncle Sam notwithstanding. I am confident we can find a way to protect MAI if we are careful. If you want to get some cash out of the company without sacrificing management control of the company, I am ready to buy whatever shares you have to offer and I am sure I can find some other investors as well. That’s speaking as a shrewd investor, which I flatter myself that I am. But, as a friend, my advice is not to sell a single share right now and I will tell Rana the same thing.”

Ray brightened and responded with a look of relief, “Bill, that’s a wonderful offer. That would enable me to relieve the financial pressure without cashing out at the moment when our dream begins to look like reality in the making.”

Then Dan said, “I’d like to add, Bill, that I would be extremely pleased to have you as a partner in MAI. I think you can make a real contribution. Apart from money, you possess a range of business experience which none of us can provide. If what Ray wants to sell is not sufficient to create real interest, I am willing to sell some shares and encourage Anya and Vinay to do so too.”

Bill seemed genuinely pleased by the offer. But Ray changed the subject. “Dan, money is not the only issue. That’s mainly Rana’s concern, not mine. But I do have another concern. I am finding it increasingly difficult to work with Anya and Vinay. They are both strong, outspoken personalities. It’s always been more difficult with them than with you. Now it’s worse. They are ganging up. I am sure you are aware they are seeing each other now. They are both impatient and even pushy. That’s not my way and I don’t like to fight battles every day at the office.”

Dan replied, “We have all been on edge lately. When you are under stress, you get ill and weary. When Anya is stressed, she gets irritable and suspicious. When Vinay is stressed, he does get a little pushy, I agree. When I am stressed, I tend to withdraw, to become detached and aloof from the work, drawn into myself, incommunicative. We are all different. This is the opposite side of our strong positive complementarity. I think we need to deal with and learn how to manage the negative as well as the positive side of our relationship. I am sure Bill’s presence can help. I’d like to make two suggestions. First, let us call a meeting of the partners on Saturday or Sunday and ask Bill to join us. I hope you are free and willing, Bill?” He nodded his assent. “Second, I have been struggling with the idea of who should go to Washington for the meeting with Howard next week. I had been thinking it may be better for me to go alone. You are too down. Vinay is too hot. Now I would like to suggest that Bill and I go for that meeting. We have plenty of time to prepare in advance and I think Bill brings just the kind of presence and expertise we need.”

Both Bill and Ray seemed pleasantly surprised. They liked both suggestions. Rana finally did manage to put together some lunch for them. Ray told her about the conclusions they had come to and it seemed to calm her down. By the end of the meal, she was far more cheerful and friendly.

62. Under Siege

Dan left Ray and Bill after lunch and drove to the office. Vinay and Anya were quietly at work and did not ask why he was late coming in. Vinay had more important things to talk about. He had spoken with Jean in the morning and found out that the rumor about the job offer was true. Jean had been approached by the US Government and had been offered double his present salary—three hundred thousand dollars. “The remarkable thing is he turned it down!” Then recalling something else he had been eager to report, “By the way, Eric called in to report that he was able to meet Michael Lempe before he left on vacation. Michael apologized for his distracted behavior the day before and promised to arrange an initial payment as soon as he returned from his holiday. I guess you could say that they are both good news, though I find the offer to Jean quite disturbing. If they have approached him, I wonder who else they are talking to?”

Dan briefly related the morning events to Vinay and Anya and shared his personal assessment of Bill. He had been thinking for some time that they need a reliable person with general business, managerial and financial capabilities to balance out the management team. He was not sure Bill would consider giving up a lucrative career for such a position when their own situation was still precarious, but meanwhile they could certainly make use of his expertise in a variety of ways. Dan was surprised to find them both quite willing to consider the possibility and eager to discuss it with Bill.

The following day, the four partners met with Bill at his office in Walnut Creek. They figured that was a safe location for private discussion, at least for the moment, and would give them a chance to see Bill in his own environment. Everyone was serious and subdued with no signs of the tension that had surfaced earlier in the week. But Dan knew it was just beneath the surface and therefore he suggested they address it head on. The others agreed that taking a lawyer with expertise in civil rights to the meeting with Howard was a good idea. They examined alternative strategies for the meeting and agreed on a game plan. Dan could see that Vinay and Anya both felt very comfortable with Bill and were willing to bring him in as a minority partner. He had already proven how valuable he could be at a crucial moment.

They also spent some time reviewing their roles at MAI. Vinay faulted Dan for giving people too much freedom and unsupervised discretion, being too self-absorbed in his own work and *The Book*. Bill listened without understanding what book Vinay was referring to. Vinay also said that just because money did not seem important to Dan was no reason to discount its importance to the company or the other partners. Ray voiced complaints about the confrontational attitude that had permeated discussions among the partners and the sense of suspicion that seemed to be undermining their confidence in and relations with staff. Anya repeated her accusation that they had taken decisions in Washington and New York without properly consulting her. Dan reminded them that their greatest strength was the complementarity and harmony between them, which arose from the fact that they were four very different people with different capacities and perspectives who shared a common aspiration. If for any reason they allowed that complementarity to degenerate into disagreements, conflicts and opposition, they would lose their most vital asset.

During the meeting they agreed on several things. They needed to work to improve relationships among the partners and between the four of them and key staff. They needed to also consider strategies to secure the allegiance of key people like Jean, something they had postponed for too long already. They needed to put in place tighter financial controls to address the concerns Randy had been raising about cash management. They had seen in the past that every time they applied AIS to their own business, it generated a very positive impact, so they decided to consult AIS⁶ for a new assessment of MAI. They also agreed to work out a proposal for sale of shares to Bill and to meet again in the near future to discuss his role in the company.

Finally, Dan expressed his conviction that no matter how much they modified AIS⁶, it would not be sufficient to address fundamental concerns. He explained that over the past four days he had spent time reviewing the theoretical framework for AIS⁶ and had come to the conclusion that Thompson, the academics and the other government officials had been right in faulting it, even if their motives had been to intentionally malign and disparage. He narrated Ray’s story about Golda Meir and explained the questions it had raised in his mind. “Regardless of the field, every human accomplishment seems to consist of three essential ingredients—the individual, the organization and the social collective. In AIS⁶ for the first time we have been able to incorporate all three, but we still do not know the process that governs their interactions. It is like having all the ingredients for a recipe without the instructions for how to mix, blend and process them. We know that decision is central, opinions define and limit the options and opportunities, attitudes generate the power, and organization constitutes the channel for effective execution and repetition. We know how energy is released by the individual and the organization, converted into force, power and results through direction, organization and skilled executive. We know also that the individual and the organization function

within a greater whole, the society, and thrive by a mutually beneficial symbiosis with the collective. But we still do not precisely understand the role of the individual and the organization in the evolution of the collective or the impact of that social evolution on its parts. Until we acquire that knowledge, AIS⁶ will be, at best, incomplete; at worst, incorrect.

Before adjourning the meeting, Bill made his first two concrete contributions to their future partnership. "I have a couple of suggestions to make. First, get some security! Your employees are being approached by the Government. Anya's hard drive was stolen along with confidential papers. Who knows what else they may have copied while they were there. You have to assume it was by Thompson's people as well. From all you have said, it seems pretty clear that they are bugging your phones and your email. Thompson seems to know everything you are saying and doing at MAI. You need a security expert to make your offices safe against both physical and electronic intrusion. Second, send an email canceling the meeting with Howard without any explanation." The four partners looked at him with wide-eyed amazement in search of an explanation. "His office will definitely call to find out why. When they do, tell them that MAI has suffered a major security breach and until you are able to plug it, your presence is required in Berkeley. Howard will understand exactly what you are saying. Since he seems eager to meet and obviously wants something from you, I hope it will provide him with an incentive to withdraw their surveillance from MAI." Dan liked the idea, so he called Lauren and dictated a message to Howard's office.

63. Testing the Waters

Later the same afternoon, Dan was sitting in his office at MAI talking with Bill, when he received a call on his mobile from Howard. After introducing himself politely, the Deputy Secretary expressed his regret that their meeting could not occur as scheduled and said he would like to reschedule as soon as possible. Howard's gesture and tone of voice were in striking contrast to the strident tone adopted by Thompson. Dan understood the significance of the gesture and knew he had to acknowledge it. The Deputy Secretary was in a position to command his appearance, whereas he chose instead to politely request it for a second time, this time personally. Howard had dispensed with all the formality and authority his position commanded to forge a personal relationship with Dan. Dan had to show he was willing to meet him half way.

Dan thanked Howard for the honor of his call and replied cordially. "I am sure you are unaware of it, Mr. Howard, but we just discovered that we have a major security breach at our offices, our calls and emails are being monitored by someone, some confidential files have been stolen and someone is trying to recruit some of our key project managers. Until I can resolve these issues, I may not be possible for me to travel. I assure you that I will get back to you as soon I am in a position to do so."

Howard listened politely, expressed his regret and said he hoped it could be resolved soon. When he hung up, Bill nodded and smiled. "He got the message. Now he knows that you know what they are up to. Their bugging MAI is useless once they know that you know about it. His trying to steal MAI people will backfire, if it makes you break off contact. Since he does not yet know whether you will cooperate, he cannot afford to antagonize you. I expect a call back soon telling you that both problems have been solved."

Five minutes had not elapsed since the call with Howard when Dan's phone rang again. It was Howard. "Mr. O'Hara, I made some inquiries regarding the two problems you are facing. I believe I have identified the source of the problems. You have my personal assurance that action is being taken to rectify them. My objective is to build a positive relationship with MAI. So you can consider your problems solved."

"That's wonderful," Dan responded. "Then if you would still like to meet this week, I will be happy to reschedule our appointment." Howard agreed and they rescheduled the meeting for late in the afternoon on the twenty-fifth. Dan looked over at Bill, filled with admiration for his analytic and predictive powers. It was evident to him that Bill possessed knowledge of life which he lacked, at least knowledge of how government officials think and act. "You were right, Bill. The tactic worked."

"Don't be so sure, Dan. Don't take Howard's words as facts. We do not know whether he will really lift the tap as he has promised. Until we are sure, you have to assume the tap remains in place."

"If Howard does not act after making a personal promise, it means we could never rely on anything he says. Then how can we deal with him or the Government at all?"

"By not believing what they say, until you are sure it is true. I have two suggestions. Tomorrow morning call one of your partners at the office and tell them the taps have been removed. Then also mention something that Howard will be keenly interested in but could have no way of knowing from other sources, something that is not true, but could be true. When we meet him the next day, let us see if he raises that subject. If he does, we can be pretty sure that he got it from the tap. Then you will understand just how far you can rely on his commitments. Second, I suggest that tomorrow morning you call each of your senior project managers in one-by-one and ask them whether they have been approached by Howard's people. If any of them admit it, we can explain what Howard is trying to do and see if we can secure their allegiance. If any deny it, you can be pretty sure that person is still considering Howard's proposal or has already decided to accept it. You need to be careful about what you say to each of these people, until we are sure where they stand."

"Bill, on your first point, I have an idea. The Indo-Iranian pipeline through Pakistan. We have already been approached by the Indian government to help them. Howard probably knows that. India desperately needs a reliable source of cheap energy, so they are in favor. The sticking point has been Pakistan. Pakistan is anxious for the deal because they stand to earn five hundred million dollars a year as transit fees, but India is not satisfied with the security guarantees Pakistan is offering. They feel the risk is too high that Pakistan might one day cut off the flow of gas or extremists might blow up the pipeline somewhere along its course through Pakistan. The US is against the pipeline because it perceives it as support to Iran. In spite of pressure on India, the Indians seem to favor the project. If Howard thinks we may play a role in influencing India's decision, he'll find it hard to resist raising the issue sooner or later."

Bill liked the idea. "As for your second suggestion," Dan continued, "regarding our senior staff, the idea bothers me. If we start suspecting our own people or if they start suspecting that we suspect them, the

whole atmosphere of trust and confidence we have built up over the past two years may be destroyed. The threat from the Government is only a potential threat, but lost trust is a real loss. I cannot afford to risk destroying our relationship with staff. Suspicion is itself a deadly disease that spreads by itself and infects whatever it comes in contact with. I'd almost rather lose the people than lose trust in them before they do something to warrant it."

"Then find another way," Bill replied. "Take them into confidence, if you feel they are trustworthy. But do not assume that every employee shares your values and idealism. If the Government offers a big enough incentive—what is another five hundred thousand dollars to them if it achieves their goal—they can tempt anyone who is capable of being tempted by money."

"Half a millions dollars! That's absurd. No one here is worth that much to us or to them, except one of the partners." Dan replied.

"First of all, they don't know that. Second of all, they may not care. By attracting a senior person from here, either they get the knowledge they are looking for or they make your life more difficult in the hope it will make you more amenable to compromise." Dan understood Bill's reasoning and agreed to meet privately with Eric, Alan and Tony. Losing any one of them would be a blow right now. Losing Tony would be especially damaging. The very person Anya wanted to fire was the guy they needed most. Next to Anya herself, he possessed more knowledge of AIS⁶ than anyone else.

The next day Dan executed Bill's plan. He warned his partners that the surveillance may still be in place, so they all exercised extreme caution in communicating at or from the office. Each of them already had purchased a second cell phone with a prepaid phone card that they changed every few days, so that they could use these private lines for confidential communications, while continuing to use the others for normal conversations. On Thursday afternoon Dan emailed Howard again asking whether there had been any progress on solving their problems. Howard mailed back almost immediately that both problems had been resolved. Later that day Dan met with each of their senior project leaders. Jean repeated what he had told Vinay. He had been approached by both Auku and someone from Washington. The offer from Washington had been at double his present compensation with a promise of more. He had turned down both offers flatly, saying he was not interested in leaving MAI at this point for any offer. Dan felt gratified to hear similar responses from Alan and Eric, which he believed to be genuine. They seemed to fully reciprocate the trust that he had placed in them. Dan promised them that a generous stock option plan would be in place before year end. With Tony he felt less certain. At first Tony denied that the Government had approached him at all. When Dan looked surprised and told him that Alan, Eric and Jean had also been approached, he looked embarrassed and admitted it was true. He said he did not want them to lose confidence in him just because he had appeared for an interview, especially when Anya and he were already having problems working together. Dan told him that he understood Tony's concern. In truth from that moment Dan lost confidence in him. He had a hunch that Anya might get her wish, whether they liked it or not.

64. National Intelligence Estimate

No accomplishment is possible until all the errors, misconceptions, tricks, and false steps are withdrawn, eliminated or allowed to play themselves out on both sides.

Messages XX

Wednesday night Dan and Bill flew to Washington for the meeting with Howard the following morning. Howard was a tall, good looking and imposing figure whose very size gave him a physical presence. Added to that, he carried the power of his office conspicuously, so none could doubt that he knew who he was. Thompson was also a large man, but Dan had the impression that Thompson's size was strictly physical. Howard was a man of greater intellect and substance. He was courteous and polished, sophisticated and urbane. He greeted them in the middle of the room and invited them to sit around a circle of soft red leather chairs, rather than at his desk, suggesting that he hoped to persuade rather than threaten them as Thompson had done. Dan noted that he brought no aides to the meeting. He wanted their discussion to be private and unofficial.

Dan began by introducing Bill, making sure to include both his legal background and work for ACLU. He wanted to remind Howard that MAI was not alone in the world. Then he thanked Howard for his help in resolving the two problems he had mentioned on the phone and asked Howard for additional confirmation that they had truly been resolved. Howard assured them that they had been. Howard asked each of them in turn to tell him more about themselves. Dan recognized it as a diplomatic technique which Lord Mountbatten had employed with success in negotiating the end of the British Raj with Indian leaders during his brief stint as India's last Viceroy. Even as a mere tactic, Dan couldn't help appreciating the difference in approach between Howard and Thompson.

Once the formalities were over, Howard came straight to the issue. He referred to the earlier meetings with Thompson and acknowledged that things had not been done properly, though he denied any knowledge of it until after the fact. "I must congratulate you on your tactical skill, Mr. O'Hara—or may I call you Dan?" Dan nodded. "Good, and please call me Ed," he replied. "As I was saying, I admire your tactical skill in presenting to us two case studies last week which you must have known in advance we would reject for their unrealistic and unusable recommendations. You probably hoped to convince us that AIS⁶ was defective and unworthy of the Government's attention. I understand the reason and I am not criticizing you for it."

Dan interrupted, "I'd like to point out that we have submitted the same two case studies to the United Nations and their experts found both our prognosis and recommendations precisely in line with their own."

"Of course" Howard continued with a smile, "those UN bureaucrats love to pronounce utopian goals and advocate impractical strategies. Having no real power or responsibility, they thrive on idealism without foundation or substance, words they don't believe, proclamations they have no intention of acting upon and they know will never be realized. We are more realistic and pragmatic. In any case, as I was saying, I admire your tactic. I just wanted to let you know it did not work. Before ever authorizing Thompson to contact you, we had gathered enough information to believe that AIS⁶ is a very powerful analytical tool. I congratulate you on being able to create such a sophisticated instrument. Credit should be given where it is due. But, as Thompson tried to communicate in his own fashion—inappropriately I concede—the US Government cannot simply close its eyes to what you have done and pretend it does not exist, or refuse to consider the possible consequences of our enemies acquiring such a powerful weapon. That would be irresponsible on our part."

"Mr. Howard, Ed, AIS⁶ is not a weapon. That is where the government seems to be mistaken."

"You may not have intended it to be one, Dan. I'm sure you did not. But that does not mitigate the fact that other people may see the potential it has for harm as well as for good and chose to apply it for the wrong purpose, just as the Internet is used by drug smugglers, criminals and terrorists. That is not something you or anyone can control or guarantee, unless we control access to the instrument. Knowledge is power. We need to ensure that this knowledge is only applied for good. That is why it is essential that we can come to an amicable arrangement."

"Ed, I still have not properly expressed what I am trying to communicate. Even if AIS⁶ fell into the hands of Al Qaeda, it could do not harm to the USA or anyone else," Dan replied.

“I think you underestimate the intelligence and technical capabilities of those people, Dan. They have many highly qualified electronics engineers working with them, even some educated at MIT and Caltech, as you yourself were, I believe.”

“I don’t mean they lack the intelligence or the technical capabilities to understand and use AIS⁶. I mean AIS⁶ lacks the ability to lend itself for their purposes.”

Howard repeated, “Dan, any instrument can be used for good or bad—this paper knife on my desk can be used as a weapon, this paperclip can be used to help pick a lock, this phone can be used to order someone’s murder, my briefcase can be used to carry stolen money or smuggled drugs. No matter what your intentions, you can never be sure that AIS⁶ will not be used by bad people for bad purposes.”

“But I am sure,” Dan insisted. “That is what I am unable to communicate. It does not matter who uses it for what purpose. AIS⁶ can only do good.” Bill was listening to Dan and Howard go back and forth on this issue, and he had to confess that Howard was making more sense than Dan was. Anything could be used for good or bad, even a lawyer’s knowledge, even the law itself, even the American Constitution. Then why not AIS⁶? Bill could not understand why Dan failed to see this obvious point or why he continued to labor the point without evidence to support his assertion. “Let me put it this way,” Dan continued, “if Germany, Italy and Japan had known in advance the outcome of World War II, do you still think they would have been anxious to start it? If Germany had known it would be conquered and divided for forty-five years and half the country would be subjected to severe authoritarian rule, would it have taken the initiative it took? If Japan had known it would be conquered, atomic bombed, physically invaded and its Emperor reduced to a mere figurehead, would it have attacked Pearl Harbor and invited catastrophe on its head? Well, if it had had access to AIS⁶, that is what it would have foreseen. Perhaps its leaders would have disbelieved or disregarded what the program told them and persisted in their suicidal course anyway—human perversity is capable of insisting on its own self-destruction—but in neither case could AIS⁶ have been used to foster their goal of world domination. That is what I am trying to say. AIS⁶ views issues from the widest, most comprehensive perspective, whereas human problems arise from looking at things in fragmented, narrow, limited terms. Would we have polluted our air and rivers with industrial effluents in the 1940s and 50s, if we have been aware how we were poisoning our own environment and would have to struggle to undo all the damage a decade later? Perhaps we would have anyway, but the knowledge of what we were doing would certainly have acted as a restraint. It could never have been used to justify or facilitate greater self-destruction. Would the British have acted with greater or less severity in their historical domination of Ireland, had they known they would have to confront decades of terrorism in Ulster later on? Would Britain have been in such a hurry to create the world’s biggest empire, if it had known that generations later England would be flooded with citizens of its erstwhile colonies and Englishmen would complain that London had been taken over by immigrants? Would the USSR have precipitated the Cuban Missile Crisis in 1962, if they had known that it would bring them within inches of outright war with the USA?”

Dan’s argument was beginning to make more sense to Bill, but he still wasn’t sure Howard was convinced. “So you are trying to say that AIS⁶ has the capacity to foretell the future and make us wiser beforehand about the consequences of our actions, is that it?” Howard replied. “If so, then it can also help our enemies model more successful strategies to defeat us?”

Dan elaborated, “I am trying to say that whoever acts, limitation of knowledge, narrowness of perspective, leads to actions and consequences that are detrimental to everyone and comprehensive knowledge makes it clear that we are all in this together. AIS⁶ is not a tool for fortune telling. No one can say what is going to happen, because ultimately that depends on man’s exercise of free will. What AIS⁶ can tell is which course of action will be most beneficial in the long run.”

“But what if the most beneficial course for me is the least beneficial course for you?” Howard asked.

“In the long run it never is,” Dan replied, “though it may appear that way to those who do not know the end of the story. No doubt, the Mexicans were mighty sorry when Texas and California were annexed to the USA. But imagine fifty years from now when Hispanics are the dominant population of both states and the majority of elected officials are Hispanic. We will wake up one morning and discover that we spent two hundred years developing these wilderness regions so that they could be reoccupied by descendants of their original settlers and claimed again as their own. When problems are presented to AIS⁶, it examines the ultimate consequences and points out the course of action that is ultimately most beneficial.”

Howard was still not convinced. “What does AIS⁶ have to say about the atom bomb? Were we wrong in racing to develop it before Hitler could make one of his own? He would not have hesitated for a moment to use it wherever it served his purpose. Fortunately we did it first. It is very fine for scientists such

as Einstein, Oppenheimer and Rotblat to condemn the weapons later, but they were the ones who created the geni in the first place. Were they wrong?"

"Now you are talking about technology, not knowledge. Technology is, at best, a very partial and limited knowledge, confined to physical structure and physical processes. The knowledge I am talking about encompasses knowledge of human beings, society, accomplishment, the environment and life as well. A partial knowledge can always be used for good or for bad, because it is partial. But AIS⁶ does not create technology. It generates perspectives of the whole. With regard to nuclear weapons, knowledge of the whole could have told us fifty years ago that if America built nuclear weapons today and insisted on the military superiority they provide, someone else would build them tomorrow. Knowledge of the whole would have told us that these weapons should have been abolished and banned in 1950, the way chemical weapons were outlawed by international convention in 1925. But the knowledge the five original nuclear powers have been implementing is quite the opposite. Even after agreeing to abolish all nuclear weapons in 1965, they insist on maintaining their monopoly on nuclear terror, keeping thousands of missiles on hair-trigger alert status aimed at population centers around the world. Their actions have created powerful incentives for other countries to acquire these weapons too. The current predicament with regard to North Korea, Iran, India, Pakistan, Israel, Syria and other countries is a direct result of pursuing ignorant policies that ignore our own best interests. Ironically, the USA is the one country in the world which will be far safer if nuclear weapons are totally abolished, because no country or group of countries is strong enough to threaten us with conventional weapons. Yet we are the greatest obstacle to eliminating these weapons."

Howard was familiar with this line of thought and personally believed it contained a real grain of truth, but he was still skeptical about wide dissemination of AIS⁶, "How can you be so sure that AIS⁶ will always conclude that a mutually beneficial approach is the most advantageous?"

"Because that is the principle on which AIS⁶ is based," Dan explained. "That is how it is programmed to reason."

"And what leads you to believe that this principle is actually valid?" Howard asked.

Dan smiled enigmatically and replied, "Apart from the fact that all objective historical analysis supports that conclusion, let us just call it intuition."

Howard was beginning to wonder whether the government's own experts had not grossly over-estimated the capabilities of AIS⁶. Had these four young technocrats managed to fool the US Government into thinking that they had created a technological wonder, when in fact they had merely programmed some facile platitudes into the computer? "Dan, do you really expect the US Government to base its actions on the recommendations of an AI system founded on intuition?"

Dan shook his head. "Not at all. Remember we did not call you. The Government called us. Frankly, I never expected the Government to take interest in AIS⁶ at all. I am flattered to hear that your experts found it of value. I am not at all surprised to hear you say that its underlying assumptions are unacceptable. If ever the Government is going to accept guidance from AIS⁶, it should be on the basis of evidence, not assumptions. That is what we have done. We have tested our assumptions in real life situations and found the system works. I would recommend that the government do likewise."

"And, I suppose, that if we do test it, you believe AIS⁶ will perform infallibly?" Howard asked, then found himself surprised by Dan's response.

"Not at all," Dan said. "We know AIS⁶ is not infallible. In fact, we know it is defective. The software is still evolving and some critical links are still missing. But what I do know, or rather believe, is that AIS⁶ will outperform any other system in existence in analyzing and identifying the most advantageous course of action."

"Then you admit that it could generate erroneous recommendations that might lead to wrong actions?" Howard said, as if finally he had cornered Dan into confessing a fallacy in his own logic.

"Yes, I do," Dan replied, "but the same thing is true of the advice generated by any expert or any other system as well. So far no one can guarantee that their recommendations are flawless. The only difference is that we have reason to believe AIS's may be more reliable than that of most experts. AIS⁶ is programmed to arrive at impartial, objective truth, not to tell people what is politically correct or acceptable. Theoretically, AIS⁶ is incapable of doing harm because it is founded on knowledge of the whole. Practically, it may still be vulnerable to various types of error, but no more so than every other basis for decision-making. That is why we refused to concede Thompson's demand that we voluntarily submit to controls on the sales of AIS⁶."

Howard paused to take stock. He wanted to press Dan harder, but he did not have a clear strategy or a lever to press. “Dan, let me say again that we cannot tolerate the use of AIS⁶ to undermine the ideals of freedom and democracy we stand for. Support for the theocracy in Iran is criminal. They are almost as bad as the North Korean regime. The Indo-Iranian pipeline would significantly buttress Iran’s position in West Asia. We cannot and will not let that happen.”

“Ed, I give you my word we have no intention of supporting undemocratic regimes anywhere that seek to deny people the right to true freedom and democracy.” Dan finally seemed to be conceding a point to Howard, but his emphasis on the word ‘true’ seemed intended to show that he questioned Howard’s own usage of the terms. Then Dan suddenly reversed strategy and asked his first direct question. “If the government believes that AIS⁶ is defective, why is it so eager to acquire our company and control it?”

Now it was Howard’s turn to smile. “I am speaking confidentially. The simple truth is that our own intelligence sources are so flawed that we are desperately in search of a better means of analyzing the data we gather. It is no secret that the 2002 National Intelligence Estimate regarding Iraq was way off base. Sixteen US intelligence agencies signed a report confirming that Iraq had retained weapons of mass destruction which it was concealing from the International Atomic Energy Agency’s on-site inspection team. Disregarding contradictory evidence provided by IAEA, the US declared war on Iraq and has become deeply embroiled in a very messy situation. It has been a very costly burden to the country and a deep embarrassment to the Administration. If this were a mere isolated error, it would be one thing. But the string of NIE blunders is too long and painful to recount. The Intelligence Services failed to anticipate either the end of the Cold War or the collapse of the Soviet Union. They advocated that we arm and encourage extremist Islamic groups to fight the Soviets in Afghanistan. The success of that strategy resulted in the Taliban take-over and necessitated our invasion of Afghanistan in 2001. They failed to correctly anticipate the acquisition of nuclear weapons by the USSR, China, India, Pakistan or Korea. If that record were not impressive enough, in 2005 the NIE submitted a separate report about Iran which concluded that Iran is pursuing an active nuclear weapons program. There are those within the Administration who are urging an attack on Iran to destroy its nuclear capabilities before it can actually produce sufficient weapons-grade uranium to make several nuclear weapons. The Secretary of State is completely opposed to such a reckless and dangerous course of action, but in the absence of contradictory evidence, the President has adopted an increasingly strident, confrontational tone against Iran that may take us down a warpath we cannot easily retreat from. That, in a nutshell, is why we are desperately seeking a more reliable basis for national intelligence.”

This was the first explanation Dan had heard during all his visits to Washington that made any sense to him. Perhaps it was the first time someone was actually speaking the truth. It might not explain all of Thompson’s words, actions and behind-the-scenes intrigues, but it certainly answered some basic questions. “And what makes you think,” Dan asked, “that AIS⁶ can do better than sixteen national intelligence agencies?”

“You eloquently explained it yourself earlier in our meeting,” Howard replied. “I baited you to make you bring out the point as clearly as possible. It was not so much that the NIE data on Iraq was wrong, it was the interpretation that NIE placed on that data which led the agencies to erroneous conclusions. It was based on such a narrow, limited perspective of the situation. We need to examine situations from a more comprehensive perspective. Had we done it in Iraq, we would have realized from the start that the easiest part was defeating the Iraqi army and executing Saddam Hussein. The hard part is what would happen next in a country which was a sectarian firebomb waiting to ignite, a historic aberration without any real sense of national integrity, other than the strong-armed leader we just deposed.”

Dan remained motionless and silent. For the first time Dan began to sense he was dealing with an official capable of truly understanding what they were trying to do. “I wonder if you are aware of the analysis MAI conducted of Iraq in 2005 with AIS¹. We input all the data that was publicly available as of March of 2003 and asked AIS¹ to recommend a course of action. Of course, it was done two years after the fact. It was only intended to test the system. AIS¹ strongly advised against military action in Iraq.”

Howard nodded his head. “That is one of the reasons why we have been pursuing you. I have a copy of that report. As incomplete as it was, I wish we had based our decisions on AIS¹ instead of on the NIE report. That is why I believe it is so important for MAI to cooperate with us.”

“Why didn’t Thompson just say so in the very beginning, instead of commanding, threatening and tempting us in so many different ways?” Dan asked.

“I admit that it may have been a mistake to leave the negotiations to Thompson, but it was the natural thing to do. It was he who first made us aware of the significance of your work. He has been

monitoring your activity since your first assignment with NASA three years ago. He knew more about MAI and AIS than anyone else in Washington. I know he can be a little pushy and rough at times, but I had no reason to think he could not handle this. Compared to some of the assignments he has taken up, it appeared relatively straightforward. For some reason, he decided to apply pressure where frankness and reason would have been much more appropriate. I apologize for the strong-arm techniques. That was never my intention.”

Dan wanted to believe what Howard said and was inclined to give him the benefit of the doubt, but there were still so many unanswered questions. “Then why the wire-taps? Why the effort to hire away our best people?”

Howard looked somewhat uncomfortable and defensive. He had to be circumspect in what he said before witnesses. He paused to choose his words carefully. “I am not in a position to admit that the government has been involved in wiretapping, Dan, but I cannot deny the possibility, either. If wiretapping was done, it was not by my authority. I did not know Thompson was using such methods to monitor your activities. I know it sounds extreme, but we considered your work so important, he probably wanted to be absolutely sure that he had all the relevant information. It is sometimes hard for outsiders to appreciate how paranoid and suspicious people are here about anyone or anything they do not know personally, especially after September 11. In any case, if it was done, I have taken steps to see that it stops immediately. As for recruiting your staff, well there is nothing either unusual or illegal about it, so I cannot even fault Thompson for the attempt. He clearly wanted to acquire as much expertise as possible in AIS⁶.”

Dan decided to press further. “Then what about the break-ins at MAI and my apartment and the theft of the hard drive and other documents?”

Howard looked genuinely surprised. A wrinkle of doubt appeared briefly on his forehead, suggesting to Dan that this was new information to him. “Dan, this is the first time I have heard anything about any break-in or theft. If anyone at State has authorized such an action, I will find out and recover your property as quickly as possible. That is all I can do at this point.”

Finally, Dan came to the question he had been most eager to ask from the moment he met Howard. “One more question, Ed. Why did Thompson say that he knew about *The Book*? He said he assumed that I was carrying it with me. Why did he threaten to take it from me by force?”

Howard looked genuinely puzzled. Shaking his head, he replied promptly, “Dan, I know nothing about any book. What book are you referring to?” Dan shrugged his shoulders and raised his eyebrows as if to indicate that he too was baffled by Thompson’s words.

“In any case,” Dan replied, changing the subject as adeptly as possible, “if you are expecting any type of cooperation from us in future, we will expect all forms of harassment and intrusion to cease immediately.”

“That’s fair and agreed upon,” Howard replied. The phone on Howard’s desk rang and he looked down at his watch. I apologize, gentlemen, I am late for a meeting with the Secretary. I hope that our discussion has cleared the air so that we can explore ways to work together. I would like to speak with you again. Now that we have met, perhaps we can schedule a conference call next week to save you another long trip across country. Howard rose and extended his hand to each of them. The door opened and an orderly gestured for Dan and Bill to follow him out of the office. Howard again picked up the phone and said a few words to his secretary. A moment later another door opened at the opposite end of the room and Kurt Levin walked in.

“Well, how did I do, Kurt? I hope you will say I did better than Thompson.” Seeing Levin nod, he continued, “Thompson was a fool to try bullying these people. O’Hara is no pushover. He may not know his way around Washington, but he knows what he wants. Taps are one thing, but a break-in without even seeking authorization? Very clumsy and unnecessary. We have other ways of getting the information we need. If you see Thompson, tell him I want to speak to him before he leaves tonight. By the way, what did you make of O’Hara’s argument that AIS⁶ can do no harm?”

Levin nodded again, “I’m not sure what to make of it.”

“I’ve got to run, Kurt. Meet me on Monday and we will talk about next steps.” Walking toward the door, he remembered something else he had wanted to say. He turned around and asked, “What is all this about a book, Kurt? I don’t recall you or Thompson mentioning anything about it?”

Kurt responded to the question exactly as Dan had a few moments earlier, by shrugging his shoulder and shaking his head. If Thompson did not feel he had to disclose the existence of *The Book* to his boss, Levin certainly was under no obligation to do so. That was not part of his present assignment.

Dan and Bill walked out of the building office and got into a taxi. As they drove past the parking structure where they had parked on their previous visit to State, Dan pointed to a high wooden partition in the middle of the road with a space for cars to pull in and out of the parking lot. "That is where the accident occurred which nearly killed us last week." Bill's eyes followed his finger. There seemed to be a traffic jam and some kind of commotion on the street at that spot. As they came closer, they saw an ambulance and several police cars with flashing lights, then from a further angle they could see two cars had collided headon, both badly crushed by the impact. Apparently a serious accident had occurred at exactly the same spot within the past few minutes.

65. Cross-examination

Bill's head was full of questions as they rode to the airport, but he saw Dan was pensive and exhausted from the meeting, so he kept to himself. After checking in, they went to the lounge to pass the two hours they had before their flight. Dan pulled out his computer and sent a message to Vinay, Ray and Anya giving them the gist of the meeting. Then he sat back and looked up at Bill, "If you have any comments or questions regarding the meeting, I'd be happy to hear them."

Bill returned to the debate with Howard regarding possible misuse of AIS⁶. "You pushed Howard pretty far on that issue, Dan. You must have known you were saying something controversial. What made you press the issue?"

"I do not know a better way to distinguish AIS from all the others," Dan replied. "This issue goes directly to the heart of the difference in our approach. Once I concede that point I must ultimately concede the necessity of restricting AIS⁶ to the good guys, which from Washington's perspective is a very small group indeed."

"I am an idealist at heart, Dan, but even I find the idea far-fetched. How do you know AIS⁶ is incapable of doing harm?"

"The truth is, Bill, I don't know. I cannot prove it. I'll go even further to admit that I do not think it is fully true, but I believe it is possible and that is what we are working towards. Since I do not know for sure, I would never agree to send AIS⁶ to North Korea or anyone else who might misuse it. I assume if North Korea or Iran got hold of AIS⁶, they would find its recommendations as objectionable as Thompson found them, probably much more so. They would end up discarding the software as useless or as an instrument of the devil. That is partially because it is still imperfect. If we are able to perfect future versions of AIS, then I believe it will be able to tell them something they can appreciate and accept, but yet will lead them in a direction that is good for all, rather than reinforcing the partiality and falsehood of their present positions. That's why we need to continue our research. In any case, our threat to distribute the software was simply a bluff. I knew we could use it because Thompson and Howard have no conception of an instrument that is incapable of evil. The government uses or rather misuses the idealistic notions of freedom and democracy continuously, so how could they believe that any truth was immune from perversion? That is why we will not give the software to anyone—not yet anyway. But the government does not know that and we should never let them find out. That is the only thing that keeps them from shutting us down and confiscating all our work or even throwing us in jail the way the Israelis imprisoned Mordecai Vanunu to keep him from disclosing the truth regarding their nuclear weapons program."

Bill laughed, "So you were bluffing all along!" Dan just smiled and leaned back in his seat. There was another question Bill had been eager to ask. Now he saw an opportunity. "What is this book you refer to? In your meeting with the partners you mentioned it. Then you told Howard that Thompson had threatened to take it by force. I can't figure out what you are referring to?"

Dan nodded again, leaned forward, reached into his briefcase, pulled out a small, brown leather covered volume and handed it to Bill. Bill looked down at *The Book* and began to leaf through it. The first thing he noticed was that it bore no title, no author, no publisher and no date. The bright white paper with jet black ink gave the impression that it might have been printed just yesterday. Bill opened it at random and read the following passage.

The final outcome of every initiative is shown at the very beginning. Those who observe closely at the start are not surprised at the finish.

"It's one of the first things I learned from *The Book*," Dan said, "and events since then have confirmed it is indeed a profound truth. The afternoon when Ray, Vinay and I left MAI for our very first meeting at the State Department, we narrowly escaped an accident with a reckless teenager. The same thing repeated the next day when we were leaving State after our first confrontation with Thompson, only that time it was far more serious. Today we witnessed another accident in the same place where we narrowly escaped being killed earlier. It's a movement. The initial event reflected the dangers that we were going to confront long before we had any idea that there was any danger. The second incident was more severe, suggesting that the danger was growing more intense. Today we were only witnesses to an accident, not directly involved, which suggests the danger is receding, at least I would like to think so. Before discovering *The Book*, MAI was on the point of closure. From the moment *The Book* came into our lives, there has been non-stop expansion. It began with good news from NASA the very next day. The very first time Ray turned to you for help, Bill, you provided invaluable support for our work. That was again true when we met

accidentally at Ray's four days back. Ray was on the verge of giving up. Now things are very different. The character of the initial contact reflects what is coming."

Bill flipped through *The Book* and read out a longer passage:

A great error is made by those who fail to recognize the existence of evil. A greater error is made by those who think constantly of the evil in or around them. Attention energizes evil. The greatest error is to believe in the existence of evil, because there is no absolute evil. Ultimate knowledge cannot be attained by denying the existence of the opposites—good and evil—but only by transcending those opposites to discover what lies beyond, where all is explained and all is reconcile in Absolute Good.

He suddenly felt exhausted and found it difficult to concentrate on the text. He handed the open book to Dan and said, "I don't get it. What does it mean?"

Dan read the passage and replied, "It's the answer to your question. It's what I was trying to explain a few minutes ago. It refers to the all-conclusive knowledge that reconciles the opposites in Absolute Good. That is the knowledge on which AIS⁶ is based, at least partially. That is our objective. *The Book* is the source of that knowledge." In response to a host of questions, Dan agreed to narrate the history of *The Book* from the beginning. He told Bill whatever he could about how he had found it at Moe's, how he had discovered the meaning behind some passages and applied that knowledge at MAI to solve a severe cash problem with magnificent results, how the partners gradually came to recognize the value of *The Book* and agreed to follow its guidance. He also told Bill about discovering the *Archives* and the *Messages*, which elaborated and applied the knowledge in *The Book*. Bill asked many other questions to which Dan still did not have satisfactory answers, even after more than three years, questions regarding the authorship of *The Book*, *Archives* and *Messages*, the origin of the knowledge they contained, and similarities or differences with other systems of knowledge.

As they boarded the flight, Bill reviewed what he had heard from Dan. There was much he did not understand, and much of what he understood he did not believe. It was too fantastic. To think the US Government had offered to pay five hundred million dollars or more for a piece of software based on a book without a name or author that speaks of evil and Absolute Good. Bill would love to see Howard's face if he ever discovered the truth. Yet, apparently Thompson already knew it, and that had not deterred him from vigorously pursuing both AIS⁶ and *The Book* itself. What was even more amazing, Dan and his partners had turned down that offer. Was it possible that Ray, Vinay and Anya were all captivated by the same illusion that had overcome Dan? The more Bill spoke with Dan, the less he understood him. At times Dan seemed to have profound insights into people and life, at other times he seemed to be extremely naïve, his mind somewhere off in the clouds. And at other times he seemed to be in both places simultaneously.

After brooding for a while on what Dan had told him, Bill raised another question. Why not print *The Book* and distribute copies to the whole world? Dan was anxious to avoid saying too much more. He had already given Bill enough to digest. So he tried to deflect Bill's inquiry by presenting the simplest explanation consistent with the facts. "Even if we could distribute copies to everyone, like the Bible, I doubt very much that anyone would read it or make anything of it. Even among my partners, none of them feel a personal affinity for it the way I do, though they respect it and value its knowledge immensely. We each understand a different language and respond to knowledge in a different form. Anya's mind speaks the language of mathematics—pure abstract concepts—the fathomless zero and infinity. Her heart speaks the language of poetry. Poetic truth touches her emotions deeply. Vinay reads the language of life and action. He loves external challenges. He derives insight from every life situation. He absorbs and assimilates knowledge from life events the way others digest and assimilate their food. It comes from his traditional background. The Indians have a consummate knowledge of life that it is difficult for us to even fathom. Ray reads the language of structure. He sees patterns and formulas in his mind the way Einstein saw $E=mc^2$. Einstein did not discover the formula, he saw it. Ray derives universal truth from structure. He perceives the truth and beauty in form. As for me, my way seems to be philosophy—I need words, explanations that hint at and reveal something beyond the words, ideas to contemplate. I believe that is why *The Book* came to me and not to any one of them. But each of them is able to recognize the truth of what *The Book* says and translate it into their own language. Without Ray, Vinay and Anya, I could never have created AIS⁶. Without *The Book*, they never could have done it either. We complement each other like the multiple layers of software on a computer—the basic programming language, the operating system, the application software. Each plays an indispensable role. *The Book* is ground zero. It provides us the knowledge. Anya translates it into mathematical concepts. Ray gives it structural form. Vinay links the abstract principles with life—his role is the application software, metaphorically speaking. When we first met in Fort Lauderdale, we

discovered that we shared a common dream. We started MAIS and failed. We had the aspiration, but we did not have the knowledge. *The Book* brought the knowledge we needed. I believe it came in response to our aspiration.”

After take-off, Bill spent the first hour reviewing in his mind what had happened during the day and what Dan had just told him. Like an astute lawyer cross-examining a key witness, Bill sensed Dan was holding back and so he resumed the discussion over dinner. “If *The Book* is all about Good, why don’t you just buy another copy and give it to Thompson and whoever else wants one. Or if you can’t find one for sale, simply make a photocopy?”

Sighing as he was confronted by the very question he had most wanted to avoid, Dan smiled and shook his head. “I can’t, Bill. That’s just it. *The Book* can’t be copied. Don’t think I haven’t tried. I know you won’t believe me. I am sure you don’t believe half of what I have said in the last few hours. But it is the truth. When I tried to copy *The Book*, the pages faded and became indistinct. I almost lost the whole book by trying.”

Bill was totally incredulous. For a moment he thought Dan was joking, but he looked serious enough. “The print in this book looks bright and brand new, like it was printed yesterday.” he replied.

“You should have seen it about twelve months ago,” Dan remarked. “It was barely readable.” Then Dan proceeded to narrate another story about how Lauren had discovered that *The Book* was disappearing and how he finally found a way to restore it. Bill didn’t think he believed a word of it. Then Bill asked about the *Archives* and *Messages*. Why didn’t he give copies of them to the Government to satisfy their curiosity? Why didn’t he print and distribute them? Sighing again, Dan replied they could not be copied either. So Bill suggested he simply give people the URLs and let them read the documents online for themselves. In fact, he told Dan that he would like to go through them for himself. Dan replied that it wasn’t possible because the *Archive* pages disappear from the web almost as soon as someone finds and prints them. Bill’s sense of disbelief turned into exasperation. Seeing his response, Dan said, “Ask Ray. Ask Anya. Ask Vinay. They will tell you the same thing.”

Dan closed his eyes and slept for the remainder of the flight. Bill could not sleep a wink. His mind became a kaleidoscope of irreconcilable ideas, doubts and absurdities. He could only wonder at the whole situation. But he was very sure of one thing. He was not about to invest any more money in MAI and in AIS based on what Dan had related to him this evening.

66. Search

Ray was still in bed when he received a call from Dan the morning following his return from Washington. It was unusual for Dan to call early, especially over the weekend. Without giving any explanation, Dan asked Ray to come over to his place, as soon as he could make it. When Dan opened the door to let him in, Ray stopped in the doorway and stared in disbelief. The room was in a shambles. The contents of every drawer had been dumped on the floor. Books had been thrown around. Kitchen cabinets were wide open. Even the trash was dumped out on the floor. “What happened, Dan? It looks like you had a break-in?”

Ray was even more surprised by Dan’s response. “This is the second one. I did not tell you about the first, because you already had enough pressures and disturbances to deal with. It occurred on the day we met at the hotel to discuss strategy for the meeting with Thompson, just after the break-in at MAI.”

“Did they take anything?” Ray asked.

Dan shook his head. “Not a thing. I think they were after *The Book*, and perhaps my computer files or the *Archives*, but they did not find any of them. I had my computer and *The Book* with me both times. I was afraid to leave *The Book* behind. The *Archives* were here right in front of them, but they missed them both times.”

Ray knew that the *Archives* consisted of at least a dozen volumes, so he wondered how it could have been overlooked in such a thorough search. Dan pointed to the navy blue, leather-bound set of *Encyclopedia Americana* volumes on the wall shelf, which had been there for as long as Ray could remember. It was an old set from the early 1980s in thirty volumes. Dan smiled, took down one of the volumes and opened it. Inside the leather binding, pages of *Archive* material had been substituted for the original encyclopedia pages. He pulled down another volume and showed Ray a page from *Messages XV*. “During the first break-in, the *Archives* and *Messages* were in a box in the trunk of my car. I had been ferrying them back and forth to the office, so I could refer to them whenever I needed to. After the break-in and the near miss accident with the bus in Washington, I realized they were vulnerable both to theft and other events. I racked my brain trying to figure out a safe place to keep them where they would still be accessible for reference. Without access and use, they will disappear. They had to be kept nearby. There are too many people with access to my office for these volumes to be safe there. Finally, I thought of rebinding them in the encyclopedia volumes. I knew it was risky, but I could not think of another option. Luckily it worked, at least this time. Perhaps they do not even know about the *Archives*. If they were only looking for a single volume, they would naturally overlook a whole set of volumes. They opened everything else, looked everywhere, tore up cushions and poked holes in the wall looking for hidden storage spaces, but they never bothered with these volumes. Who knows what will happen next time?”

The partners had agreed to meet at 10 am Monday morning to review the meeting with Howard. Dan arrived at 9:30 am and found Bill already there and actively working on one of the spare computers outside his office. When he saw Dan walk in, Bill rose and approached him with a broad smile. There was a gleam of excitement in his eyes and voice. “I think I just found a portion of the *Archives*!” It was Dan’s turn to look surprised. He asked to see what Bill meant. Bill pulled out a brief document entitled *The End is reflected in the Beginning*. “I thought about what you said Friday night about the significance of Thompson’s behavior. I found the idea of the final outcome of a long series of events being reflected in small circumstances at the very beginning quite intriguing. It reminded me of a big business deal I had negotiated early in my career that turned into a total fiasco. In the first meeting, the seller offered to supply petroleum to my client at a given price for two years. The very next day when we went back to sign the deal, the seller had raised the price and changed the terms. The change was relatively minor, so my client accepted the modification and signed anyway. We missed the clue. Six months later, the supplier broke the contract and virtually drove my client out of business. Subsequent events were indicated at the start, but we ignored the signs. If only I had been more alert, we could have saved my client’s business. So when I arrived here a little early this morning, I did a search for that phrase and this is what I found. It explains the principle and cites two dozen examples from history, literature, and biography. Did you know that during the coronation of the Russian Czar Nicholas II, the chain holding the czar’s official pendant broke and the pendant fell from his neck? At the banquet held to celebrate his coronation a few days later, more than two thousand people were killed or injured in a panic to get some of the food? These events presaged the Russian Revolution. He was the last czar. After reading the article online, I printed a copy and then wanted to check the site for other related materials. The page was no longer there. It was exactly as you had described it. I have never seen anything like it before. It suddenly occurred to me that if this could be true, perhaps everything you told me was true. Sorry for putting it that way, Dan. You have not given me any cause to disbelieve your words, but what you told me on the plane last night was too fantastic for me to accept just on your word.”

Dan thought it was time to fully confide in his partners. So when the meeting began, he started by telling them about the break-in. At the word 'break-in', Vinay and Anya looked startled. Then Dan explained to his partners the entire chain of events; how they were connected and the questions they left unanswered. He also told them about the two robbery attempts at the gas station and at the traffic light. Anya already knew of one of those attempts. Ray had heard about them for the first time on Saturday. A look of grave concern came over Anya's face. She was deeply disturbed by the news.

"You are going to report it to the police, aren't you?" Vinay asked.

Dan shrugged. "What is the sense? Nothing has been taken. The police will never find the party that did it. My first priority is to protect what we have. The police will only ask questions I would prefer to avoid regarding what these people were looking for so seriously. I don't need the police. I need to find a way to avoid a recurrence."

"Something has to be done," Anya exclaimed. "This is too dangerous. You can't continue endangering your life over a book of philosophy. I can't bear the thought that every day when you drive home or leave your apartment in the morning, your life may be in danger." Her voice became choked with emotion. She tried to make it sound like an emotion of anger, but a deep anguished expression on her face exposed the pretense.

Dan asked Bill to narrate his version of Friday's meeting with Howard, then Dan summarized his own observations and conclusions. "Even though Howard has stepped into the picture, I still think there are some important questions we need to answer about Thompson. From the moment we first came into contact with him, we have been under attack. He has consistently lied. He is the only one whom we know definitely knows about *The Book*. At the last meeting he told us that if the price the US Government was willing to offer for MAI was not sufficient, he could arrange to get us a better price from someone else. We have all along assumed that Thompson's actions reflected the intentions and instructions of the US Government. Howard's conduct seems to suggest they do not. He did not even seem to be aware of some of the things Thompson had been doing. What if Thompson has another agenda? What if in the name of national security he has been pursuing some other purpose or representing some other party? As for Howard, he understands the power of AIS⁶ and is unlikely to give up his efforts to get access to it and control over it. Once he gets a handle on us, the Government will try to take full control. We need to find a way to prevent that."

For the next two hours Bill remained an attentive but silent witness as the partners speculated on probable answers and possible responses to the multiplicity of questions and wide range of issues confronting them. The more he listened, the greater his respect and admiration for the four partners grew. These were not simple, ordinary business issues that could be managed by adept marketing, technological resourcefulness or financial wizardry. MAI appeared to Bill as a microcosm of the world, a miniature world containing all the forces and problems of society at large, impacted by all the forces that move the larger world around it—knowledge, power, money, and physical security. One wrong move might be their last. He wondered at the relative calmness, objectivity and maturity with which they debated issues of the greatest conceivable significance to the survival and future of MAI. He recognized for the first time a strength of conviction that compensated for Ray's nervous timidity. Much that Dan had told him about *The Book* still seemed hard to accept, but he no longer had any doubts about the people themselves. These were people he could accept and trust. It was a privilege to be given the opportunity.

As the conversation wound towards a natural conclusion, Bill asked permission to speak. "I would like to make one suggestion and one request. My suggestion is that you consult a corporate and personal security expert. I know a very good man, Luis Gavoche. He runs a company called Oxford Security, servicing some of the leading corporations in the East Bay. He specializes in technology companies." Anya interrupted Bill to say she strongly supported this proposal and all the others agreed. "My request is that before you make further decisions on how to respond to Howard, you permit me to conduct a little research at MAI so that I can get a better understanding of what may be behind the Government's strong interest in AIS. I believe Howard spoke truly when he said that State had a desperate need to enhance its intelligence capabilities. By now the whole world knows that is true. But I am not sure that is the whole answer. I've had significant exposure to the ways of Washington over the past decade. Perhaps I can come up with other possible explanations or leads worth exploring." The four partners welcomed the idea and Bill offered to start the next day.

67. Research

Anything that is acquired by selfishness eventually serves to help people outgrow selfishness. It can serve no other purpose. This is true of physical strength to dominate over others, aristocratic privilege, authoritarian power, superior technology, higher education, inordinate wealth, and even spiritual knowledge.

Messages XXI

The following morning when Ray arrived at the office, he found Bill sitting at his desk going through a large pile of reports. “Impressive!” was the first word Bill said as Ray walked in the door. “I had no idea you guys had done so much work in the past few years. The range and depth of studies is incredible. In terms of content and quality, it exceeds the output of a major university. Ray, I see you have been the project leader for most of these studies. No wonder you are exhausted. You remember this one? It’s the analysis of the US Health Care Industry by AIS⁵. It’s a total indictment of a privately-funded health care system that leaves millions of families unprotected. The comparison with Canada, France, Germany, UK and virtually every other advanced country is embarrassing beyond belief. I have read other reports that come to similar conclusions, but the linkage AIS draws between health care, juvenile delinquency, drug addiction and crime rates is completely new to me. If that is correct, then the cost of leaving millions of people unprotected is far higher than anyone imagined. A study of this quality should be sent to leading decision-makers and newspapers.”

“We’ve already done that, Bill. I sent out more than a hundred copies to key people in Government, industry and the media. That was at least six months ago and I have not had a single response.”

“What about this study of climate change and global warming by AIS² dated September 1, 2005? As I recall, that is just about the time Hurricane Katrina devastated New Orleans. It directly contradicts the Administration’s denial of global warming with overwhelming evidence to the contrary. I saw Al Gore’s new movie, *An Inconvenient Truth*, last month. This document emphasizes many of the same points. Have you circulated it?”

Ray explained to Bill that they had sent out hundreds of electronic copies to environmental groups, politicians, US and foreign government agencies, universities, businesses, and international organizations—including people like Gore—but the response was muted. The US Administration had done a masterful job of blurring the facts, sowing doubts in the face of incontrovertible evidence, and raising fears that remedial measures would plunge the country into permanent recession. Bill kept going through the pile asking about each report. There was a study of global energy markets, bio-fuels and nuclear energy by AIS⁴, another on outsourcing of jobs to developing countries by AIS³, another by AIS³ on the potentials of the Indo-Iranian gas pipeline to reduce tensions between India and Pakistan, one on the potential for full employment in Europe by AIS⁵, the economic future of Russia by AIS², and finally the studies on food security and nuclear weapons by AIS⁶.

In addition, Bill carefully examined the entire series of reports generated by successive versions of AIS on the US War in Iraq and associated issues. Reading them in succession provided insights into the progressive enhancement of AIS as it evolved from one generation to the next. MAI had conducted at least one and sometimes two or three studies on the war each time a new version of AIS was launched and they sent copies of every report to the White House, the Pentagon, State Department, leading members of both Houses as well as to research institutes, think tanks and international agencies. The prognosis and recommendations made by successive versions of AIS stood in sharp contrast to the actual policies and actions of the US Government in almost every respect. The reports contradicted the Government’s assessment of the security threat posed by Iraq, the types of action that the US should take, the factors that justified that action, and the likely outcome. Where US policy focused mainly on the challenge of winning the war, AIS focused almost exclusively on the challenges that the US would face in building a viable nation-state after toppling Saddam Hussein. AIS traced back the roots of sectarian violence now wracking the country to the power vacuum created by the dismantling of the Iraqi army. It cautioned that free elections could not usher in democracy in a society that lacked the fundamental values of liberalism required to make democracy effective. Surprisingly, on the most central issue of all, AIS did not disagree with actual US policy. Although the US invasion was based on a false premise regarding weapons of mass destruction, AIS’s own analysis concluded that a forcible take-over of Iraq and placement of the country under UN mandated governance for a period of five to ten years was a necessary step for the social evolution of the people and for permanent peace in the Middle East. The last report concluded:

The current impasse and deteriorating situation in Iraq is not the inevitable result of a fundamentally wrong initial decision, but rather a natural consequence of a whole succession

of actions founded on erroneous understanding, suspect motives and a failure to comprehend the essential requirements for human accomplishment. The situation is an embodiment of all that stands in the way of higher levels of human accomplishment—ignorance, falsehood and wrong will.

In terms of recommendations, all versions of AIS proposed joint action by the United Nations rather than unilateral American initiative against Iraq. AIS⁶ refused to offer a prognosis based on the current policy and course of action, but it stated that the disintegration and break-up of Iraq was not inevitable.

The continued deterioration, fragmentation and break-up of Iraq is avoidable, provided corrective action is taken before the division is complete.

AIS⁶ also included one conclusion that went beyond anything reflected in earlier reports.

No permanent and satisfactory solution to the problem in Iraq can be formulated or implemented without addressing the root cause, Palestine, and the root cause of that cause, poverty among the Palestinians.

Bill was deeply impressed by the quality of the reports, in fact, too impressed. He began to suspect that these reports were not generated by an AI system at all. With anyone else he would have been very cautious, but Ray was an old friend and the issues at stake were too high. Bill believed that a lawyer had an obligation to learn all the facts, whether they were in his client's favor or dead against it. "Frankly, Ray, these reports on Iraq do not sound like the output of an advanced artificial intelligence system to me. They read like the scribbling of a liberal democratic think-tank filled with idealistic thinkers such as my friend Ray Berger writing under the impersonal pseudonym of AIS. Most of this is exactly what I would expect to hear if you or I had written this report without any support from an AI system. I'd be surprised if the government did not come to the same conclusion."

"Quite possibly they have," Ray replied, "but they would be as wrong as you are if they did. In fact, I had nothing to do with the authorship of any of the reports. I was responsible only for overall project coordination. I can show you the analysis generated by AIS. Decide for yourself whether the writer put words in the proverbial mouth of AIS. The people who actually write these reports are strictly admonished to leave aside personal preferences and interpretations and we have a rigorous system in place to identify discrepancies."

Bill was still not convinced. He decided to press the point. "Even if that's true, Ray, surely biases are introduced by the selection of data made available to AIS, on which it bases its analysis."

"I understand what you are getting at, Bill, but it's not true. The data parameters set by AIS are so broad and all-encompassing that any effort on our part to consciously rig the output would be very unlikely to succeed. We have provided AIS with virtually all available information on the history, politics, economy, and sociology of Iraq and its neighbors. Furthermore, AIS⁶ analyzed this data based on more than five hundred separate principles and more than twenty-five thousand combinations of principles. Where we might look at the current size of Iraq's army as of utmost importance, AIS may give greater weight to circumstances preceding or surrounding the formation of the country and other such factors. You are welcome to take up a project yourself, Bill, and see if you can predetermine AIS's output. Even if we wanted to, I very much doubt we could do it. In any case, the four of us have taken impartiality as a founding principle for our work. AIS may be based on positive life values, but as far as the facts are concerned we endeavor to provide all that are available. Of course, each succeeding version of AIS acquires a richer information base on which to draw."

Bill went through every document, asked detailed questions, wanted to know who had received them and, particularly, who had responded. Out of the two dozen studies he reviewed, he seemed to find two of particular interest. The first was a study on fundamentalism and terrorism by AIS⁵. That was one of the few reports MAI sent out that seemed to attract considerable attention. The company had received inquiries from the US Government, the UN, Germany, France, UK, Israel, the European Union, India and several others. The other was a more general study on strategies for accelerated economic growth, one of the first they had run on AIS⁶. Ray was not very satisfied with the study. The results were too far out of line with the world's experience until then. It projected potential economic growth rates of twenty to thirty percent per annum, when China's ten percent annual growth over the past decade had been the highest sustained rate by any country on record. He had hesitated to send it out at all, but Vinay was impatient for the first product of AIS⁶ that he could circulate, so they released it despite Ray's concerns. They broadcast the findings widely and had inquiries from Brazil, China, India and Russia and a few other countries. Bill asked whether any party had expressed a particularly high level of interest in AIS. Apart from USA, Ray could not think of any.

He told Bill about a meeting with three Israeli professors who had heard about AIS and dropped in during a visit to the West Coast, but nothing further came to mind. Bill asked him precisely when that visit had occurred. Ray only recalled that it was before Tony Preston had rejoined MAI, because Anya had spent almost an entire day interacting with the Israelis. There was no one to whom she could delegate the task. Ray also mentioned some nasty calls and emails they had received from Christian, Islamic and Jewish groups regarding the study on fundamentalism and terrorism.

After interrogating Ray the whole morning on various issues, a self-satisfied look came on Bill's face which Ray could not decipher. He remembered seeing that same look at other times when Bill felt particularly proud of himself. Bill then asked Ray to introduce him to each of MAI's senior staff members. Ray scheduled meetings with Randy, Jean, Eric, Tony, Edna and Allen for that afternoon. In the evening Bill came back to Ray's office and asked a few questions about the people he had met, questions regarding when they joined MAI, how they had been recruited, their prior work experience and what they had been earning before they came. Since Ray could not remember all the details, he asked Edna to send in their files, so that Bill could go through them. An hour later, Bill sent Ray a note in which he asked Ray to schedule a meeting of the partners for the following morning somewhere outside the office. He requested Ray to inform the partners and make all the arrangements in writing, so there was no possibility of a conversation being overheard or monitored.

68. A Lawyer's Acumen

The next morning they met in a small hotel meeting room on University Avenue. Since Bill had asked for the meeting, they waited to see what he wanted to discuss. He started off by quickly reviewing the research he had conducted the previous day and mentioning some of the things that he found particularly interesting.

“You remember that when we met together two days ago I was still trying to understand why the US Government was so keenly interested in AIS⁶. I was not fully convinced by the explanation Howard provided. I believe what he said is true, but it may not be the only truth. People on the outside often make the mistake of assuming that the Government operates as some kind of homogeneous organism with one set of objectives and motives, but that is almost never the case. Even within the White House and the Cabinet, there are factional rivalries or people pursuing their own personal agendas. Perhaps, Howard himself does not know the entire truth about AIS⁶. Going through the reports yesterday, I was deeply impressed by the quality and scope of work you have been doing. Clearly many people might think the program is worth buying or even stealing, if necessary. But I still could not understand why it had evoked such high level attention in Washington. I might have understood it sooner, but I was initially misled into assuming their interest was related to intelligence, security and defense.

“Gradually another possibility occurred to me. It came from the report on global economic growth potentials. I checked the dates. The first contact by Thompson arrived about a week after Vinay sent copies of the report to the White House, Treasury, Congress, the Fed and some other agencies. I assume you have all read the report and can recall its conclusions. It delineates strategies by which, according to AIS⁶, any country can double or triple or even quadruple its rate of economic growth. It documents the potential for achieving growth rates of 20 percent or even 30 percent, which is totally contrary to current economic doctrine and conventional wisdom. When I read these conclusions in the Executive Summary, I was highly skeptical. The world has never seen growth rates of this order before. But when I read the report, I found the strategy presented for eradicating poverty in America and elevating all our poor to middle class levels or above was brilliant. I could understand why the Government would value the report and the software that had developed it. Yet, I remained skeptical whether the current administration would adopt more than a handful of those strategies, since it they ran counter to current economic policies. But, in either case, that still did not explain why Uncle Sam might be so eager to prevent other countries from accessing AIS. Then I realized my mistake. I was responding to the report from a rational point of view, forgetting that the people making decisions in Washington might have other priorities. Blinded by power, out-dated doctrines, imagined security risks around every corner, the need to get re-elected every few years, pressure from special interest groups and many other factors make objective, rational analysis both impossible and irrelevant.

“So I then asked myself another question. Is there anyone who could possibly be opposed to successful implementation of the recommendations in this report? Two possibilities immediately came to mind. First, there might be special interest groups that would lose something of their power and privileged status. Reviewing the reports more carefully, I noticed that both the latest environmental and economic reports advocate energy and environmental policies that are directly at variance with two of the most powerful corporate lobbying groups in America—Big Oil and the automotive industry. This observation may not seem surprising, but think about it. The Administration maintains that aggressive measures to slow or reverse climate change would require immense economic sacrifices by the American people. But according to AIS⁶, rapid economic growth and progressive environmental policies are fully compatible. That is good news for the American people, but not for the oil industry. Then I recalled that like the President, Thompson was a Texan. Was it possible, I asked myself, that Thompson is acting on direct instructions from the White House or on behalf of the oil lobby? That might explain his aggressive insistence and absolute refusal to take ‘no’ for an answer and his readiness to find an alternative buyer for AIS⁶, willing to pay almost any price to get it off the market.”

Bill's analysis made sense to Dan. It was consistent with his gut feeling about Thompson. If Thompson were really reporting to two bosses, Howard at State and another at the White House or corporate interests, then the situation was even more complex and potentially more threatening than he had thought. Another minor fact supported this view. Dan was very sure that at least two and possibly three different parties had broken into his apartment at one time or another. The first he could detect only because of the fortuitous deposit of mud specks on the carpet. The second was the blatant ransacking the previous week. In addition, he had a strong feeling that there had been earlier entries dating back many months, which he was unable to substantiate. Multiple entries by different people looking for the same thing, each with their own characteristic style of working.

Meanwhile, Bill was exploring a second and quite different explanation. There could well be those in government who took the AIS⁶ economic report quite seriously and were eager to adopt at least some portions of it. That would explain why the government wanted access, but not why it was eager to deny access to others. Bill argued that there could well be those in the Administration who were very anxious to prevent other countries from adopting the AIS⁶ strategies because it could threaten America's economic pre-eminence in the world. Ray interrupted Bill to challenge this view. He pointed out that faster growth by other countries was fully compatible with faster growth in America as well. "It is in our own national, economic interests that Europe, Russia, Brazil, India and China also grow at faster rates," Ray argued.

"Yes and no," Bill replied. "Yes, it is in our own economic interests. But some may argue it is not in our national interests as well. You are thinking like an economist Ray. You have to remember these people are politicians, first and foremost, and everything else only in the measure in which it supports their political objectives. To an economist, absolute standard of living is the ultimate measure to success. To a politician, power is the only standard and power is always relative. We can both be fabulously wealthy, but we cannot both be inordinately powerful. After WWII, the USA leveraged its tremendous economic power to acquire military superiority and political dominance. Since the end of the Cold War that position has become unrivaled and unassailable. But if AIS⁶'s growth strategies are widely adopted by other countries, America's economic, political and military dominance will inevitably decline. The world might be far more peaceful, prosperous and secure than ever before, but we would no longer be its unchallenged leaders. Many in America would welcome the opportunity to resign as democracy's watchdog and the world's policeman, a position thrust upon us after the war. But there are also those who would look at it as a catastrophe. That is the strange logic behind America's anomalous position regarding the UN. That is why the greatest embodiment and proponent of democracy the world has ever known is presently the greatest obstacle to the emergence of truly democratic global institutions. Not everyone in Washington agrees with this view, nor perhaps everyone in the Administration, but it is the prevailing faith and conventional wisdom of this Government. Since the end of the Cold War, the USA has been the sole superpower in the world. We have had a magnificent opportunity to use that power to build a better and safer world for all. Instead, our government has taken advantage of the collapse of the USSR to reinforce the power system that emerged at the end of the Second World War. Instead of eliminating nuclear weapons from the face of the earth, the Administration reversed ten years of progress on nuclear disarmament and pressed for production of a new category of nukes, providing incentives for others to do likewise. Instead of liberalizing and democratizing the UN, it has tried to leverage its military, political and economic power to make everyone toe our line. Every attempt by an ally to raise the question of nuclear weapons in the UN has resulted in powerful behind the scenes threats of economic exclusion that have compelled them to remain silent. In addition, there is also a less widely known thrust to make the US the dominant military power in outer space"

Dan found the logic behind Bill's second explanation as cogent as the first. They now had three separate and equally plausible reasons for the government's interest in taking control of AIS. It seemed likely that at least two of these reasons, possibly even all three, were valid. Bill's insight and analytic capacity were quite impressive. Although they might be no closer to a solution, simply understanding what they were up against and why made it easier to focus on concrete steps to protect themselves. Apart from that, Dan was pleasantly surprised by Bill's grasp of political and social processes.

"I can understand the desire of our leaders to keep us on top," Dan replied. "I am proud of being an American and the idea of America declining the way Rome and Greece and Europe have declined before it, is depressing, especially since it is not necessary. But the real irony is not that. The real irony is that America is better placed to lead the next phase of global expansion than any other country. We have the opportunity to generate unprecedented prosperity for ourselves and the world by leading the movement, rather than resisting it. The strongest are always in a position to benefit most by any new development. It is a universal principle that I learned from *The Book*. We see it all the time. When the Industrial Revolution began, the technology was available to all the countries of Europe, but it was commercially-minded, agriculturally prosperous Britain that was in the best position to take advantage of it. When computer was discovered, the technology was available to all countries, but no country has benefited by computerization as much as the USA. It is the same with the Internet, the credit card, space satellites, and biotechnology. I could never abide by those who resent the progress of the most advanced countries under the banner of equality and justice. I always thought those words were just a cover for jealousy and a sense of inferiority. Equality of opportunity? Yes! Equality of rights? Excellent! But equality of accomplishment depends on one's aspirations, effort, capacities and values. We could never achieve that type of equality without killing the human spirit by confining it to a cookie cutter mold. Nowhere in Nature do we find equality. What we do find is infinite variety expressing infinite uniqueness. America has been the world's evolutionary pioneer for the past one hundred fifty years. I would hate to think that at this crucial juncture we might drift from leaders of global evolution to leaders of the reactionary forces."

Bill brought the discussion back to MAI's immediate predicament. "I am convinced—and all Dan and Ray have said only reinforce that conviction—that we know at least some of the things that are motivating Howard and others in Washington. I am pretty sure Howard did not have anything to do with the break-ins at MAI or Dan's place. He sounded genuinely surprised and even concerned when I informed him. I've been a lawyer long enough to know when a witness is bluffing by the tone of his voice. There must be someone else or perhaps more than one party that is involved. We cannot even be sure that the US Government has been the only one bugging MAI. If Thompson is also reporting to some other powerful group outside of government, they could well be directly monitoring your activities. Yesterday I examined the responses you have received to AIS's work. Two things stand out. First, is the intense resentment expressed by fundamentalist groups to the study on terrorism. Clearly the Christian and Jewish groups resented the parallels AIS⁶ drew between the various sects of fundamentalism. They both responded in a similar vein. We need to explore that in more detail. It could be possible that one or more Christian groups that have seen the report are exerting pressure on the US Government to contain and suppress AIS⁶. That may not be the only factor, but it could be one. I doubt that the Jewish fundamentalists have much influence in Washington, but they certainly do in Israel. The fact that three Israeli professors just happened to be passing through Silicon Valley soon after the publication of that report is worth noting. Ray could not remember the dates, so I checked it out with Anya and they correspond."

Anya recalled how surprised she was by some of the questions which the Israeli's had raised during their visit. Although they said they just happened to be passing through the area and wanted to learn more about AIS⁶, their probing questions suggested that they had already studied the program in great detail. She gave several examples that strongly supported Bill's supposition.

"I am especially bothered by the break-ins," Bill continued. "Whoever broke into MAI seemed to know exactly what he was looking for and where to look. He took Anya's hard drive and the files on culture, which included the material on fundamentalism and terrorism, but nothing else. How was that possible, unless he had inside information? That raises another possibility which I do not know if you have considered—an inside job. Suppose there was no break-in at all, but only a theft which was made to look like a break-in. As Anya explained to me, she normally kept those papers locked up where no one else could have access without her permission. It was by sheer carelessness that she happened to have left them out that one night. She also explained that no one—not even Tony Preston—had access to the files on her hard drive which contain the essential code for AIS⁶. She said it would require days for an expert to decode those files, so it could only be done by removing the hard drive from the office. So I tried pursuing the possibility that it was done by an insider. Who could it be? I asked Ray to introduce me to key staff so I could get to know them and speak with them about their association with MAI: How they came? Why they came? etc. Then I asked to see their employment files. The only senior staff member who seemed at all uncomfortable with my questions was Tony."

"You think Tony may be a spy," Anya asked in surprise. "Everyone knows I don't like him, but I never thought anything like that. He is very bright and competent, just too assertive."

"Could Tony have possibly known about the book?" Bill asked. "Someone must have disclosed its existence. Both Dan and Anya conceded that on occasion they may have been careless about mentioning it in Tony's presence. That might explain the break-ins at Dan's place, but it still doesn't explain how Thompson had known about *The Book*, unless he found out about it through the phone taps. Perhaps you have made enough references to *The Book* during phone conversations which made him realize its central importance to AIS. Or perhaps the monitoring of MAI is not confined to phone and email. Perhaps the office premises are being monitored as well." Dan realized that none of them had even considered that possibility up until then. For all their worldly exposure, they were dismally ignorant when it came to some basic issues that might prove vital to their future security. He was feeling better about Bill with each passing hour of their association. He hoped the feeling was mutual.

Bill resumed. "I had nothing to go on except a gut feeling, but I felt Tony was hiding something, so I did a little research about him on the net. His credentials in AI certainly seem to be first rate. But I noticed that most of his early papers before joining MAI in 2001 had been published in collaboration with other scientists working in Israeli institutions, either government or university or businesses. These observations are only circumstantial, not proof, but it may help stimulate your own thinking."

They all sat in silence for the next ten minutes pondering what they had heard. The meeting had already lasted for more than three hours. Anya seemed suddenly very anxious to return to the office. They all were. They agreed to meet again the following day to discuss the matter further. When they arrived back at the office, Vinay asked Lauren whether she had seen Tony that morning. She replied he had not come in. Anya immediately headed down the hall to Tony's office and entered using a passkey. Anya took a quick

look around and said, “He has taken everything. All his critical files. The hard drive. Everything. They are all gone.”

Bill shook his head in disappointment. The smile of self-satisfaction Ray had seen on his face the night before was completely gone. “I guess the suspicions behind my questions to Tony yesterday were a little too obvious. We may have just lost an invaluable source of information.”

69. Homeland Security

They convened again two days later at a different hotel just down the road. Bill introduced Luis Gavoche, a forty-four year old Frenchman who had spent fifteen years with the French Intelligence Services on electronic surveillance and security before being attracted by the more lucrative opportunities in the burgeoning corporate sector. He founded Oxford Security in 2000. Bill had already briefed Luis and three of his associates the previous day regarding the known security issues MAI had been facing. They toured MAI facilities and ran a battery of simple tests to identify any obvious security breaches. Luis spent two hours with Dan at his apartment listening to a description of the two break-ins and the two robbery attempts in his car. He had also asked his people to track down Tony Preston. They learned that Preston had already vacated his apartment, leaving behind several thousand dollars in furnishings without a forwarding address or prior notification to the property management company.

Luis began with a brief introduction about his company and the impressive list of clients whose needs they were servicing. His own expertise specifically related to security for electronic systems, but Oxford was staffed to provide the full gamut of corporate security capabilities. Although his team would take at least a week to prepare a comprehensive set of recommendations, based on the presently available information he said that MAI faced what was termed a level three security problem, which necessitated urgent corrective measures. Apart from the known theft of company property, Oxford had already detected evidence of systematic monitoring of MAI phone and electronic communications, bugging of executive offices, security breaches to the main server and network, and inadequate measures to prevent forced entry. He then presented a first draft of a plan to enhance protection against forced entry, control access to inner offices, detect wire-taps, periodic audio scans to detect bugs planted on premises, enhanced security on PCs, internet services, email and mobile phones. He recommended a higher level security for the five partners to ensure their mobile calls and email could not be intercepted and suggested they consider similar security measures for their homes to prevent a repetition of what had happened twice at Dan's apartment. Luis made a convincing case that the threat of audio surveillance of their residences, if not physical intrusion, was indeed very real.

Then Luis came to what he considered the more difficult problem—protecting Dan from any further threat. “I am afraid this lies outside the expertise of Oxford. Short of hiring your own personal security guard, I would suggest you try to minimize routine predictable car travel, which means your daily drive to and from the office. Or travel to the office in a reliable limo service with a known driver. At the very least, I urge you to vary the timing and route of your commute. You'd be better off moving to an apartment closer to MAI, preferably just a block or two away, shifting to a nearby hotel for a while, or spending some nights sleeping at the office. Whatever you do, you have to break the predictable patterns that others can anticipate.”

Ray invited Dan to come live with him and his family for some time, but Dan immediately rejected the idea of possibly endangering Ray's family. Vinay also urged Dan to move in with him, but Dan rejected that option as well. Anya accused him of stubbornness and seemed deeply upset that he refused two options which would definitely reduce the risks. Finally Ray offered to pick him up every morning so they could travel together to the office. Dan reluctantly agreed just to assuage Anya's feelings.

None of the partners were pleased with the notion of instituting military level security. They all preferred a freestyle, trust-thy-neighbor approach, and were afraid that the adoption of these precautions might infect MAI with the kind of diseased mentality they were all anxious to escape. But there seemed to be no sensible alternative. Further accomplishment demanded first of all that they protect what they had already created. Recent events made it abundantly clear that they had not done a very good job of it thus far.

After Luis left, Dan said he wanted to continue the meeting through lunch to discuss some other issues. Since the second meeting with Thompson on August 11, they had all been so preoccupied trying to decipher the intentions of the government and devise ways to protect themselves, that they had had no time to focus on either running their core business or continuing essential research to address the limitations of AIS⁶. “We face a wide range of challenges and threats—political interference, forced entry and surveillance have only been added to the list of existing technological, commercial, financial and human resource challenges. We need to develop an organization capable of handling all of them simultaneously. So I requested Anya to submit our current situation to AIS⁶ for analysis.”

“According to AIS⁶ the company is back where we were last March - in Quadrant III. That's right,” Anya repeated. “Quadrant III. I was as surprised as you are.”

“That doesn't make sense,” Vinay remarked with a note of exasperation. “We have done everything possible to strengthen and professionalize our organization, just as AIS⁵ recommended, and we saw clearly

that it was working. Revenues doubled in the second quarter, profit tripled and we got three new clients within two months, including Auku. How can we be back at Quadrant III after all that effort?"

"You are forgetting one thing," Dan explained. "We are not the same company today that we were five months ago. We have increased our manpower by fifty percent, expanded our activities to handle four commercial projects simultaneously, and accelerated product development to launch AIS⁶ in record time. AIS is evaluating the current position of MAI today and its capacity for success in the current environment. We need to also remember that it is factoring in threats that we did not know about six months earlier."

That made sense, Ray thought to himself. He knew very well that growth was not a one time occurrence. It was a process. A company grows like a pyramid, expanding its base and raising its height simultaneously. Each time a company rises to a higher level, it has to grow horizontally to handle the larger volume of work and rise vertically to higher levels of efficiency and complexity.

"As for recommendations," Anya continued, "the list is much shorter this time. It focuses on two things—organization and money. Even though MAI has already made significant strides in developing and professionalizing its organization over the previous six months, according to AIS⁶, they are not sufficient."

"That's certainly true," Ray agreed. "We need only look back on how much our own work has suffered during that past month."

"But circumstances last month were extraordinary," Vinay insisted, "You cannot expect any organization to handle the extraordinary in a routine manner."

Dan disagreed. "That is exactly what we need to do. We need to put in place an organization that is capable of handling extraordinary circumstances far more effectively than other companies in a similar position. An extraordinary organization is precisely what we require given the company's high growth targets, the unique nature of AIS⁶ and the challenge of sustaining its rapid evolution."

"I believe our highest priority has to be strengthening the senior management team so that we can more effectively handle the increasing scope and complexity of work," Dan said

"What do you have in mind?" Vinay asked innocently.

"During the past three weeks we have been moving in uncharted waters where none of the four of us have expertise or firsthand experience. In this short period Bill has amply demonstrated how much his knowledge and experience can strengthen MAI's capacity to meet the new types of challenges it is confronting. The four of us are all technocrats. We have run large technical projects, but never had to manage large commercial business operations while also developing ideas and products. So, if the three of you agree—rather I should say, the four of you, because Bill would have to agree as well—I would like see if we can tempt Bill to join us on a full-time basis as COO."

Bill was surprised and deeply flattered by Dan's offer, especially considering how short a time they had known each other. He had never even thought about giving up his lucrative law practice for a corporate position and he was not sure he was ready to do it now. But if he were ever going to take on a job working for others, this was the precisely the kind of job he would want. He was rapidly coming to believe that MAI was an extraordinary company with an extraordinary product and an unlimited growth potential. He was thrilled by the idea of being part of it and making it happen. If he turned them down now, he may never get another opportunity of this magnitude. It was evident from the expressions on his partners' faces, that this was the first time Dan was discussing the proposal with them. Before he could even consider it, he needed to know how Ray, Anya and Vinay felt about the proposal. He studied each of their faces for a response. Then suddenly he felt like an awkward intruder on a private discussion and offered to leave the room so that the four of them could discuss the proposal among themselves. Dan said he would prefer Bill remained to hear what the other partners had to say.

Since the founding of MAI the four partners had taken most decisions collectively by consensus, though the other three acknowledged Dan's leadership and had insisted from the beginning that he be designated as CEO. Now he was proposing to bring in a newcomer at the number two management position. It certainly did represent an enormous vote of confidence for a person that Dan, Vinay and Anya had only known for a very short time. Ray was pleased by Dan's proposal, but he expected resistance or outright opposition from Vinay and Anya; Vinay because it would significantly dilute his authority and Anya because of her general distrust of new people, no doubt a hold-over from her Russian youth.

Vinay's natural inclination was to avoid confrontation. Ray could see that he was uncomfortable having to express himself in the presence of Bill. "No offense intended, Bill," Vinay said, "but my partner has placed me in the embarrassing position of having to express myself in your presence." Then turning to

Dan, he continued in a voice that could not conceal his irritation, “I agree with you that Bill has already demonstrated he can provide valuable advice to us about running our business, but why COO? The COO is one who would have direct operational responsibility for all two hundred plus MAI employees. I don’t even know whether Bill has ever managed other people before. Though I have often encouraged you to act without even bothering to consult me, this is one time I would have preferred some advance notice, Dan.”

“Perhaps you think you should be appointed COO, Vinay,” Dan replied.

The question was so direct and abrupt that it startled Vinay. “That’s not fair, Dan,” he snapped back. “I have never thought of it or asked for it.”

“Why not? May be you should,” Dan responded calmly and patiently.

“I have always thought I could make the best contribution being out in the market place with customers rather than managing the back office,” Vinay explained.

“So have I, Vinay. That is why I did not propose your name instead of Bill. And I have always thought that Anya could make the biggest contribution running product development as she is doing now and that Ray is the best possible head of research we could ever find. So who is left?”

Suddenly Vinay thought Dan’s proposal seemed much less arbitrary and impulsive than it had when he first voiced it a few minutes earlier. “I agree with that,” Vinay frankly acknowledged.

Dan turned next to Anya. Where frankness was asked for, Vinay might be too diffident to express himself freely, but Anya was far more likely to be so brutally direct that she risked undermining any future relationship with Bill. Dan knew that but he felt it was essential they all understand each other

“Bill knows nothing about AIS, AI, or software development—the three critical parameters of the work we do at MAI,” Anya began. “Is it possible to be COO of this company without expertise in any of these areas? On the other hand, Bill helped us raise capital twice at crucial moments. He arranged for the presentations at the UN and news coverage by the New York Times analysis at short notice. He has provided the first fully cogent explanation of the factors motivating Thompson and Howard. He recognized the need to upgrade security and brought in Oxford. All these are valuable contributions in crucial areas where none of us has expertise. Also, coming from a business family, like Vinay, I can see that Bill brings valuable business, legal and financial experience that we will certainly need as we grow. As long we are clear about who will be responsible for what, I have no objection to bringing Bill on board.”

Ray added his consent and the entire issue was settled in less than twenty minutes.

Having obtained approval from his partners, Dan turned to Bill, “Now it’s up to you, Bill. You know what we want and why. Of course, we do not expect your answer until you know our proposal. But we would like to know whether you are even willing to give serious consideration to the possibility. I know it’s a very big decision and that we have sprung it on you very suddenly. I suggest you take some time and think it over. If you are willing to entertain the possibility, we can talk specifics.”

Bill was blushing mildly as he replied. “Well, my first response is to say I am deeply pleased by your vote of confidence in me, especially coming so spontaneously without time for reflection. So I would like to also give you a spontaneous response. Yes, I would very much like to consider your proposal. Of course, I cannot take a final decision without consulting my family, but I can tell you that I am genuinely interested in the possibility.”

That issue settled, Anya turned the discussion back to AIS⁶’s report. “According to AIS we need to substantially expand our capital base.”

“But our cash position is better now than it has ever been in the past,” Vinay protested.

“Perhaps, but AIS seems to have other considerations in mind. It cited the following principle:

All accomplishment is founded on strength. No stable achievement is possible that exceeds the strength of the foundation. No lasting achievement is possible without the strength to protect itself against reactions and attacks. Strength is power to change the environment and resist the pressure for change coming from the environment. In modern society, the foremost source of that strength is money.

“According to AIS⁶ MAI needs more capital, much more,” Dan added. “It does not say we need more capital to support operations or even for investment. According to this principle, money is a source of social power, power to combat and counter the growing pressure and resistance generated by the program. I believe we should seek to establish a minimum reserve of five hundred million dollars as a social buoy to

protect it from being attacked as illegitimate, dismissed as unprofessional or subjected to irresistible pressures.”

“Five hundred million dollars?” Ray exclaimed, “That’s fifty times MAI’s entire revenues for 2005! How in the world could we ever find that much money without selling the whole company? No company of our size can grow rapidly enough to generate that much money from internal operations.”

Vinay added, “Given the encouraging reports from the Lempe and Auku teams, we might be able to generate hundred million dollars or more from our existing contracts this year. If we can quickly add more contracts like the one with Auku, we might be able to generate another two hundred million dollars or more in the first half of 2007. That would get us half way to AIS’s target. For the rest, we will have to look to other sources.”

Dan then distributed a note proposing a re-division of the company’s shares as follows:

Anya, Dan, Ray & Vinay – 15,000 shares each	60,000
Lauren & Greg – 2,500 shares each	5000
Bill	10,000
Employee pool	<u>25,000</u>
Total	100,000

“You’ll notice I have not stipulated a price for your shares, Bill,” Dan explained. “You are more qualified and experienced to value the company than we are. I’d prefer to let you arrive at a price that you think is fair and come back to us with an offer and terms—whatever you think is fair and affordable.”

Bill could not find any words to express his amazement at Dan’s proposal. He had never been involved in a business transaction where the seller asked the buyer to decide on the price and terms he considered fair. Either Dan had an extremely high level of confidence in Bill’s fairness and integrity or he was being incredibly naïve. Bill wanted to believe it was the former and he did believe it. It imposed on him a tremendous obligation to arrive at a price that truly reflected the company’s value. He could see that working at MAI was not going to be easy.

70. Law of Multiplication

Dan slept late on Saturday and rose with a sense of freshness he had not felt in many months. He had decided to spend the day quietly at home, recovering from the long harrowing weeks of tension, taking some time to read and meditate on recent events and the future course of action. He had thought it might take days to recover his energy and was surprised how very good he felt already. After a leisurely breakfast, he looked forward to working on a problem that had been bothering him for months, and which he sensed was central to the evolution of AIS. It was the phenomenon of *self-multiplication*.

Dan had been raised by an affectionate mother in a hard-working, middle class family. His father and uncles had spent most of their lives struggling for survival in a world of scarcity and deprivation. Though Dan and his two sisters had never experienced material want; family elders had frequently reminded them of the iron law of scarcity. According to that law, there was never as much of anything in the world as people seemed to need or want. Scarcity was certainly the law of life two hundred years ago when Adam Smith and Thomas Malthus founded the dismal science of economics. Deprivation was real enough during the time of his grandfather's struggle for Irish freedom and when his father and uncles arrived in the USA during the Great Depression. But the idea that scarcity was the fundamental law of life seemed less true to Dan with each passing year. If the science of economics were being founded today, Dan was sure it would be based on a very different law.

Dan had been raised to believe in growth, but not multiplication. According to the traditional laws of economics, population, production, cities, money, revenues, profits and personal incomes grew, they did not multiply. But all around him Dan found evidence that this was simply not the case, or no longer the case. Everywhere he saw evidence of another phenomenon, the law of self-multiplication. Stated simply, this law says that everything in the world multiplies to the maximum extent possible and that at one point along the way it acquires a capacity for self-multiplication.

Population is a clear instance. Ten thousand years ago, at the time before agriculture was invented, the entire world was inhabited by about ten million people. By the time of the Roman Empire eight thousand years later, it had grown to one hundred million people—it took eight thousand years for the population to reach one hundred million. By 1650 it had grown to five hundred million. Then it doubled over the next 150 years to cross one billion. It doubled again in a mere eighty years to two billion in 1930, and tripled again in the following sixty to six billion. Malthus had been so concerned about the negative implications of population growth that he and everyone else failed to see the deeper significance of its self-multiplication. Population was multiplying with increasing rapidity because human society was also acquiring the capacity to multiply other things, especially food and healthcare, with even greater rapidity. Otherwise the whole population explosion would never have taken place. Thirty years ago India and China were condemned to eternal poverty because of their huge populations. Today they are being heralded as the next superpowers for the very same reason. In fact, India and China today represent roughly the same proportion of total world population as they did 2000 years ago. Population which was considered a severe liability is now perceived to be a great asset. Europe is rushing to unite the people of a fragmented continent to match in size America, which has always benefited from a relatively large single market.

At first Dan had regarded population as something of an anomaly. Now he understood that what was true of population was true of many things. Gutenberg had developed the first printing press in Europe in 1545. In the following decades, printing had spread like a new fashion throughout the continent. By 1600 there were 1700 presses and more than twenty million volumes in print. Henry Ford taught America how to multiply cars—from ten thousand annually in 1907 to a million a year by 1927. Today we are doing the same with TVs, cell phones, cameras, computers, video games, iPods and countless other things.

In just a few decades the world had become so used to mass production and distribution of products that it was ready to accept this as the natural state of things. But the same phenomenon was equally true of non-material things—of the proliferation of religions and churches, the continuous multiplication of academic disciplines and information, the spread of schools and education. In 1870 the USA awarded just ten thousand bachelors degrees and just one new PhD. By 1970 it was awarding more than 1.5 million bachelors degrees and more than thirty thousand PhDs a year. What happened to education in America during that hundred years has been happening in countries around the world ever since.

Multiplication was an undeniable fact of human social existence. But the truth lay beyond that in the phenomenon of *self-multiplication*. Multiplication is the capacity of the society to rapidly proliferate any type of activity. Self-multiplication is the capacity of any activity to rapidly proliferate *itself*. Multiplication involves increasing velocity of growth. Self-multiplication results in increasing acceleration of that velocity to reach exponential rates. The truth of self-multiplication became an undeniable fact of life for millions only

after the advent of the World Wide Web. From its origin in 1991, the web grew to include a thousand sites by 1994. The number crossed ten thousand the following year, a million in 1997, ten million in the millennium year and was approaching one hundred million in 2006. The velocity of its growth continues to accelerate. Both in terms of numbers and speed, this is true self-multiplication. Encyclopedia Britannica, which was founded two hundred forty years ago, contains about one hundred thousand articles in English. In a mere six years, Wikipedia grew to contain more than eight million articles in two hundred and fifty different languages, including two million in English. Such instances abound.

These examples were fascinating to contemplate, but the one that is most important and most difficult for people to grasp was the multiplication and self-multiplication of money. Early forms of money included rare artifacts such as beads and shells, precious commodities such as tobacco, and coins of precious or ordinary metal that came in all sizes and descriptions. But the process began to accelerate when people discovered how to fashion non-material, symbolic forms of money such as the written receipt issued by the Pharaoh for each bushel of corn deposited in a government warehouse for self-keeping, or by English goldsmiths for precious metals deposited for safekeeping by their wealthy clients. From there, it was a short step to bills of exchange, promissory notes, paper bank notes and government issued paper, checks, credit cards, government and corporate bonds, stocks, and myriad other forms of financial instruments that constitute an increasing portion of the world's wealth today. In spite of the abundant evidence all around us, people continue to think of money as if it were a scarce commodity. In fact, there has never before been such a superabundance of money in the world. According to a recent study by McKinsey the world's total financial assets multiplied ten-fold during the past twenty-five years and now exceeds one hundred forty trillion dollars.

Dan believed that this phenomenon had profound implications for the future of AIS. Everything he had learned from *The Book* indicated that an infinite multiplication of wealth was possible for those who knew the process. But as long as one regarded money as something inherently scarce and limited, the very notion of self-multiplication and infinite wealth were impossible to conceive or concede. But if, in fact, money was already multiplying rapidly, then the idea of elevating its growth to the level of self-multiplication was not only theoretically conceivable but also practically achievable. Everything depended on acquiring knowledge of what *The Book* referred to as *the process*.

71. Rendezvous

Just then the door bell rang. Dan wondered who it could be at noon on a Saturday. He got up and opened the door. Lauren was standing there in blue jeans and a white knit blouse holding a paper bag in one hand. She saw the surprise in his eyes as he tried to recall whether he had forgotten something he was supposed to remember. She gazed back at him curiously, enjoying his slight sense of discomfort, wondering what he was going to do or say. “Well?” she said.

He smiled and stepped back motioning for her to come in. She approached him, stood on tip toes and kissed him on both cheeks in her habitual manner and then held her face just twelve inches from his own and looked into his eyes with a beaming mischievous smile. “Am I interrupting anything particular?” she asked.

“Nothing special,” he replied. “I just discovered the formula for multiplying the world’s wealth and I was on the point of solving the riddle of the universe.”

“Good, it sounds like I came just in time” she replied. “I’m not much interested in the wealth part, but the mysteries of the universe are one of my favorite subjects—especially the mystery of romance. I don’t suppose you have stumbled upon any great insights into romance, have you?” she said with a whimsical glance. “Anyway, don’t let me stand in the way. I’ll just remain as a silent witness. You can ignore me.”

“As if you were someone who is so easily ignored,” he said laughing gently.

She put down the bag on the kitchen counter, walked up to him again and kissed him on the lips. Then in a casual tone she suddenly shifted the subject, “I brought some lunch. Hope you are hungry.”

“I only finished breakfast at 10 am,” he replied.

“Well, I am hungry enough for both of us. But I think you better eat something, because we have a long journey ahead of us and you won’t have another chance to eat for hours.”

“Journey?” he replied. “I don’t recall anything about a journey.”

“Of course not. That’s because I haven’t told you about it yet. But journey it is. We have to leave here before 1:00 pm. So do try to eat something.” She did not look at him, but he could see a smile on the corner of her mouth as she unpacked the bag and placed the contents on the table.”

“And when do I get to know where this journey leads to,” he asked in amusement.

“Why, when we get to the destination, naturally” she replied with a straight face. “Honestly, Dan, for an AI expert, sometimes you ask the silliest questions.” Then she burst out laughing. Her playful mood was contagious. It occurred to him as they ate that joy is capable of self-multiplication as well, and Lauren seemed to instinctively know the formula.

They left his apartment a little after 1:00 pm carrying a few bottles of mineral water and some fresh fruit in a small backpack. Lauren had insisted he put on his hiking boots. They drove up into the hills above Kensington and parked along Grizzly Peak Boulevard, then climbed a trail into Tilden Park and turned East toward Berkeley. Lauren talked non-stop as they walked, pointing out beautiful flowers, graceful Cypress trees, a deer hiding in the bushes, the chirping of the birds. She spoke of her parents, growing up in an upper middle class section of Montreal, her adventures during a three month trek across Europe with a girlfriend after college, a disappointing love affair with the captain of the high school ice hockey team, her favorite songs, books, poets and novelists. By the end of two hours, Dan knew more about her life and thoughts than he had learned over the past three years. She was a strange blend of innocence, seriousness, and carefree playfulness, of delicate softness that seemed almost fragile and a resilient, self-reliant maturity that seemed almost too advanced for someone of her age. Dan had always been fascinated by mysteries and Lauren appeared to him as an intriguing enigma. He liked her company, her voice, her face, her values, her humor and laughter—he liked everything about her. She lacked Anya’s striking appearance, but Lauren was more irresistibly feminine. Her soft shapely form teased the eye and lured the hand, and her unselfconscious modesty only aggravated the attraction.

They sat down beside a small stream and drank from its cool refreshing waters, then lay back on the grass in the afternoon sun. Then something happened which Lauren had never experienced before. Dan began to talk as she had in a natural, ambling fashion leaping from one subject to another. The scene before him reminded him of a summer he had spent with his family near their ancestral home in County Donegal, Ireland. Dan had never seen such beautiful countryside or inhaled air so clean and fresh. He spoke of his mother, a soft-spoken English teacher from the Bronx, shy but intelligent, with a keen insight into people and a love of literature that she had passed on to her son. He related extraordinary tales of his famous

grandfather, a big boisterous man whom he had never met, bursting with energy and humor when he wasn't fighting mad or too drunk. He narrated hilarious stories of his father, his four uncles and twenty-eight cousins growing up as one big Irish Catholic family in Brooklyn. She marveled at how different his life had been from her own very proper French Catholic upbringing in a small nuclear family, which seemed isolated and lonely by comparison. No wonder Dan was so quiet, she thought, he had been surrounded by people his whole life and could only find solitude within himself.

Dan's childhood hero was Edmond Dantes, the sailor transformed into the Count of Monte Cristo. Edmond had been a happy outgoing youth, but dire circumstance had imposed a heavy burden of suffering on him. With the help of his mentor, Abbe Faria, Edmond had leveraged the power of that suffering to mold his own personality into something far greater, wiser and stronger than the youthful sailor he had been. He became a disciplined man capable of the greatest accomplishment. "I always admired him for the inner strength that enabled him to survive those years in isolated confinement and accomplish against incredible odds. He was essentially a good-hearted man with great strength of character, but with one major defect. In his bitterness, he allowed his knowledge and his power to be used for revenge against those who had betrayed him, a pursuit that nearly robbed him of his humanity. He would have become the perfect man if he had directed all his accomplishments toward some higher and nobler purpose," he explained.

"And that's what you seek to become," Lauren whispered as she gazed into the sky.

Dan turned toward her and shook his head. "I have no illusions like that. Edmond possessed enormous strength and energy. The only thing we have in common is that we were both extremely lucky. He was fortunate to meet the wise and good Abbe Faria who gave him a marvelous education while he was in prison. I was extremely lucky to find *The Book*, which offers all the knowledge I could ever dream of acquiring. That's where the similarity ends."

"I believe that Edmond lost the beautiful Mercedes, the fisher girl, to his rival, because she could not remain faithful to him while he was in prison. But he ended up with a magnificent princess, instead, who finally melted his heart," she said smiling merrily. "He ended up one of the wealthiest men in the world, he accomplished his mission, saved his humanity and he got the girl too! Sounds like a near perfect ending." Again she laughed merrily.

"Edmond's greatest strength was that he knew how to wait," Dan replied enigmatically. Now it was his turn to laugh.

Lauren leaned over, looked into his eyes and asked in a direct frontal attack on his reticence, "What exactly are you afraid of?"

"Lots of things," he replied as if he did not understand what she was alluding to. "Disappearing pages, robbers at traffic signals, break-ins, stolen hard drives, government officials who threaten to slap export controls on AIS, running out of cash to fund a growing company, losing key employees who are hired away for twice the salary, ..."

"And that's all? You don't include me on that list?"

"Well, I should have included being kidnapped in broad daylight in Tilden Park by a mysterious young woman with a hidden agenda. But not you, Lauren, though I do include myself. I'm afraid of myself as well."

"Afraid of what?" she asked leaning closer, but just beyond physical contact.

"Afraid that I am capable of totally losing myself in a pool of deep, alluring brown eyes and a warm happy expansive young heart."

Approaching inches closer, "Is that such a bad thing?"

"No, it's a very wonderful thing, but the question is whether it is the right choice at the present moment."

"Who says you have to choose?" she persisted. "Why does it have to be a choice of one thing or the other?"

Shaking his head and wishing he could do something to reduce the intensity of the moment, he replied "Perhaps, it is the way I am constituted. I have the feeling of standing at a cross-road. Looking in one direction I see stretched out in front of me something I have wanted all my life and never found, something so deeply appealing that if I ever attain it, the fire of all my other aspirations might be quenched and extinguished. In the other direction, I see a beam of light at the top of distant mountain, like a hope

beckoning me to climb. The beam is real, the distance is far, and the goal is at best an arduous uncertain endeavor. My body, my nerves, my heart all tell me to choose the first. But there is a quiet, lone voice inside that says otherwise. So I stand here like an idiot with beauty and paradise standing before me, knowing full well that the problem is with me. I'm too selfish. I don't have the energy and the aspiration for both, the perfect fulfillment of the person I am and at the same time to become what I believe I should become."

Lauren understood that Dan had just frankly confessed to her the central dilemma of his life, something she very much doubted he had ever shared with a second person. He was an ordinary man with all the ordinary longings that everyone has but with one extraordinary strand of unselfish aspiration to accomplish something more. He refused to let himself go and live normally, because he was conserving every last drop of energy and determination to transcend his own narrow, selfish interests. She longed to close the gap so that the natural man and the idealist could unite, but she did not know how or did not have that power. She leaned forward, looked into his eyes and kissed him warmly on the lips, then leaned back and said in a cheerful voice, "That was a surprisingly lucid and quite beautiful way of expressing yourself, and you managed to compliment me so handsomely in the process that it is hard to feel offended."

Then glancing down at her watch and noticing it was already past four, she exclaimed and jumped to her feet. "Up, quick. We are late."

"Late for what?" he asked wondering whether her sudden haste arose from an eagerness to change an embarrassing subject or from some actual rendezvous at a destination yet to be revealed. "It won't be dark for at least three more hours."

Without answering, she extended her hand to help him rise from the ground and pulled him back toward the path traveling further East past Berkeley. To amuse him and distract him from too many questions, she told him about all the famous film heroines who had been the models for her youth. It was a long list that included Ingrid Bergman as Ilsa Lund in *Casablanca*, Audrey Hepburn as the princess in *Roman Holiday*, Jane Seymour as Marguerite St. Just in *The Scarlet Pimpernel*, and Keira Knightley as Guinevere in *King Arthur*. There was something poignant about all her choices. Her heroines confronted conflict and challenges, some of them insurmountable. Romance for her was an adventure with battles to be won against formidable opposition, not some secure, comfortable state of unchanging bliss. She laughed and cried alternately as she explained the predicaments of each of her alter-egos.

The sun was cresting the hills in the West on its descent into the Pacific when they finally reached the top of a trail that headed down into a cove of trees and a narrow brook below. She grabbed his hand and pulled him forward. In the distance he thought he heard the murmur of voices in the woods. As they descended the trail, he saw a cluster of people sitting under some trees with blankets spread on the ground. A moment later he recognized Vinay's rich melodious voice break out in boisterous laughter and then Anya's laugh in reply. Then he recognized Katia by her side; Ray, Rana, their two daughters; and Bill and someone he assumed must be Bill's wife Jamie. Understanding suddenly dawned on him as they came into view and Lauren virtually pulled him the rest of the way to the blankets where a full course meal had been set out to celebrate his birthday—an event he had remembered only for an instant when he awoke in the morning and then had filed away in self-forgetfulness where it belonged.

Anya was the first to embrace him and whisper Happy Birthday in his ear. Then she stepped back and looked in his eyes to read his expression. He only smiled. Turning to embrace Lauren, she noticed the glowing look on Lauren's face as they exchanged glances, just long enough to reveal what Anya sought to discern. Birthday greetings were followed by Russian caviar and champagne toasts, Anya's borscht, Ray's barbecued chicken and steaks, Rana's Bangalore curry, three different desserts and peals of laughter that rang long into the night. Occasionally their eyes met for an instant from opposite sides of the picnic blanket and a silent message floated amidst the chatter and flurry of the celebration, something too intimate even for thought.

A little past midnight, Ray dropped Lauren and Dan back at her car on Grizzly Peak Boulevard. During the fifteen minute drive back to Dan's apartment, neither of them spoke, but there was a subtle sense of closeness combined with undefined expectation. When Lauren pulled up in front of the building, Dan leaned over, placed one hand on her cheek, kissed her softly and smiled warmly into her eyes. As he got out of the car, he turned back and added, "If you are really interested in enigmas, I still have a few to grapple with and would welcome your help anytime."

As she drove away, Lauren sighed deeply. Hesitantly she began to breathe again. So much had happened since that morning. She now knew him much better than she had when she knocked on his door in the morning and she liked him even more for all that she had learned. He had invited her for the journey, but

she was not sure she could live at those altitudes. She'd go anywhere on the planet for that man, she thought to herself, but she was not quite sure he actually lived on this planet.

By the time the party ended, Katia was lying fast asleep on a blanket under an oak tree. Anya went over to wake her, but Vinay prevented her. He lifted Katia gently and carried her in his arms down the long trail to his car. Katia's head rested on his shoulder and she seemed unaware of the movement. When they reached the car, he placed her lying down in the back seat. As he drove down the hill, he turned to Anya and said, "Well, are you fully satisfied with how things turned out?"

Anya smiled at him shyly, like a child whose secret intentions were suddenly exposed. The surprise party had been her idea and it had gone off exactly as she had planned. It had been an exercise in mathematical precision and feminine intuition. She had conceived the idea a month earlier and silently orchestrated events according to her plan. When Dan proposed attending a conference in San Diego that weekend, she had adeptly come up with a reason for him to send Jean in his place. All that had been relatively easy. Lauren had been more difficult. Lauren was easy-going and unassuming by nature. Anya knew she was projecting Lauren into a role that did not come naturally. She also sensed, as only another woman could, that this was precisely what Lauren secretly longed for.

But the hardest part for Anya had been in dealing with her own ambiguous feelings. It had taken her years to decipher those feelings and she still was not sure she had read them rightly. From virtually the first moment she met them both in Fort Lauderdale, she had found herself suspended between two magnets of equal but very different intensity, and for long she felt herself pulled back and forth by whichever of them happened to be nearer at the moment. This was a very new experience for Anya who had never been fickle or flighty in her likings and had always been the center of gravity around which others revolved. It was not so much that she liked Vinay more than Dan. It was rather that she felt a connection from which she could not extricate herself, somewhat like a reflection in the mirror. Vinay had a calm sense of his own being and place that she envied and it made her search for a corresponding center in herself. Perhaps she was responding to his Indianness or the rich family culture, so very different from her own. She had the intensity of Russian emotions, but compared to Vinay it was like the surface foam on an ocean without stable basis. Vinay had ballast, deep roots, a solid foundation. They laughed a lot and fought a lot, for their tastes and inclinations were often miles apart, but she always felt more deeply grounded in his presence—even when his behavior provoked her!

Anya related to Lauren like the sister she had never had. Lauren had none of the angularity that came from too much strength or too much intellect, two forces Anya had constantly to combat in her effort to be a good human being and a woman. Lauren was all curves with no sharp edges. Bright, vivacious, sweet but without thorns. A perfect gift from a sister to a brother. Was that how she really felt about Dan? She had refrained from probing during the party. She knew Lauren would confide in her if she pressed, but she felt she had no right and would just have to wait and see how things played out. All this issued naturally from her own decision. Had she made a decision? But she had to laugh because other than an instinctive sense of its rightness, she was not even sure how Vinay would respond to her choice, and she wasn't really sure that she had any.

Vinay carried Katia into the house and up the stairs to her bedroom. Anya followed behind and gently undressed her and tucked her into bed. Vinay watched from the doorway for a moment, watched a maternal Anya which he rarely saw except at moments like this, then he went back down to the living room and sat on the couch. Anya followed a few minutes later and sat down next to him. She had a happy, contented look on her face which was pleasing to see. He stretched out his hand to hers and then gently pulled her toward him until his arm encircled her and her head rested against his shoulder as Katia's had done a few minutes earlier. Vinay felt fullness in the room and in his heart which made speech both difficult and unnecessary. She turned her head slightly so that she could gaze into his eyes and said, "While you were talking with Bill and his wife at the picnic, Dan took me aside this evening and we walked up the trail. He didn't directly say so, but I sensed he knew I had encouraged Lauren. When I tried to find out how he felt about her, he turned and looked me straight in the eyes with a broad smile and told me she was a wonderful person. His answer was so direct and yet I could not actually figure out what he meant. I wasn't sure whether he was sharing his feelings or telling me what he thought I wanted to hear. Men can be so infuriating at times." Then she laughed at her own comment and sat up so she could look at Vinay. "Then Dan suddenly changed the subject and started talking about the time when we decided to abandon MAIS. You know what he told me? He said that you had never been convinced that there was anything wrong with MAIS in the first place. Left to yourself, you probably would have continued with MAIS. He said you had given it up just to go along with the rest of us—but mainly you had done it for me." She stared intently into his eyes searching

for his response. She had expected him to be pleased by this confession which she made on his behalf, as if he would be glad to acknowledge the true feelings which had motivated him. She wanted to hear him admit it. Instead, his face became inscrutable. He glanced down at his watch, indicated it was getting late, rose from the couch, said good night and walked out the front door. Anya was confused, disappointed and deeply disturbed by his abrupt departure. She could not understand what she had done to chase him away when her intention had been just the opposite. Up until that last moment it had been a perfect day. Suddenly she felt like crying.

72. The Process

All creation is by and out of consciousness. Consciousness expresses as aspiration, aspiration as will, will as energy, energy as force, force as results. A manifestation of forms out of consciousness by the objectification of consciousness as form is the complete process of creation.

The Book

The rhythmic movement in Time and Space is the process.

Messages

It was almost 9:00 am when Dan finally awoke from a long and restful sleep. The cheerful, buoyant atmosphere of the previous night still lingered in his feelings. Just as he entered the kitchen to make coffee, there was a gentle knock at the door. He opened it and found Lauren holding a tray with two coffee cups in one hand and a bag of pastries in the other. He marveled at her perfect timing. Was it she who knew when he was getting up, he wondered, or was he who knew when she was arriving? "I'm in search of an enigma," she said smiling.

"Then you've come to the right place. We have plenty of them here," he replied as they settled on the couch. "I was just about to take up the greatest of them all when you knocked."

"Making coffee?" she jibbed.

"Don't laugh," he replied laughing, "the process of making a delicious cup of coffee has always appeared to me a sacred art which I have never been able to master. I manage the temperature and color alright, but no matter what beans I use, the right taste seems to always elude me. Even when I get it just right, I am unable to figure out what I did differently or how to reproduce the effect."

"Well, if that is the only knowledge you are trying to master, I think I can help," she replied. "My mother made an awesome cup of coffee. She knew just how each person liked it and could make the same coffee perfectly suit the taste of each. I believe some of the genes rubbed off on me, but I cannot explain how I do it."

"I gave coffee only as an example. It's the underlying process I am trying to figure out."

"What process?"

"Are you really sure you are up for a serious discussion so early on a Sunday morning?"

"If it's too early for you, I can come back later," she replied. "I have been ready for hours."

"The goal of AIS is to provide an instrument to magnify and multiply human accomplishment. In order to do that, obviously we need to understand the factors that determine human accomplishment. But that is not enough. We need to also understand the process that determines how those factors interact to produce results. It's like making coffee. You need all the right ingredients. The ingredients are the essential factors. But you also need the right recipe, the skill, and knowledge of precisely how to blend them to get the right result. People often think that buying the right ingredients is enough, but I can testify to the fact that something else is also needed, and I have never been able to quite figure out what it is. Your mom's talent shows it is not just the ingredients or the way they are mixed that is important. There is some other determinant. That some other thing is what *The Book* refers to as *the process*."

Dan proceeded to summarize what he had learned from *The Book* about the process. Science is preoccupied with processes, but there is no conception in any branch of science of one single unifying process that governs all acts of creation applicable at all levels from the human to the cosmic and in all fields from science and art to business and politics. Yet that was what *The Book* referred to—what it termed *the complete process of creation*. The idea was deeply intriguing but almost beyond comprehension. Even within the relatively narrow range of individual human activities, it was difficult to conceive that all human acts could in any way be reduced to a single process. What possible commonality of process lay behind the creation of a poem or song, the discovery of a new scientific law, the invention of a new technology or product, the design of a building, the founding of a company or a country, the development of an electoral campaign or a marketing strategy? And what did any of them have to do with the creation of a human relationship, the forging of a partnership, a friendship or an enmity, falling in love, forming a family? When you add to that the complications generated by trying to conceive of a common process applicable not only at the level of the individual, but also to the organization and the social collective as a whole, the problem becomes mind-boggling.

“The process *The Book* refers to is not merely a superficial description of sequences and interactions so common in science. Scientific processes explain the superficial how and why, but not the intrinsic how and why that actually determine the results. They tell us that oxygen and hydrogen combine to form water, but they cannot explain why water has the precise characteristics that it has; why for instance, it expands both when it freezes and when it evaporates. Political Science describes how presidents are elected, but which scientist, campaign manager or pollster can honestly claim to know why or how the electorate decides on a particular candidate? The science of management, if you can call it that, purportedly explains how businesses are created and made successful, but how many entrepreneurs find this knowledge sufficient to establish and grow a company successfully? Most of us, even the MBAs, struggle and learn by trial and error or fail before we learn. Management teaches about the elements and components of a business, but not the process that knits them all together and ultimately determines the result. Science describes the process by which teachers transfer knowledge to students, but not the inner psychological process that determines what and how much the child learns, how some teachers inspire their students for a life-time of achievement and failure.”

Dan struggled for a way to make the concept more real and personal to her. “We know how people meet, are attracted to one another and create bonds of relationship. But who can honestly claim to know the factors that determine the nature, type, intensity and permanency of human attractions? How many of us are even able to discriminate between a temporary infatuation and lasting compatibility, between lust at first sight and love at first sight, between the attachment born of familiarity and the emotional bonds that spring from deep-seated affection?” Lauren studied his face intently at that moment to discern whether the question was purely hypothetical or reflected a personal doubt in his own mind. “If we cannot even distinguish between them in most cases, where is the question of being able to understand or explain the underlying determining factors and the process?” Sometimes Dan seemed so aloof from relationship, Lauren was surprised at how deeply he had been thinking about it and how he had translated a high philosophical question into such personal terms. Was he really trying to decipher the process of love or was he merely trying to present an example which he thought she could best appreciate? Did he really think that personal relationships were the only thing of importance to her? She would prove to him that wasn’t the case.

“According to *The Book*, all these creative acts are governed by a process that can be known, a process that determines their outcome. At first I had considered it strictly as an interesting intellectual question, but recently I have come to perceive that the answer has immense practical implications and applications. Knowledge of that process would inevitably bring with it the power to determine the outcome, to create the most favorable outcome.”

“Do you really think that knowledge of the process of love could give one mastery over it?” she asked. “That would mean to have the power to create love at will. Most people find themselves only helpless victims of a process they know nothing about.”

“That’s true,” he replied, “but isn’t that also true of other creative acts? Did Shakespeare really understand how he had been inspired to write immortal sonnets and plays? Did Einstein really understand how he had discovered the formula for inter-conversion of matter and energy? We are in the process of creating a company and a new product, but how far can we claim to be conscious of the process that makes that accomplishment possible? We can describe the actions we are taking, no doubt. But can we really explain the process that determines whether we will succeed or fail? We failed with MAIS, but I still cannot clearly explain why. We succeeded in winning the NASA contract for PAIS. If we had failed there, it might have been the end of MAI. Thompson tried to threaten us into submission and it might have worked, but instead it backfired and he was eliminated. Howard tried a different tact and got a different result. You and Anya planned a surprise party yesterday. There were so many ways in which it might have gone wrong, but it didn’t. I might have been out when you came over, for example, and never have known about the whole affair. The smallest act rightly completed contains something of a mystery in it. I woke up late and went to make coffee. The very same instant, you arrived at the door with hot coffee in your hands. I might have still been sleeping and not heard the knock or you might have arrived after I had already finished drinking half of my own substandard brew. If there is a process of accomplishment, it has to explain the smallest act as well as the greatest.”

“But I still don’t understand what all this has to do with AIS⁶,” Lauren remarked.

“We set out with the objective of creating an AI system for human accomplishment. *The Book* has provided us with profound insights into the laws or principles governing human accomplishment. But so far it seems that all we have learned are still only pieces, aspects, elements, subroutines of a whole that we are not yet able to conceive or describe. It is as if we have collected all the parts of a complex machine, yet we lack a set of instructions explaining how to assemble these pieces into a working instrument; and we also

lack a unifying set of principles to explain how and why this complex assembly is able to perform the tasks assigned to it. If we can discover these missing elements, then AIS would possess the complete formula for unflinching accomplishment.”

Shaking her head so that her auburn hair fell gracefully over her shoulders, she said, “I just cannot imagine a single process that could apply to such a diverse range of phenomena. Maybe there could be such a process for success in business. Certainly enough authors claim to have discovered the secret. Perhaps some perceptive politician thinks he knows the formula for winning elections. Some cooks may claim to have mastered the art of making great coffee. As for romance, I’d be very suspicious of anyone who claimed to have discovered the mystery of love. But how could there possibly be a single process governing them all? What do they have in common?”

Dan was surprised that she had come precisely to the critical question. What do they have in common? That was what he had been unsuccessfully trying to discern for such a long time, until he finally understood what *The Book* was trying to tell him. Suddenly it became obvious. “For one thing, all of these acts are conscious acts of volition. All of them are instances in which human beings aspire to achieve some objective. So the first thing they have in common is consciousness, willed intention, and a direction or goal. The process *The Book* refers to is the process of converting consciousness into results. In each case, consciousness formulates itself as an intention or will, and that will releases energy for accomplishment. The energy is directed by the will to achieve a goal, which converts it into a force. From an early age, Bill Clinton says he aspired to become President of the USA. His conscious aspiration released his energy. Every choice he made in life was designed to help him fulfill that goal. I have a suspicion that if you analyze your mom’s secret for great coffee you will discover beyond the ingredients and the method she employs, she has one other secret, an attitude. When she makes a cup of coffee for someone, she really wants them to love it. She identifies with them in consciousness and gives them what they would most enjoy.”

“And you think love works the same way?” she asked with a mischievous smile.

He nodded. “Love is a seeking for fulfillment and completeness. It is a universal aspiration shared by all human beings. It need not necessarily be formulated as a thought or a conscious goal. It may act subconsciously, even when we are consciously pursuing other goals, but its power arises from the fact that it issues from the depths and center of our being.”

Lauren couldn’t help wondering what he was subconsciously seeking at that moment. Probing deeper both into the subject and into his own feelings, she asked, “Then why do you think so few people are successful in achieving it?”

“Perhaps, because so few people understand what love really is or qualify themselves to deserve it. People mainly seek to be loved or appreciated by others, not to love in the sense of truly giving themselves to others. Everyone is in search of the perfect person to fulfill them, but no one strives to become the perfect complement and mate to fulfill another. Mostly what passes for love is the ego seeking its own selfish aggrandizement. Considering how little people understand of the process, it is no wonder so few succeed in finding what they seek.”

Lauren found that a somewhat bitter assessment, but one she could not disagree with. What he said was true. People were not seeking to give themselves in love. They were seeking to be loved. She wondered about her own motives. She would have to think about that.

“According to *The Book*, there are other stages to the process. The energy that has been directed has to be organized to convert it into power and then expressed through skilled action. Take the creation of a nation, for instance. Our founding fathers had imbibed an ideal of freedom and felt an intense aspiration to achieve freedom in their lives. They set as a goal independence from colonial rule. They organized themselves politically, militarily and economically to oppose the British. Having won the war, they had to create an entirely new social organization to govern themselves as a free people. The American nation is the result of that creative process. MAI and AIS are results of a parallel process at the level of the company and the product. This much is clear to me, but *The Book* goes further.”

Dan explained how he had been struggling to apply this knowledge of the process to understand their work at MAI and ended up with far more questions than answers. By what process had the ceasefire in North Ireland been achieved? He had no idea! He knew what AIS¹ had recommended, but he had no idea what convinced or compelled the IRA to accept it over the rabid opposition of hard core members. By what process had Accor revived its dying industrial enterprise? Again, he knew what AIS had proposed, but what had prompted Dexter to seek AIS’s advice in the first place or compelled the board to finally accept and implement its recommendation? Even though he could recall each action that had been taken to solve the

problem, he was unable to explain the process that had improved the harmony and productivity of small team relationships at NASA and Citibank. He could not even explain why NASA had approved their proposal or why the astronauts had sided with them instead of against them. Where was the question of knowing the process by which the Cold War had ended or how America had become the leader of the world, when he did not even know the process that had enabled MAI to emerge from virtual bankruptcy onto a path of rapid growth? Knowing the facts, the actions, the events were very different from being able to explain the process and control the actual outcome. Even now, he struggled to conceive that there might be only one single answer to all of these questions.

“A few days ago, Ray, Vinay and I narrowly escaped what could have been a fatal car accident. We did it, but to this moment I have no idea how. I was sure we were going to crash into the bus head on. It’s my own experience, I have lived through it, but I am not conscious of how we managed to escape. I was too busy being frightened, bracing myself for impact or praying. Most of what we do is like that. Humanity is so involved in the act of living and developing that we have not been able to stand back or look deep enough to see how it is happening and why. Tiger Woods is arguably the best golfer that ever lived. He does absolutely incredible things on the course, but that does not mean he can explain how he does them or pass on that knowledge to others. His body knows, not necessarily his conscious mind. He who discovers the process can accomplish anything. He becomes a master of self-multiplication.” As he explained these ideas to her, his mind expanded in multiple dimensions, like hundreds of lines emanating from the same center, radiating in a spherical pattern from the here and now, and stretching outward in all directions toward infinity. Dan’s words tapered off into silence. Lauren suddenly became aware of a concentrated atmosphere in the room, an atmosphere at once deeply peaceful and intensely conscious. She closed her eyes and drifted off into meditation and completely lost track of the time.

When she opened her eyes, she found Dan sitting quietly at the other end of the couch gazing at her intently. Embarrassed, she spoke the first words that came into her mind. “You don’t have a very romantic notion of romance, do you?” she said.

“On the contrary, I think romance is the ultimate adventure and the greatest mystery,” he replied.

“And the idea that there is a perfect complement out there for every person? I suppose you regard that as the stuff of fairy tales.”

“No, I believe that too. But perhaps my notion of what that means may differ from the common view. I believe that each of us is searching for the perfect complement which will help us become complete. But I don’t regard it in static terms. I don’t think that a person is a fixed piece of a puzzle in search of another fixed piece to make it whole. I think we human beings are dynamic, growing, evolving. Our complement is the person who can help us evolve most rapidly to discover our own inner wholeness. According to *The Book*, every soul is an expression of the One and is fulfilled by universalizing itself to re-attain the wholeness of that One. In a sense the whole universe is a complement of each of us, since in the process of individualizing ourselves we push aside or deny so much of what is also part of our true self. Our perfect complement is a microcosm of that universe, who by presenting to us all that we are not, can help us overcome the limitations of being separate. And the process of interacting with our complement is the adventure of romance. For some it may come in the form of perfect harmony and compatibility, for others in the form of constant conflict and contradiction. It depends on what we need. Ultimately, all life is a romantic adventure and every person, circumstance and event life presents to us is a complement that comes to us for our growth. When we meet life with this attitude, it reveals its ultimate secret as the *marvel*.”

Realizing how far removed Dan’s view was from the conventional notions with which she had been raised in Montreal, she smiled broadly and shook her head as a gentle stream of laughter rose from her heart.

73. The Bargain

No one could have been more surprised than Bill was by Dan's proposals or the facility with which they had been accepted by his three partners, almost without discussion. The proposals he presented so informally without explanation, emphasis, persuasiveness—as if he were simply recommending new color schemes for the office walls—would profoundly affect the lives of all of them in multiple ways—materially, socially and psychologically. Before Bill could even begin to fathom his own response to the proposals, he was awestruck by the manner in which Dan had made them and the manner in which they were approved. He suddenly felt himself a very special person inducted into a very special place without understanding what precisely that place was or what he had done to merit entry. The invitation he received seemed to have little to do with investment or working arrangements. It was not merely a company he had been invited to join but a family, not a family but an intimate set of personal relationships which could best be described as a love affair with a dream.

Other than Ray, whom he had known for a decade and considered his closest friend, he knew very little of or about the other three, but what he did know was becoming a compelling attraction. He was unable to understand the exact nature of the relationships between them or how they functioned as a group, but from the glimpses he caught, it was like nothing he had ever experienced in the past. He wondered at the differences and complementary nature of their characteristics and capabilities. Although each of them had well-defined capacities in their own right, coming together they created a whole which was greater than the sum of its parts. Anya was the heart of the group, not in a superficial emotional sense, but in the sense that she represented a deeper emotional ideal which Bill could only describe as goodwill. Whatever her reactions or suspicions might be, her basic intention was to do good. Ray was the brain. His mind was not only brilliant. It was also creative, with the rare capacity to bridge the distance between concept and application. He was a social thinker. Vinay provided the dynamism of a born entrepreneur, a magnetic marketer, a pragmatic business man. And Dan, Bill was tempted to say he represented the soul or at least the spirit of the group or, perhaps, its vision of the future. Yet for all their capacities and strengths, they were all too human. They disagreed, quarreled, fought and forgot. When things became difficult, Vinay shouted, Anya threw tantrums, Ray sulked, and Dan withdrew. Dan loved football almost as much as philosophy. Vinay was fascinated by flashy cars and stylish clothes. Ray longed for nothing as much as a weekend picnic with Rana and the kids. Anya loved to be admired in a long evening gown. She lit up like a child when someone presented her with flowers and melted into tears at the sound of a love poem. But what astounded Bill more than any of their qualities, extraordinary or mundane, was the trust that bound them together. They never spoke of it, never demanded it of one another, but it seemed to extend like an invisible atmosphere embracing and enriching their relationship. That, more than all their ideas and capacities, seemed to be the secret of their success.

And, of course, there was *The Book*. They rarely referred to it, but seemed always to have it in mind. At first Bill thought that Dan was the only one who really believed in it, and the others just played along to humor him. But he soon realized that was not the case. Dan was the keeper of *The Book*. He was tasked with mining its wealth of knowledge and offering it to the team. Ray's job was to translate that abstract knowledge into the terms of life. Anya's was to transform the ideas it generated into a technology that produced results. Vinay's was to convert a technology into a marketable product. Perhaps they had gone through a proving period when one or all of them had questioned and doubted the relevance and efficacy of what *The Book* had to offer. But they were well past that stage when he met them. *The Book* was real. Its knowledge was real. They had seen it, applied it, benefited by it personally and professionally in their own lives. They believed in it.

As for himself, what he thought and felt about MAI, *The Book*, Dan's proposals - it took him only a moment to say 'yes', but it was many weeks before he could sort it out in his own mind. First, there was the money part. He knew a ten percent share in MAI must be worth ten million dollars or possibly even hundred million dollars. There was no way to fairly and accurately assess its value at this time. It was like trying to fairly value a piece of land in Southern California one week before the announcement that a new international airport was coming up directly adjacent to that property or valuing a pharmaceutical company one week before it discovered a cure for diabetes. Bill was convinced that MAI would be that property and would find that cure. It was only a question of time. And if these dreamers ever came even close to realizing their dream—they had already come so far so fast that it was difficult to dismiss the possibility—the value of the company would be priceless. It would be like comparing the entrepreneurial startup Microsoft at the time it first developed and licensed its DOS operating system in 1981 with the colossus we know today. He could see all that and believe it, but how was he to act? Dan had placed the whole burden of responsibility on him. He was well aware that he owed it to them to be as fair and generous in receiving their gift as they had been magnanimous and self-effacing offering it so nonchalantly and inconspicuously. It was a test and a challenge

that he gave to himself. He had enough money both from a family inheritance and savings to pay seven million of the ten million dollars without strain on his family and he knew he could easily borrow the rest. But hundred million dollars - where could he go for that, even if he knew the investment merited it? After much debate, he decided to accept his own higher figure as accurate. After consulting with his wife, Jamie, and telling her he was willing to risk everything they had but her security and their children's education, he put up the seven million and borrowed three million dollars more. Then he drafted an agreement whereby the rest would be purchased out of future dividends on the shares or would revert to the other four partners after three years. When he presented the agreement, Dan read it and accepted it without discussion. The rest of them signed without even reading it.

Then there was the issue of Bill's position at MAI and his existing law practice which had grown to the extent that he had to take on four junior partners. He decided to accept a full time position at MAI and to sell his law firm to his partners. In doing so he offered them the same proposal that Dan had offered to him. He left them to decide on the value of the firm and the terms for transfer of ownership. When he read their proposal, he found they had been extremely generous in their valuation and fair in their offer of terms.

Looking back a few months later, Bill was almost as surprised by his own behavior during those days as he was with that of his new partners. Those who knew him well had never accused him of being impulsive or carefree where practical matters were involved, especially money. Jamie's response to his proposal was also bewildering. She had always placed financial security at the top of her priority list and always cautioned him regarding any decision that might jeopardize what they had built up. Therefore, he normally would have anticipated major resistance to this proposal and an extremely unpleasant confrontation, the outcome of which he could not be at all sure of. She surprised him almost as much as he surprised himself. When she found he was clearly committed and determined to accept it without undue questions and precautions, she accepted almost on the same terms. He would have liked to believe it was out of her confidence in him and his professional judgment, but he had not seen that confidence in previous or subsequent transactions where the family's interests were at stake. For a brief interval, Bill ceased to act from character and Jamie seemed to follow his lead. For the first time in his life, he stopped trying to figure everything out. He stopped anticipating, calculating, bargaining for advantage. In fact, he stopped thinking and did what he somehow knew was right without analyzing the options. Perhaps Jamie did the same. After that he was never able to recreate the pristine sense of freedom, expansiveness and trust with which he acted at that moment. But he never regretted those actions, even for a moment.

74. Padding the Foundation

If a company maintains live linkages with the society that gave it birth, it will always be capable of original thinking, creative initiatives and endless expansion.

Messages XXI

Ego converts opportunity into failure.

Archives

Bill offered to work with Vinay to develop a plan for rapid expansion of MAI's business clientele. Fortunately, by this time they had developed a track record of success that they could leverage. AIS's biggest accomplishments to date had been the seven hundred percent improvement in the profitability of Accor's rayon operations, a company on the verge of closure in a dying industry, and the dramatic turnaround at Lempe, a company simply dying of exhaustion and ossification. Lempe was just completing its third quarter under the guidance of AIS. Based on recent orders, the company projected a net income of at least twenty-five million dollars for the year, which would represent an improvement of fifty million dollars over the previous year's performance.

The launching of AIS^{6b} added a new dimension to its repertoire of powerful tools. The new version included a new parameter which they referred to as social alignment and integration. The inspiration for this new factor came from the following passage which Dan found in one of the *Archives*:

A company is a child of the society in which it is born and is in alignment with that society at the moment of its birth. Like every individual, companies tend to acquire fixed attributes during their formative years. As the parent society evolves over time, a gap arises between this fixed corporate character and the changing attitudes and values of its social environment. Often the gap widens into a chasm or unbridgeable gulf and the company dies from self-inflicted asphyxia. Continuous realignment and integration of the company with its environment results in a continuous stream of creative ideas, new products, innovative strategies and non-stop growth. Perfection of the alignment will enable any company to maintain exponential rates of growth.

They had already seen the truth of this principle in the gradual decline of Lempe after the death of its founder. It was manifested in an onslaught of Japanese car imports in the late 1970s and through the 80s which devastated Detroit and nearly annihilated Chrysler. Five years after the onset of the Oil Crisis and the birth of the environmental movement, American car makers were still focused on size, prestige and built-in obsolescence, while the public had acquired a growing desire for quality, fuel efficiency and a product that would last. When development of the silicon chip made possible a breakthrough in computer technology, it was not IBM and Unisys that were first off the block to invent the personal computer. It was Commodore, Apple, Microsoft and a whole brood of start-up companies that were not mired in old concepts and past habits. It was they too—products of the hippy generation—who recognized and invented the new social culture of Silicon Valley founded on freedom and creativity to replace the old corporate paradigm based on structure and control. By the time the Internet and World Wide Web were born, firms such as Microsoft, Oracle, HP and Apple were already suffering from mental myopia and organizational ossification, so the lead shifted to companies like AOL, Compuserve and Dell who could define themselves freshly in terms of the emerging world of cyberspace. It was not Barnes & Noble or Waldenbooks that saw and responded to the opportunity to become a global bookseller, but start-up Amazon which had no vested interests in brick and mortar to defend. Five years after the birth of the web, it was not search engine leaders such as Yahoo, MSN and Excite, but late comer Google that saw the opportunity to marry search engine technology with personalized advertising to emerge as the global leader.

These examples illustrated only the most visible and external part of the process, but the challenge and disorder permeated much deeper down. It was not just products, technologies and market needs that evolve, the whole society was a moving glacier. Everything changed simultaneously and in proportion. One cannot change strategy without modifying structure. New structures will behave just like the old ones unless attitudes toward freedom and authority change as well. Attitudes depend on values. Most of the old Titanic companies sank due to their refusal to embrace new values, rather than their resistance to new technology. While freedom, initiative, innovation and achievement were replacing authority, discipline, conformity and prestige in society, older firms were shoring up the old corporate character or trying to repackage it in jeans and athletic shoes, but the body inside the clothes continued to age. Changing products is easy—like changing behavior. Changing character—individual or corporate—is a challenge few can rise to.

Time and again the same pattern repeats. Creativity emerges from the periphery, new stars emerge on the fringe and rapidly rise to the summit. It is not because they are more brilliant than those who currently dominate the field, but because they are more open and less fixed in their thinking and concepts, less arrogant and better attuned to listen rather than tell society what it wants, less burdened with the weight and momentum of past successes. Is this trend inevitable? History shows it is not, even though it remains the general rule. A handful of companies have maintained their dynamism through multiple transitions and social revolutions—Sears pioneered the mail order catalog, the money back guarantee and the suburban shopping mall before succumbing to Wal-Mart in the late 1980s. IBM migrated from the punch card to the computer in the 1950s and transitioned to the PC in the 1980s before finally dropping from the competition. DuPont started as a gun powder manufacturer two hundred years ago, migrated from warfare to industrial chemicals and then on to plastics. Bank of America pioneered the transition from a local retail bank to international credit card business.

A few make the transition once or several times, most falter or fail at the very first challenge and find each new achievement weighing it down more heavily and each new challenge more difficult to accommodate. A few, such as Ford and GM, lumber on for decades as towering giants, carried forward by the momentum of the past, ossifying more and more with the passing of the years, hollowing out from the inside but maintaining their external appearance of grandeur long after dynamism and genius have fled the nest. It's like dying of thirst surrounded by fresh water in the middle of the Mississippi or the Ganges, or suffocating due to lack of oxygen because you refuse to inhale. At a time when society is bubbling with energy, blossoming with fresh opportunities, booming with creativity, invention and initiative, when the whole world is waking up, aspiring and expanding on all sides, it takes a unique ability to fail; for aspiration releases energy, energy creates opportunity, and opportunity generates profit. But blindness seems to be a basic endowment of human nature which most corporations inherit from their leadership. It reminded them of an ancient tale of God Shiva who saw a poor devotee walking on the road repeating Shiva's name in prayer. Prodded to be generous by his consort, the Goddess Parvati, Shiva placed a bar of gold on the road right in the devotee's path. Just before reaching the gold, the devotee wondered what it is like to be a blind man and began walking with his eyes shut until after he had passed the gold bar without ever noticing it.

Too many leaders act just like the devotee. When all they have to do is remain open and flexible and alert for the next wave of change, they stick their heads underwater or into the sand and drown from what? Blindness and rigidity! You don't have to be a genius to survive and succeed in business, but you cannot afford to insist on what you know, what you like, what you prefer, or what worked in the past. Society is ruthless in demanding what it wants next and quickly forgets past services rendered. It is loyal only to itself and to those whose only allegiance is to society's needs rather than their own.

What is the secret of eternal life in business? That was the question they were seeking to answer. AIS⁶ showed them the way to revive and reinvigorate a dying company and fill it with renewed vitality. AIS^{6b} incorporated the means to re-align not only products, technology and marketing strategy, but also social perspectives, values, attitudes, organization and systems to keep pace with accelerating social dynamism. The task was challenging, the work could not be done at the level of the boardroom or the strategic planning department. It required stupendous labor involving minute adjustment of every policy, procedure, system and a corresponding new set of attitudes, values and skills at all levels. Few companies seem up to that effort, which is why so few survive the superficial style changes that are the external reflections of the deeper movements of social evolution. But a few of those that took the effort were handed a precious key, a divine draught, akin to the sacred *soma* wine discovered by the rishis of Vedic India, the wine of immortality.

Leaders who do not fall prey to premature ossification often succumb to an equally fatal malady by thoughtless imitation of every latest fashion or fad. Changing with the fashion is a surface movement. The real power of social change lies in movements in the depths. Among recent fads in business, mergers & acquisitions has been the most widespread, sustained and popular. It emerged as a global trend during the 1990s and reached a peak in 1999 fueled by gargantuan deals such as the one hundred eighty-three billion dollar acquisition of Mannesmann by Vodafone AirTouch, the ninety billion dollar acquisition of Warner-Lambert by Pfizer pharmaceuticals, followed by Exxon-Mobil, Citicorp-Travelers, SBC-Ameritech, Bell Atlantic-GTE, Worldcom-MCI and countless others. These megadeals were dwarfed just a year later when America Online purchased Time Warner for one hundred sixty-four billion dollars and Glaxo acquired SmithKline Beecham for seventy-six billion dollars. The trend continued at a lesser pace during the early years of this decade before suddenly heating up again in 2006, when a record \$2.5 trillion in mergers were expected to be completed.

Like most management trends, the impetus for the flurry of M&As was four parts fad and one part good business. The only ones who inevitably benefited were the investment bankers that earned upwards of

a hundred million dollars negotiating each of the big deals and the management consulting firms assigned to supervise and facilitate joining of the combinations. In 2005, investment bankers earned more than fifty billion dollars in fees, the largest portion coming from M&As. If companies were willing to pay hundreds of millions of dollars to investment bankers to help them effect an M&A, which more often than not turns out badly, then what should they be willing to pay for a formula that demonstrates the capacity to increase the profitability of the merged entity far beyond their most optimistic projections? So the second market segment they decided to focus on was M&As. AIS⁶ had achieved remarkable results during the first quarter of work on the Auku acquisition, leveraging the capabilities of its cultural reconciliation model to effect a very rapid and effective integration of the two companies. Now they had an even more powerful product to offer and a big success story in the making.

Many of these mergers involved huge multinationals functioning in cross-cultural environments. The rationale for these mergers varied from case to case: economies of scale, cross selling, tax advantages, synergies, diversification, vertical integration and supply chain management were frequently cited. According to numerous studies, upwards of 70 percent of large multinational M&As fail to achieve the strategic goals cited as justifications for the M&A. Since AOL's one hundred eighty-six billion dollar acquisition of Time Warner, its share value had declined by 71 percent. The thirty-six billion dollar merger of Chrysler by Daimler Benz became a well-publicized example. It was termed a merger, but in reality it was a takeover and misguided imposition of one culture and viewpoint on another. Within nine years the combined company had lost \$12.6 billion in market value before Chrysler was again put up for sale. The actual methodology applied to effect the merger is most often a clumsy and crude combination of disparate strategies, such as centralizing common corporate functions, imposition of one corporate or national culture on the other, downsizing of staff and management, restructuring to incorporate both existing structures under a new umbrella organization, and integration of financial systems. Although improved efficiency is almost always an anticipated benefit, in most cases efficiency of the combined business group falls well below the previous level achieved by either side before the merger: these companies created synergies at the level of lowest common denominator rather than at the level of peak performance.

According to *The Book*, in M&As as in life in general, the real source of problems and failure is ego. Given the right attitude, any merger could be transformed into higher revenues and higher profits. Given the wrong attitude, the best of opportunities is soon converted into disaster. MAI's approach was to offer potential clients an integrated package that included AIS⁴'s capacity to enhance organizational integration, AIS⁵'s unique approach to enhancing energy conversion of the new combined business entity, and AIS⁶'s expertise in cultural reconciliation and value implementation. And, finally, the alignment and integration of business and society. Added to these, AIS^{6b} incorporated far more sophisticated analytic tools for delving deep into the structure and functioning of the respective partners and realigning their operations at the ground level to release pent up energy and achieve operational efficiencies higher than that attained by either company before they came together.

In the following months they made presentations and submitted proposals to Unicredito, the Italian banking group which had just merged with HVB of Germany to form one of the largest banks in Europe; Aker Shipyards which had just taken over the French company that had built the Queen Mary II; Thermo Electron of NY which had just acquired Fisher Scientific for \$12.8 billion; General Dynamics which acquired Anteon for \$1.45 billion; the spin-off of Royal Philips Electronics semiconductor division for \$9.5 billion; the \$3 billion sale of Sensata by Texas Instruments to Bain Capital; Motorola's sale of its auto electronics business to Continental Tires for \$1 billion; the sale of Siemens' carrier business to Nokia for \$30 billion; the acquisition of Lucent Technologies by Alcatel for \$13.4 billion; AT&T's acquisition of BellSouth for \$72 billion; Google's acquisition of YouTube and a dozen others. In each case they proposed not only to facilitate and accelerate the merger but to achieve a targeted increase in net profit significantly higher than what had been cited as justification for the merger and to be paid strictly on a performance basis. In spite of an unexpected development that put Vinay out of commission for three weeks, during the next two months they were able to sign two confidential contracts that could prove extremely lucrative, provided AIS^{6b} could really deliver all that they promised it could.

One other market segment opened up on its own, offering promise of future potential. Nine months after Vinay's initial presentation to the Indian delegation in Washington, the Government of India approached MAI in relation to the proposed six billion dollars Indo-Pakistan-Iran gas pipeline that had been the subject of inconclusive negotiations between the three countries for nearly five years. India wanted the pipeline to obtain an assured supply of relatively inexpensive energy. Pakistan wanted the gas as well as the transit fees for piping gas to India, which could run as high as six hundred million dollars a year. Iran desperately wanted a market for the oilfield gas which was now going waste. And the US strongly opposed the deal because it perceived it would strengthen Iran's economy and influence in the region. After

negotiations had gone back and forth for years, India now proposed to Iran and Pakistan that the negotiations be jointly submitted to AIS⁶ to see if a final resolution of outstanding differences was possible. In a short span of time they had made significant progress in strengthening MAI's monetary foundation for continued growth.

75. Greatness

The individual and the universal complement one another. The universe expresses its infinite capacity for variety through the uniqueness of the individual. The individual transcends all limitation by identifying with the universal and discovering his essential oneness with all.

As the MAI team prepared to push AIS^{6b} into the marketplace, they were all uncomfortably aware of the fact that something central was still missing from the formulation. The Green Revolution could be explained, but not without C. Subramaniam, the man who master-minded the strategy. Chrysler's turnaround in the early 1980s could be reconstructed, but not without factoring in Lee Iacocca. It was possible to explain the end of the Cold War, but not without mentioning an extraordinary man like Mikhail Gorbachev. None of AIS's equations for accomplishment had incorporated any variables to reflect the role of an outstanding individual. Was the very notion of a formula for accomplishment an illusion? Are those who worship great individuals correct in attributing high achievement to unique attributes beyond the reach of ordinary people? How were they to account for the fact that behind every new social innovation there was a pioneering individual, behind every great political event a Napoleon or a Lincoln?

This dilemma was brought home one morning when Vinay stormed into Dan's office with a big smile on his face and pronounced in a loud cheerful voice, "Americans are magnificent! You people believe nothing is impossible. I watched the most inspiring movie last night, *Miracle*. It's a must see. It's based on a true story about the US Olympic Ice Hockey team that won the gold at Lake Placid in 1980. They beat the heavily favored Soviet team, one of the greatest amateur teams ever assembled, which had won four straight gold medals and gone undefeated in their last twenty games. I say amateurs, but in fact Soviets were actually professionals. Most of their team had been playing together for a decade. They even beat the NHL all-stars. By comparison, the US team was a bunch of youngsters recruited from colleges around the country who in the span of just six months had to learn to play together and form into a cohesive unit. When the US Olympic Committee went looking for a coach, they got turned down by two of their top picks because the job looked so hopeless. They finally turned to Herb Brooks, who had coached a national championship team at University of Minnesota. When the USOC interviewed Brooks they told him they were looking for a coach who could take the team as far as the quarterfinals, the top eight. Brooks replied that if he took the assignment, it would be with the objective of winning the gold. The idea sounded so far-fetched and fantastic to the USOC that they were reluctant to appoint a coach with such unrealistic ambitions. Six months later, the US team met the Soviets in an exhibition game and were walloped 10-3. Then in the semi-finals they came back to defeat the Soviets 4-3 and went on to beat Finland for the gold.

"All through the movie, I kept asking myself, what would AIS^{6b} have to say about this? Would it have been able to factor in the importance of a guy who never even played in the game? Until it could, I was sure we were still very far from having a perfect program. Let us face it, there is a reason that corporate CEOs like Iacocca and Jack Welch get paid so much money, get all the credit for the success of the companies they lead and take most of the blame when things go wrong. We have got to find a way to factor in the role of the leader, the role of human personality in accomplishment." Vinay headed toward the door, then paused, turned, smiled and added, "It's probably better you don't mention *Miracle* to Anya. She's still very much attached to mother Russia."

Dan needed no persuasion from Vinay. He was fully convinced Vinay was right. In every instance of high human accomplishment that they examined, they found one or a few individuals who took crucial actions that accounted for the success or prevented failure. In 1907—six years before the founding of the US Federal Reserve—the failure of the Knickerbocker Trust Company precipitated a major banking crisis that threatened the collapse of the entire financial system. Even the government seemed powerless to avert disaster. The US Treasury Secretary called on a private individual, J. P. Morgan, to salvage the system. Morgan applied his acumen, knowledge, and reputation to corral the New York banking community into backing a cooperative plan that saved the system. What the Fed could not do in 1929, one man accomplished during the Panic of 1907.

When panic again threatened to topple the US banking system in 1933, it was one man, Franklin D. Roosevelt, who literally saved the day. Since the Great Crash in October 1929, President Hoover, the Fed and teams of economists had been unable to find any way to stop the continuous economic decline. By the time FDR assumed the office of the President of the USA on March 4, 1933, over thirteen million workers had lost their jobs, more than ten thousand American banks had failed, and more than five billion dollars had been lost. In the preceding month, one hundred twenty million people had rushed to the banks to withdraw

their deposits before they, too, were lost. On March 3, in a single day, people had withdrawn more than three hundred million dollars from the system in a state of panic. It was clear that the nation's banking system was on the verge of collapse. A day after assuming office, FDR declared a national banking holiday, and a week later he addressed the nation on radio in the first of his famous 'fireside chats.' He explained the real cause of the banking crisis was a crisis of confidence, not of substance. He restored public confidence with his famous words, 'We have nothing to fear but fear itself.' He told the countless millions of frightened citizens who had withdrawn billions of dollars from the banks to turn around and return their hard-earned savings to the banks. And miracle of miracles, they did! When the banks reopened the next day, the lines of people waiting to withdraw their money did not form. The panic was stopped by one man's voice.

It's frightening to imagine the possible outcome of World War II were it not for Winston Churchill. After the Nazi war machine had conquered virtually all of mainland Europe, the tiny island of Britain seemed to be all that stood between Hitler and outright victory. After having refused to heed Churchill's warnings for years, in desperation the Tories chose him to become Prime Minister at the time when the situation appeared hopeless. Churchill's most significant asset seemed to be his utter inability to contemplate defeat. It was simply unacceptable to him! When France, Belgium and Netherlands collapsed under the onslaught of the German army in 1940, Britain was left virtually alone to fight the Axis powers. A month after he became Prime Minister, the Germans commenced the intense day-light bombing of England, prompting Churchill to pronounce those immortal words: "We shall never surrender..." Probably no one in Britain or anywhere else on earth could honestly say how Britain could stand up alone and survive the German bombardment, let alone win the war. Yet when Churchill spoke, few could doubt that he was absolutely determined to keep his word. He refused even to consider the possibility of defeat. His very presence calmed the fears of the nation and inspired the British people to incredible acts of fortitude and self-sacrifice.

Dan was now confronted with an apparently unsolvable dilemma. According to *The Book*, accomplishment at any level, on any scale and of any magnitude was possible for any individual who knew the formula and was willing to adhere to it in practice. This formula consisted of a set of universal principles; and a process that was valid for all creation of all types on any plane; regardless of whether it was the individual, the organization, the nation or the world community. An individual who knew and acted by the formula could rise to any level, and accomplish on a scale that exceeded anything ever achieved by a single individual in the past. An organization that knew and functioned by that formula could grow exponentially until it exceeded the achievements of any other organization, even the world's greatest. A nation that knew and lived by the process could abridge the progress of a century into a decade and outshine the highest social achievements of any other nation. These were the fundamental premises which *The Book* insisted upon. And that knowledge possessed one other unique attribute that distinguished it from all the knowledge thus far acquired by the human race. It could only create. It could only be positive. It was incapable of doing harm. This was the knowledge *The Book* offered to the world. This was the belief that motivated them to create AIS. Dan knew that their understanding was still very partial and incomplete. He knew that AIS was a work in progress, and some essential elements were yet to be incorporated. They were moving as quickly as they could. They were growing as fast as they could. But the entire edifice of AIS was built on the premise that accomplishment was the result of knowledge, not some unique attributes which only a rare few are born with or a lucky few can acquire. If that premise were incorrect, then AIS would fall short of its own standard and fail its own test.

Dan knew that Vinay was right. The first step that needed to be taken to unravel the enigma was to discover the precise role of the individual in social accomplishment. But that would be only the first step. They also needed to identify the characteristics that distinguished one person from another - the high achiever from the ordinary person, the average performer from the failure who struggled even to survive. Finally they would need to determine whether and by what means it was possible for a person to move from one stage or level of attainment to the next. They needed to discover the precise role of genetics, family background, early childhood, and later experience in qualifying a person for high accomplishment. Dan and the others knew, of course, that these factors were frequently cited as the root source of individual greatness, but they did not know whether these were essential conditions. Could a conscious knowledge of the formula have an equal or greater effect on individual performance than the right genes, family background, upbringing and experience? Could acquired knowledge, values and attitudes replace innate capacity? Could AIS⁷ replace a Herb Brooks or an Iacocca or a Jack Welch?

Dan spent weeks searching *The Book* and the *Archives* for a starting point, a loose thread that he could follow through the tightly woven fabric of life. He suddenly stumbled upon it early one morning as he was browsing through a chapter of *The Book* that he had read many times before:

The individual and the collective complement one another. The pioneering individual gives conscious expression to the subconscious aspiration and latent capacities of the collective. The collective imitates and multiplies the pioneer's accomplishments until they become a general endowment of the whole society.

According to Dan's reading of this principle, the pioneer is not unique. Or rather his uniqueness lies not in some rare individual characteristics, but rather in the fact that he is conscious of what the collective knows only subconsciously. He possesses a conscious knowledge that others do not yet have, but which is based on and derived from the cumulative experience of the collective. When others acquire that same knowledge, what at first appeared a unique and extraordinary achievement becomes commonplace.

This interpretation of the passage seemed to be consistent with what Dan had already learned and what many high achievers had themselves said. Julius Rosenwald took over at the helm of Sears Roebuck at the turn of the twentieth century and within twenty years converted a regional mail order house marketing spurious products to suspicious farmers into the largest retailer in the world. He insisted that the company market only reliable, quality products and pioneered Sears' famed money-back guarantee. Both these initiatives exhibited good sense and good values, but hardly qualified him as unique. In the 1920s he was succeeded by General Robert Wood who pioneered Sears' thrust into the suburban shopping malls, which enabled the company to keep growing right through the Great Depression, a period in which the overall department store business in the USA went down by 25 percent. Wood was a modest man who attributed his brilliant strategy to what he learned reading the US Statistical Abstracts, which published data showing the rapid growth of automobile ownership among middle class American households and the rapid migration of these families from urban centers to suburbia. Credit Wood with insight and good judgment, but the methodology he applied is now being practiced by tens of thousands of average MBAs.

Henry Ford's accomplishment was magnificent by any standards. He did not invent the automobile or the moving assembly line, but he did pioneer the adoption of mass production manufacturing techniques in the automotive industry. In 1903 he produced and sold 1745 cars. Between 1908 and 1927 he sold fifteen million. Starting out with a cash base of twenty eight thousand dollars, by 1927 his company's cash surplus was nearly seven hundred million dollars. There is much to appreciate. A product of the working class, Ford was the first to understand the common man's aspiration to own an automobile at a time when it was considered a luxury meant only for the rich. Credit his pragmatism in producing a simple car at a low price that was only available in black. Admire his initiative to double the wages of his workers so that they too could afford to buy his cars. But do not forget he was so paranoid and superstitious that, refusing to trust bankers, he kept all his hundreds of millions in an office safe!

Nothing that Dan knew about Bill Gates suggested to him that the richest man in the world was a million or a thousand or even ten percent smarter than many other bright technocrats whom he knew. He grew up at a time when technology was developing rapidly. He and his colleagues made some good business decisions—such as agreeing to a low price for the original MSDOS operating system so that IBM and other computer makers would be encouraged to adopt it rather than developing or adopting an alternative such as Apple's PRODOS, which was probably a better system, but which Steve Jobs decided not to license. Credit Bill Gates with ever good sense, by all means, but let us not convert it into hero worship.

Dee Hock was the man who pioneered the transformation of the BankAmericard into Visa International, a global behemoth with an annual turnover of four trillion dollars in credit transactions. Hock's autobiographical story of this remarkable achievement, *Birth of the Chaordic Age*, clearly reveals that among his most outstanding qualities were humility and faith in other people. Such modesty might be legitimately dismissed as just that, were it not so widely confirmed by other studies, such as Jim Collins' *Good to Great*, which found that the typical leader of the twenty-eight great companies they studied was "self-effacing, quiet, reserved, even shy—a paradoxical blend of personal humility and professional will." One study and a few anecdotes are not sufficient to prove *The Book's* premise, but Dan did find it striking that what *The Book's* author had intuitively perceived as the truth was confirmed by one of the most systematic studies of high performing companies undertaken in the USA.

Dan's purpose was not to reject or deny the existence of individual greatness. *The Book* did not deny the existence of geniuses, avatars or other individuals who exhibited apparently superhuman attributes in one aspect of their personality or their lives. Conceding such rare instances, one may still recognize that most instances of high accomplishment are not accomplished by people of this description. Rather they are achieved by individuals who have the ability to perceive that which has not yet been perceived by society as a whole and to give practical expression to that belief. Jean-Jacques Rousseau was one of the first modern European intellectuals to assert the inalienable rights of the individual, which became the ideological basis for the French Revolution. But the ideas he so eloquently gave expression to in the latter part of the

eighteenth century were rooted in a gradual evolution from the time of the Magna Carta, Martin Luther's ninety-five Theses, and England's Glorious Revolution of 1688. And his inspiring romantic idealism did not prevent him from being—as Paul Johnson documents—a vain, egotistical and quarrelsome man consumed by self-pity, a shrewd self-publicist who fathered five children by a mistress and promptly dispatched each of them to a foundling hospital shortly after their birth, where they most likely died of neglect. It would be tempting to dismiss Rousseau as an exception, were it not for the fact that Shelley, Marx, Tolstoy, Hemingway, Russell, Jean-Paul Sartre and Ibsen hardly appear any better when their lives are held up to close scrutiny free of sentimentalism or blind idolatry.

Society has been greatly served by its pioneers, but the tasks they performed are now repeated endlessly by millions of ordinary people. Perhaps the one PhD awarded in 1870 truly went to a man of genius—perhaps, but no one would seriously argue that the fifty thousand who were awarded that same degree last year are in some manner uniquely superior to the millions who chose a different course in life.

The foundation for AIS⁷ was the thesis that no matter how extraordinary those people were who rose to the summit of human accomplishment in the past, the qualities needed for highest accomplishment can be acquired today by many—the way education is acquired and the way the intricacies of quantum physics and nuclear weapons manufacture are now mastered—provided, the many have access to the requisite knowledge and provided they have the aspiration and will for that accomplishment. Was it possible to convert the higher knowledge offered by *The Book* into emotions and sensations that generate power? According to *The Book*, it was:

Impersonal knowledge can be converted into personal power.

It is not just mega companies that are run by ordinary men. Countries are too. At times when Dan got discouraged with the difficulty of this endeavor, he reminded himself of that. So there was hope for them all.

76. Peeling the Onion Skin

The human being is like an onion with so many successful layers of tissue from the surface to the core—manners, behavior, character, personality and individuality.

The Book

After Bill joined MAI full time, Dan was able to dedicate more time to studying *The Book*, the *Archives* and the *Messages* to comprehend the theoretical foundations for AIS⁷. The knowledge they gave was rich and penetrating, but he was finding it difficult to discover how to convert theory into an operational formula.

One evening as he was sitting in his office musing over a statement from *The Book* about the constitution of human personality, Anya walked quietly into his room and peered over his shoulder at the quotation he was reading. “Still trying to discover the mystery of human beings by reading an essay about it?” she asked. Dan nodded his head without turning around to look at her. “Well, I hate to say that you are wasting your time, but if your aim is to understand people, you’ll be far more successful if you study them, rather than studying mere abstract ideas. Human nature cannot be reduced to a mental formula.”

Dan turned around, studied her face to see if she was joking or serious, and then encouraged her by his expression to tell him more. She smiled and continued shyly, “You know, I think I understood more about the three of you the very first day we met than any of you have understood about me after we have been working together for years. I sized you all up the first day.” Her voice carried a childish but charming tone of pride as she spoke. Dan smiled to encourage her further. “Almost as soon as you sat down for breakfast that morning in Florida, I saw that you were an idealistic dreamer, a romantic in some ways like me, with a touch of the monk or ascetic and a lovely boyish sincerity. I could feel all that in a moment. I could sense the social visionary in Ray as well as the submissive husband, the loyal friend, a man with too little strength and too much courage to stay out of trouble, always biting off more than he could comfortably chew and later wondering how he landed in the soup. Vinay was a little more difficult. He was less transparent. I could not miss the confident, strong, aggressive exterior, but his capacity for childlike faith and his response to goodness surprised me when I discovered them later on. Oh, I could tell you a lot more that I know about you three, but a woman should never reveal all of her secrets.”

Anya paused and Dan was about to take up the thread, when she resumed in a more hesitant and humble tone of voice, “Of course, I must confess that I have been wrong at times—not only about Vinay—about all of you. I never expected you to make such a generous financial offer to Bill. I was also somewhat amazed when Ray agreed to the deal without even consulting Rana. I never thought I would see the day when he showed that much manhood and determination. It made me feel proud of him. Even Vinay surprised me. When you signed Bill’s contract and passed it to Vinay, he signed without even reading it. That was remarkable—totally out of character for him, at least what I know of his character.”

“Well, Anya,” Dan jokingly replied, “for all your profound insight, it sounds like you are not batting much better than fifty-fifty in your analysis of your partners. I think I had better rely on *The Book*.”

“Seriously, Dan, if you really want to understand people, you had better read literature. That’s what my Russian psychology professor told me, and I have found it to be true. Last weekend, Vinay took me to see the new version of *Pride and Prejudice*, the one with Keira Knightley. It’s only an abridged version of the story. If you really want to learn something about human personality, better watch the old BBC version which I saw on TV some years ago. It’s about five hours long but follows the book almost exactly. Or, best of all, read the book. Jane Austen was an absolute genius. To think that she wrote the first draft of it when she was only nineteen years old. It’s incredible. I believe you can discover at least 90 percent of all you need to know just from studying that one story.

“Oh, I know from your expression what you are thinking. A silly Russian romantic eloquently praising a two hundred year old fictitious love story in which the beautiful maiden finally wins the handsome wealthy prince. If you read carefully, you will discover there is much more to the story than that. You can ask Vinay, if you don’t believe me. I lectured him about it all the way home from the theater and he finally conceded that I was making real sense. The truth is, it’s a story about high accomplishment—only the accomplishment occurs in terms relevant to 1800 rather than to 2000. Elizabeth marries Darcy and rises into the highest level of English society outside the closed circle of royalty. Her sister Jane marries Darcy’s friend Bingley who is wealthy beyond measure, handsome and thoroughly pleasant. Even their younger

sister Lydia is saved from scandal and ruin when Wickham finally consents to marry her. All these achievements were unimaginable at the commencement of the story, but they were made possible by the behavior and character of the people involved and the times in which they lived.

“Take the statement from *The Book* that I just read on your computer. We can probably discover all these levels of the onion skin in the story. Manners come first. That’s the outermost superficial layer. In *Pride & Prejudice*, Wickham is a man of impeccable manners. He is not only handsome and charming, but so polite and deferential that he wins the hearts of all the young women, the respect of his fellow officers and the goodwill of the whole community. It turns out that beneath that fine exterior, the man is a perfect scoundrel, a playboy and a loafer. He squandered money on gambling and dissipation, borrowed from friends and never repaid them, almost ruined the life of Darcy’s fifteen year old sister by coaxing her to elope with him, and finally does elope with Lydia under the pretext of getting married, when in fact he never intended to marry her at all. And look where he ends up. He ends up as Lydia’s husband, Darcy’s brother-in-law, a respectable member of the community. His perfect manners enabled him to accomplish at least that much. Manners have power.

“Wickham reminds me of Razenko, one of my physics professors in Moscow. He was an ineffective teacher and inconclusive researcher. In fact, after he left the Institute, it was discovered that he had falsified research findings in order to support his bid for the Nobel Prize. He was both ineffective and dishonest but, do you know, he rose to international eminence. He became head of the International Association of Physicists and chaired their world congress in Moscow. He was appointed a visiting professor at three prominent American universities, he was elected to the Royal Society and the National Academy, chaired a UN committee on higher education, was elected head of an international peace organization, and even got elected to the Duma. Finally, he was appointed to the committee that selects the Nobel Laureates in Physics. How do you explain such a man rising so high? He is the same as Wickham. His manners are flawless. He is pleasant to everyone he meets. He never loses his temper. He remembers everyone’s name, even the names of the car drivers and security guards. He replies promptly to every letter, no matter whom it is from. He speaks very softly. He never speaks badly about others, but he cannot resist making cynical or sarcastic remarks now and then that reveal his true character. And you know what his most impressive characteristic is? It’s his mastery of the Russian language. Whatever he says, he expresses it eloquently. It may be the most mundane thought or idea, but when he speaks it, it sounds like profound wisdom. When he compliments someone, they feel flattered from head to foot. When he denounces an idea or a person, the righteousness in his words makes you feel he speaks on behalf of all that is true and good—yet I would not trust him for a moment, especially not around my daughter. He is notorious for collecting pretty young women around him and pursuing them on every possible occasion. But manners are so powerful, that man has risen to the highest level nationally and internationally in his field and even beyond.”

Just at that moment, Vinay walked into the room and appeared curious regarding the subject matter of Anya’s animated discourse. Dan briefly explained the problem he was working on and summarized Anya’s remarks on manners. Then Vinay said, “Anya, you mentioned Wickham as an example of good manners, but that is a negative example. What about Jane?”

“I do not think Jane should be placed on the same level as Wickham, even if she is positive and he is negative,” she replied. “Jane does have perfect manners, it is true. But that is not all. Her perfect manners reflect her positive thoughts and feelings, they do not conceal them. Wickham is a wolf disguised as a lamb. Jane is a good girl who behaves like a good girl. She is not very bright. You might even say she is foolishly naïve at times, but her intentions are as good as her actions. I think she is a good example of a person who has developed at least to the level of behavior. She lacks the strength of her sister Elizabeth. She seems to be incapable of positive action, but whatever she expresses is genuine. Jane’s ideal is to be perfectly good and proper, just the opposite of her mother’s vulgar, uncultured and blatantly self-seeking thoughts and actions. Jane tries to be perfect not only in what she says and does, but also in what she thinks and feels. All her energy seems to be absorbed and consumed in a supreme effort to be good, and she really succeeds in being so. She lacks intelligence, energy and strength, yet she accomplishes at a very high level. At a time when a girl with an annual income of only fifty pounds could not hope to marry well, she ends up married to a handsome man with four thousand pounds a year who is thoroughly devoted to her and is the best friend to her dearest sister’s husband. She could never dream of such an accomplishment and she could never want anything more than that. Her perfect behavior enables her to achieve it. Wickham’s manners are as good as Jane’s, but they are only sufficient to get him a minimum level of respectability. Jane’s genuine behavior enables her to rise sky high.”

Dan was lost in wonder at the depth of insight regarding human nature that Anya had derived from a simple love story. Vinay, who had been listening quietly in admiration, spoke and broke her narrative. “What you say reminds me of Edna Lambton. It explains why she is so effective in managing HR at MAI.

She has that same kind of genuine sincerity that expresses itself in all that she does. When she says something, people know she means it. When you tell her about a problem you have, you never get the feeling that her sympathetic manner is only a guise and that really she is condemning or laughing at you in her head. You feel her sympathy is genuine. That is why people confide in her so freely and feel relieved after speaking to her. She always seems to see the right side of people and bring it out—just like Jane in the story. Did you know that seven years ago Edna was just a receptionist somewhere earning thirty thousand dollars? Her boss was so impressed by her, he encouraged her to go back to school for a degree in HR. Now she is responsible for one hundred fifty people and her income is nearing six figures.

“When I was growing up,” Vinay continued, “my favorite book was a set of stories about a man named Inspector Sambu, physically small, unintelligent, meek, afraid of his own shadow. But he had a brilliant gift. Whenever the police brought him to the scene of a crime, invariably he would stumble on the right clue. He was a comic figure—almost a parody of Sherlock Holmes. He wasn’t actually an Inspector. He was the friend of an Inspector. On one occasion, his friend happened to bring him along to the scene of a burglary where a diamond ring had been lost and Sambu accidentally solved the case. I vaguely recall the story. He got hungry while waiting for his friend to complete the investigation, wandered into the kitchen of the house where the theft had occurred and picked up a piece of cake that was lying on the counter. He was just about to place it in his mouth when his friend entered. Immediately Sambu tried to conceal the cake behind his back. His friend got suspicious and demanded he reveal what was in his hands. Sambu held out the cake and the Inspector saw the missing diamond ring sticking out from one side. It had not been stolen at all. The woman had lost it while making the cake, but did not notice it was missing until the next morning. The Inspector got all the credit for solving the case so quickly. But in his own mind he began to attribute some hidden genius to his friend Sambu, so he kept bringing his friend along on difficult cases and every time Sambu came up with the solution in one way or another without really trying. I found each episode hilarious.

“Of course, it’s just a story, but it makes you think. Is there a quality of human nature that enables people to succeed even when they lack the normal capacities of other people? If so, it must come from a deeper layer than either manners or behavior. When I was growing up, my mother used to speak of real people with a similar capacity, but they were not comic figures. They were people who possess what is known as *rasi*, a special capacity for doing good to other people. If you refer a problem to a person like that, it gets solved. If you take advice from a person like that, things always turn out well, even if the advice you received was not the right course of action. I did not understand it at the time, but now I would say they are people of goodwill. Remember what you said, Dan, when Ray visited his family in Boston and broke his leg. You said it was the ill-will of his brother Neil that was responsible. Well, I am talking about the opposite phenomenon of people with goodwill. I would say it comes from the level of character.”

Anya picked up the thread: “Vinay, you remember in the movie how Elizabeth’s friend, Charlotte, tried to tell her that Darcy was interested in her and advised her not to be petulant and unreasonable. After all, Darcy was the one of the richest men in the country and good looking too. Elizabeth refused to listen to Charlotte at the time because she was provoked by Darcy’s sense of pride and she believed the lies Wickham spoke about him. Then after Charlotte’s marriage to Collins, she invites Elizabeth to visit her at Hunsford, where Collins is clergyman to Darcy’s aunt. While Elizabeth is there, Darcy unexpectedly comes to visit his aunt and ends up proposing to Elizabeth. Charlotte never planned it, but her goodwill for Elizabeth brings it about. I agree with Vinay. These are examples of some deeper layer of the onion skin, an expression of a person’s character.

“Darcy’s a man of character,” Anya continued. “He may have been proud, arrogant and even rude when he first proposed to Elizabeth, but when Elizabeth accused and abused him for those defects he had the honesty and sincerity to admit the truth to himself and he made the commitment to change. He realized he had been acting arrogantly and genuinely changed his attitude. He realized he been selfish all his life and decided to act for the sake of others, rather than himself. The effort he took to save Lydia from scandal by persuading Wickham to marry her and paying him to do it showed the extent to which Darcy was willing to go to reverse his earlier conduct. Whatever his faults, a man who is capable of a concerted action to change himself is certainly a person with a well-formed character.”

“Jane Austen brings out these distinctions brilliantly in the novel,” Vinay said, “but when I think about the people I know and the experiences I have every day, things are not so clear. It is fairly easy to identify points at which an absence of manners, behavior or character spoils work. I can think of many. I know sometimes when I lose my temper, I am only making things worse, but I do not have the self-control to hold myself back. Remember, Anya, when you blew up about Tony’s conduct a few weeks ago. I knew you were right and he was wrong, but look at the net result of your anger. Tony went away. We lost a

talented employee and we may never know how much information he took with him or who he is giving it to.”

“The only thing we lost was a spy, Vinay. Good riddance,” Anya retorted. “Talk about lack of manners, behavior and character. Tony lacked them all. The only thing he did have was intelligence and expertise. I wonder now why we ever hired him in the first place.”

“Ok, I concede that it is not a great example of what I mean, but it’s still true. I had the same problem a few months ago when I shouted at Lauren for something stupid she did. She is still moping about that incident.”

As Dan listened to Vinay, he realized it took strength of character to control oneself and not react. That strength is essential for higher accomplishment. “Imagine,” he said, “if Churchill had started abusing his party colleagues after becoming Prime Minister. He was fully justified in faulting their foolish and treacherous behavior toward him, which had enabled Hitler to arm Germany while Britain slept. But had he used his new position to seek revenge, he could never have won over the nation to support the war cause. He put his personal bitterness aside and acted for the greater good. That requires character. I wonder how many people are capable of it.”

“Then there is Gregory Thompson and Ed Howard,” he continued. “Thompson was rude, crude, pushy and unreliable. It’s a wonder he rose to such a high position in government. He did have strength and determination, I’ll grant that, and probably had a good track record of getting things done up to a point. But if a guy like that tried to run a company like MAI, he’d be out of business in thirty days—no clients, no subcontractors, no employees. Perhaps he had the raw energy and strength to work for someone else and blindly follow their instructions without questions or finesse, but real accomplishment in the world is beyond him. Howard’s a little better. I actually got the feeling that he was a competent executive, but he was in way over his head in our case. He was told he had to achieve a certain result, a result which we simply were unwilling to accept. It will be interesting to see what happens with him in future.”

“If you want an example of personality,” Anya continued, “I would say Elizabeth is your best bet. Character is something fixed. It represents structure. It consists of formed traits, repeating patterns, set ways of responding, a solid bedrock founded on established values and attitudes. But personality has to be something more than that, something even more developed, but less rigid, something with the strength given by a well-formed character, but with more freedom and flexibility of action. Darcy is reliable. Elizabeth is spontaneously creative. She is capable of freshness. While everyone tried to behave properly in the given social context, she alone looks beyond wealth and status and relates to Darcy as an equal. I think that’s what made him admire her so much. She is able to laugh at him, even taunt him, not out of rudeness or a desire to offend, but out of a freedom from social conditioning. Lydia is wild, uncultured and incapable of proper behavior. Elizabeth is capable but not limited by what is proper. And look what she accomplishes. She breaks through all the conventional social barriers that try to keep her down and rises to the highest level of society. She becomes a medium to unite the middle and upper classes of English society, thereby avoiding the necessity of a revolution French-style. She becomes a vanguard, a symbol and an instrument of peaceful social evolution. She creates a new possibility for herself and society.”

“Like us, you mean?” Vinay replied with a smile. “Aren’t we creating something totally new in the world? I guess that means that we must have some element of personality too, even if it is mixed with short tempers, impatience, and a few other things.”

Anya saw that Vinay was fishing for a compliment and refused the bait. “All this is fascinating, Dan, but how is it going to help us create AIS⁷?” Anya asked. “I love holding human nature up to the light and analyzing it threadbare, but I don’t see how this knowledge of the onion skin can be converted into a set of mathematical formulas and reduced to algorithms in the software. First of all, what we are talking about is purely subjective perception. Secondly, it’s all qualitative. None of this can be converted into quantitative measures. How are you going to compare the manners of Wickham with those of my Russian physics professor or the good rasi of Sambu and Charlotte? Unless we can do that, we are going to have to be satisfied with an incomplete product that leaves out the central mystery of human nature.”

Just then Bill walked into the room. “You will never guess who just called and wants to speak with us - Howard! His secretary says he has another proposal he wants to discuss.” Dan was intrigued by Bill’s news.

“By the way, have any of you seen Ray this morning?” Anya asked.

“I believe he is interviewing replacements for Tony Preston,” Bill replied.

“Then you gentlemen must excuse me,” Anya said. “I intend to ensure that this time around we look at the *person* and not merely his qualifications.”

Vinay and Bill followed Anya, leaving Dan alone to digest what they had discussed. According to *The Book* there was one more step beyond personality–individuality, he thought. And he suddenly realized he had absolutely no idea what that word actually meant. That was one remaining problem. Anya had raised an even bigger one. Even if they could decipher and distinguish the different layers of the onion skin, how could they possibly reduce them to measurable differences in quantity that fit in an overall formula for accomplishment?

77. Kim

The call with Howard was scheduled for a few days later. Howard's office proposed a videoconference instead of a personal meeting. The nominal explanation given was to spare them the loss of time involved in a trip back and forth across the country. But Bill interpreted it as an effort to assuage their concerns that Howard might be intending another effort to pressurize them into accepting government oversight or control of AIS⁶. Although MAI had on-site video conferencing facilities, Howard's office insisted that they speak from a secure government facility in San Francisco. That morning as Dan and Bill drove into the city, they speculated about the purpose of Howard's call. Perhaps he had gotten wind of their fresh negotiations with India, Pakistan and Iran on the gas pipeline deal and was hoping to persuade them to refuse the contract or maybe even to skew AIS's results in favor of US policy. Dan suggested facetiously that perhaps they had second thoughts about MAI's recommendations on nuclear disarmament and were calling back to tell them that they were right. Bill and Dan were both wrong, but as it turned out, Dan was closer to the truth than he realized.

The call began after they were asked to sign non-disclosure/confidentiality agreements with the US Government. Howard apologized for insisting that the call be conducted from a secure facility and reminded them that whatever was discussed must remain totally confidential. Bill had the impulse to remind him of his promise to make MAI's offices secure from eavesdropping, but refrained from expressing himself.

"Gentlemen, we have a serious issue before us and we could use your help, I mean the help of AIS⁶. Our intelligence indicates that North Korea is planning to test a nuclear weapon in the very near future. It could be just a matter of weeks from now. As you must know, in July the Koreans conducted seven missile tests, including one long range missile with the capacity to reach the West Coast - which fortunately failed - and five short range missiles. This act has significantly heightened tensions in the region and is causing real anxiety among our Japanese and South Korean allies. A month ago our satellites detected unusual activity at what we believe is a North Korean underground nuclear test site. Since then we have been closely monitoring their activities and all indications are that a test of some kind is under preparation. We know for a fact that they have the technology for the bomb and enough plutonium for at least ten explosions. What we do not know is their intentions. This is where we would like the assistance of AIS⁶."

Dan interrupted Howard at this point and asked, "Pardon me for asking, Ed, but the US Government must have hundreds of experts here, in Seoul and in Japan who have been studying North Korea for years and are in a far better position to advise the government that we could possibly be. None of us have studied this issue. None of us have ever been to South Korea. What possible expertise could we offer to compare with the resources already at your disposal?"

"Dan, it is not your expertise we are asking for. It is the expertise or rather the capabilities of AIS⁶. I have been doing some research since we met last month. I asked for an analysis of the reports submitted to us by MAI on a wide range of issues—issues such as Ireland, Indo-Pak relations, global warming, health care, global energy markets, bio-fuels, nuclear energy, outsourcing of jobs, employment, etc. I had them compare your findings and recommendations with those generated by our own experts on each of these topics. You may be pleased to hear that AIS's findings concurred with those of the best experts at our disposal 37 percent of the time and 95 percent of those findings on which we concur have been borne out to be correct, giving you a 35 percent strike rate."

"Ed, I'd hate to be just 35 percent right about North Korea just now," Dan replied.

"Please hear me out, Dan. I am not finished with the analysis yet. On 15 percent of the issues, subsequent events have proved AIS wrong, whereas our own experts were proved wrong on 43 percent of the issues. On another 29 percent, AIS differed from our experts and subsequent events have proved AIS was correct on 23 percent of those issues, at least as far as we know up until now. On the remaining 19 percent there have not yet been any subsequent developments to test out the validity of AIS's prognosis. In sum, that means that AIS has been proven correct on 58 out of 81 points of comparison, which is a 72 percent strike rate. By comparison, our own expert reports achieved only a 51 percent overall strike rate. We need to also keep in mind that much of the comparison was based on reports produced by earlier versions of AIS, where the strike rate was much lower. Findings generated by AIS⁵ and AIS⁶ had strike rates in the 79 to 84 percent range, which is excellent."

"Well, we certainly are pleased to hear about those results. It's a great vote of confidence for AIS. But I still am not sure how or whether we can be of help. You are closely monitoring the North Korean situation. What is it exactly you think we can do for you? You seem to already be apprised of their test preparations."

Howard continued, "It is not their nuclear tests or missile tests we are concerned about, though that is what our administration has been stating publicly. The real issue we are concerned about is the possibility that they will actually fire one or more of these weapons as an act of war. The North Koreans are terrified that we intend to invade them and I am afraid some of the political rhetoric coming from politicians here has not helped to calm those perceptions. In addition, the Japanese are afraid that they would be the first target of a nuclear attack, so we have it from reliable sources that they are seriously considering a preemptive strike against nuclear facilities in the North. That may seem unlikely, but mutual suspicions and dislike between Korea and Japan go back many centuries. It is not necessary for the Japanese to act in order for a crisis to precipitate. It is enough that the North Koreans believe they may act. Political sentiment in South Korea is another unknown. The government is strongly in favor of reconciliation, but the military leans toward preemptive action. Once the North Koreans launch an attack, it would be virtually impossible to protect Seoul from devastation. The only plausible defense according to standard military doctrine is to prevent an attack in the first place, preemptively.

"I am sure most of what I am telling you sounds like political drama or science fiction. But I can assure you that I would not be coming to you this morning if we did not think it might be something more than just that. Just because we have come to understand that nuclear weapons are unusable, does not mean that everyone shares our perception. To top it all off, our intelligence within North Korea is dismal. We have very little idea what is really going on politically. Our dilemma is that we are under great pressure to do something, either before the North Korean's act or instantaneously in response to it, but we have no idea what they will do if we take action, even if our action is only in the form of tighter economic sanction. Our real problem is Kim." At this point a picture of the North Korean leader, Kim Jong-il, appeared on their video screen. "Kim is an unknown factor, as is the whole government's decision making process in Pyongyang. We cannot even say positively that he is alive. It was months after his father died before we could positively confirm the fact. Even if he is alive, we cannot be sure whether he really controls the government or how fully or whether other political or military leaders really make the decisions and keep him as a figurehead for the people. We cannot afford to make a mistake. We cannot afford to underestimate their sense of desperation or the sincerity of their threats. These people—both the people and the leaders—are desperate. The people are desperate for economic advancement, the leaders to hold on to power in an increasingly precarious situation."

"In essence, we want AIS⁶ to provide us with insights into Kim Jong-il's mind, character and actions. Our own experts are almost equally divided between the doomsayers who think he will push the button any moment at the drop of a hat—perhaps his own hat at the moment he chooses to drop it—and the optimists who believe he will surrender without a fight if we push him hard enough and call his bluff. The stakes are much higher here than in Iraq. Although the direct risk to mainland USA is negligible, remember we have thirty seven thousand military personnel in South Korea just a few miles from the border and another thirty three thousand in Japan. The threat to South Korea and Japan is very real indeed, and there is nothing we can do to protect our citizens or their own in the event the doomsayers are right. That's why we need help from AIS⁶."

"Excuse me, Ed," Bill interjected. "A few minutes ago you said that in July North Korea tested seven missiles, but you only told us the outcome for six of them. What about the seventh?"

Howard nodded and replied, "That's right, Bill. I did not mention the seventh missile because we are not absolutely sure. But we believe that the seventh was a long range missile capable of reaching where you are sitting just now and our best guess is that the test was a success which the Korean's aborted one thousand miles off the West Coast. They may have been satisfied and wanted to avoid alerting us to their capabilities."

Howard then resumed his earlier track. "You may still be doubting my words, gentlemen. But there is more reason for concern. One is the report that widespread famine is likely to hit North Korea. Food availability for most of the population is at par with that in Somalia and Ethiopia. Up to five million people, who make up about 20 percent of the population in the North, could be threatened with starvation within the next twelve months. The South Korean Government strongly resists any increase in food aid while they are still under military threat from the North. Probably the greatest risk is not of one country attacking another but of miscalculation. Famines create unpredictable events like mass population movements which can lead to dangerous miscalculations. If the situation gets much worse, it could lead to a popular uprising in the North and a military coup. That may well be what the South Koreans are hoping for. Since there is no possible economic solution to the problem without external aid, Kim's government may well believe the only option is aggression, which will enable them to quell any local uprising. A disabling pre-emptive nuclear strike could enable their military to occupy a large portion of the South before it can recover from

the devastation. They may hope to obtain by force what they are unable to obtain by trade. I know it sounds fantastic, but at this point we cannot rule out any possibility.”

Dan thought for a few moments and then replied, “Ed, I need to explain something to you. All the reports we submitted to the US Government were based on analysis of broad general issues, systemic issues like climate, health care, international governance, etc. The issue you are describing is not only highly specific, but it is even individualistic. Arriving at a prognosis requires that we assess the personality of Kim Jong-il and his personal propensities as well as the psychology of his government. The truth is that AIS⁶ is incapable of such an analysis. Our strike rate on other subjects does not mean anything. On this issue we would be completely out of our league.

“Please do not think we are unwilling to help or trying to avoid taking some responsibility. We have known for quite some time that AIS⁶ is incomplete and we are in the process of working on a beta version of AIS⁷ which aims to address precisely this issue, the capacity to factor in individual psychology and decision processes. But that product does not exist today. Without it, there is no way we can help you. If you can wait until next year, then there is a good chance that we will have something to offer.”

Howard listened carefully and then replied, “Dan, the fact is we do not have until next year. This is an issue that could affect the lives of millions of people. We may need an answer in as early as three or four weeks from now.”

“I am afraid that in that time frame, it is impossible for us to help,” Dan said.

“Look, suppose you place all your resources on this job. Suppose we cut you a check for ten million dollars today so that you can forego other income earning opportunities and hire whoever you need. If you prefer, I am prepared to get your resources from anywhere in the world. Just tell me who they are and we will get them for you. If ten million dollars is not enough—I know you are too patriotic to take advantage of us—just say so and I am authorized to up the ante to cover whatever it costs.”

Dan sat silently looking down at the table. He did not look at Howard or Bill for several minutes. Finally he looked up at the video screen and said, “Ed, we will do our best to help you. What we want is all the information you can get us as soon as possible. My partner Ray Berger will send you the specs and mode of transmission by tomorrow. As for the offer of money, we cannot in good conscience accept money for a job I think it very doubtful that we can perform. We will do our best without payment. Don’t bother calling us. We will be very busy for the next few weeks. As and when we have anything meaningful to report, you will hear from us, I promise.” Howard reluctantly accepted Dan’s terms and terminated the call.

Dan and Bill were silent during most of the drive back to Berkeley. Dan’s only comment was, “Now we know why Thompson was so eager to get hold of AIS⁶ and went to the point of threatening us. The Government is terrified that the intelligence failure that led it to launch the Iraq War might repeat again in Korea.”

When we reached MAI, Bill followed Dan into his office to see if there was anything he could do to help. Dan sat down and picked up a piece of paper with five handwritten words on it. Bill could not make them out from the angle where he was standing, then Dan handed the paper to him. On it Anya had scrawled the names of two very famous people: Sherlock Holmes and Professor Moriarty. Dan sat motionless for a few minutes, apparently pondering the note, and then he mumbled to himself, “Anya is right. It is going to be even more difficult than I thought.” Bill saw Dan was not eager to explain the note or discuss anything else just then, so he left Dan to himself and decided to ask Anya for an explanation.

78. Six Dimensions

The secret of highest accomplishment is to withdraw our faith in our capacities.

Shifting from activity to Silence is the basis for highest accomplishment.

Messages XV

The next morning, the five of them gathered in the conference room and Dan summarized the previous day's discussion with Howard.

"I am sorry, Bill, for not consulting you during the meeting with Howard. After all you are the COO now. And I regret not consulting the rest of you before giving an answer to Howard. I just did not see that we had much choice. I could not in good conscience accept payment for what looks like an impossible task. And I could not see how we can refuse to cooperate under these circumstances, whether or not we are paid to do it. But my biggest concern was not the money or your consent, it was the task itself. As of last night, I found it hard to even imagine a way for us to help. Images of Herb Brooks kept coming into my head and I couldn't help from thinking how lucky he was, how relatively easy his situation appeared. Churchill, FDR, JP Morgan, Iacocca—they all seemed to face less daunting challenges. Oh, I know I am dramatizing but that is how it appeared to my mind. I just could not even imagine a solution; whereas all these people shared one thing in common—they believed there was a way for them to succeed and that they were personally capable of finding it.

"So I decided that had to be the starting point. I had to first become convinced that we could find a solution before actually starting out to look for one. Without that conviction, I was sure we would fail. With it, I conceded there may be a way. It might not be the way I have in mind or any thing like it, but there may, there must—be a solution. If you had asked me last night, how we were going to do it, I would have said I had no idea. I still have no clear idea, but I now believe it may just be possible.

"I have to thank Anya for helping me out. When I got back last night and saw your note on Holmes and Moriarty, I thought you had just converted a high improbability into a total impossibility." Dan held up her note so the others could see what she had written. Everyone looked bewildered. Anya smiled because Dan had been able to decipher her meaning. "This morning, I have a different understanding. I don't know what you had in mind when you wrote this, Anya, but the first thing that occurred to me is that it undermines the model of personality we have been working on based on Manners, Behavior, Character, Personality and Individuality. The reason, I think, is obvious. Conan Doyle depicts Sherlock Holmes as a man of extremely high intelligence with an intuitive capacity that approaches genius, at least in his own specialized field of expertise. He has an inexhaustible fund of energy so long as he is in working to solve a crime, an indomitable strength of character. He is bold and utterly fearless. He is an original thinker and a social pioneer who accomplishes what no other man has ever achieved in his chosen field. In short he is a unique individual of a very high order. Now look at his arch nemesis, Dr. Moriarty. He has the same high intelligence and intuitive insight bordering on genius, only his genius is directed toward evil rather than good. He has the same intensity of energy, the same well-formed character, the same courage and boldness. He too accomplishes at the highest level in his chosen field, as a mastermind and ringleader of an underground criminal network that penetrates throughout Europe. I assume you can see the difficulty this presents us. Our model, as conceived, does not distinguish between Holmes and Moriarty, even though they are at opposite ends of the spectrum in terms of human beings. Obviously our model is deficient. I realized that immediately when I saw Anya's note. We have left something out. But what is it?

"This morning I realized what the problem was. I was making the same mistake as the psychologists who tried to reduce human personality to a small number of defining characteristics that would lend themselves to easy classification, such as the model of manners-behavior-character-personality-individuality. The model is not wrong but it is incomplete. It expresses variation only along one dimension. We have been trying to depict personality as something flat and one-dimensional when, in fact, it is multi-dimensional. So I went back to *The Book* and read familiar portions with this perspective in mind. They read differently than before. *The Book* confirmed this view and referred to several other dimensions—five in all. I then referred to the *Archives* and found corroborating material. Finally, I went to the Internet and discovered some entirely fresh writings with ideas I had never read before.

"What emerged was the conception of human personality as a sphere which expands as it grows. That growth occurs along at least six different axes that are related to one another in complex ways. Anya's note clearly exposed the second dimension, which *The Book* refers to as Direction, which is measured along a continuum between positive and negative poles. Holmes and Moriarty have attained the same level of development as individuals, but in opposite directions. Holmes represents the positive polar dimension of values—utter truthfulness, integrity, self-sacrifice, goodwill and self-giving. Moriarty represents the negative

pole–falsehood, dishonesty, egoistic self-aggrandizement, selfishness and evil. Most everyone else falls somewhere in between. I immediately saw that each of the people we had classified under our original model could also be classified on this second dimension. Anya’s professor Razenko and Wickham in *Pride & Prejudice* both combined impeccable manners with negative values. Jane Bennet and Edna Lambton combine flawless interpersonal behavior with very positive values.

“The third dimension is aspiration or energy. Aspiration represents the drive of the personality for external accomplishment in society or internal psychological, ethical or spiritual development. Adding this dimension to the other two reveals some fascinating insights. Take Mrs. Bennet for example. She lacks even the minimum level of manners required by society, so we would have to classify her as pre-manners on dimension No.1. On Direction, she falls somewhere in the mid-range, say five on a scale of ten. She does not exhibit any evil intentions or bad will for others, but she does gloat over her own successes and relish the fact that others are not nearly as fortunate. She takes no initiative to harm others, nor any particular initiative to help, other than her efforts to advance the selfish interests of her own family. Even within the family, she exhibits partiality for the two younger daughters who are most like herself and relative indifference to the fate of the two eldest who most resemble her husband. Nothing very striking there. But on dimension No. 3 Mrs. Bennet really stands out. She is a person with a strong aspiration for accomplishment, perhaps more than anyone else in the story. You can liken her ambition to Bill Clinton’s ambition to become the US President. In her case, the ambition was to see her daughters’ well married. All her thoughts, energies and initiative are dedicated to this objective. By the end of the story, she has achieved a remarkable accomplishment. Jane has married a handsome man with four thousand pounds annual income. Elizabeth has married into one of the wealthiest families in England. And fifteen year old Lydia has married a handsome young soldier with impeccable manners. All this she achieved in less than one year.

“Dimension No. 3 may appear fairly straight-forward since it ranges from low to high on only one value, aspiration, but it is actually somewhat subtle. Aspiration expresses in life as energy, so we find that people with an intense aspiration tend to have high energy as well, whether it is political ambitions like Clinton or Coach Brooks’ ambition to win the Olympic gold. But the converse is not necessarily true. You may find people who exhibit high levels of energy with little or no aspiration at all. The best example is Lydia Bennet. She is dynamo of physical energy jumping around in excitement seeking intensity from one moment to the next without any particular aim at all. Her only aim is dissipation, not aspiration. We can easily compare individuals on this variable. Elizabeth has far more energy than Jane or Charlotte because she aspires to achieve more in her personal life.”

“I remember people saying that Indira Gandhi was a veritable powerhouse of energy,” Vinay interjected. “People who met her said she radiated power. Certainly she was politically ambitious and ambitious also to see India come out of poverty. I’d say that India’s current leaders are lackluster by comparison.”

“I recall reading Kissinger’s description of Chairman Mao as a man that exuded energy and intensity,” Bill added. “And Kissinger himself was known to be a high energy person who commuted back and forth across continents carrying on shuttle diplomacy.”

“A close friend of mine met Gorbachev once and described him the same way,” Anya said. “After all, it must have taken tremendous energy and determination for him to stand up to the conservative and reactionary forces within the Communist Party while he negotiated an end to the Cold War with the West. When he proposed to Reagan the abolition of nuclear weapons at Reykjavik in the mid-1980s, he almost had a revolt on his hands back in Moscow.

“Well, I see you’ve all understood No.3,” Dan continued. “The Archives refer to dimension No.4 as Values. Here things get more complicated, because we have already included a measure of positive and negative values in the second dimension. We say a good man is positive and a bad man is negative. But again this is a very uni-dimensional view of reality. People can be compared and contrasted on a wide range of values that do not readily fall into a simple pattern. Take the value of generosity for example. A man may have good intentions, but be naturally stingy because he grew up in poor conditions or was never taught the importance of sharing. Darcy is known to be considerate and generous with money to his tenants, but he comes to realize that he is basically selfish and self-centred. Both values can co-exist in the same person. American society is founded on the values of self-respect and self-reliance, but people exhibiting these qualities can also differ markedly on other values. They can have goodwill or ill-will toward others, they can be stingy or generous, they can be selfish or selfless, etc. I found a document on the Internet listing twenty-seven basic human values and another list with more than eighty. Charlotte and Elizabeth both exhibit the value of goodwill, but in other respects they are very different. Charlotte is a conventional lady of good

character. Elizabeth is a bold, adventurous woman with an aspiration for romance and a spark of real individuality.

“These four dimensions seem to be fairly clear-cut to me and I think we can readily factor them into AIS⁷, provided we have sufficient data to serve as a reference point. But that presents another critical problem. Where can we get large volumes of reliable data about a wide range of human personalities so that they can be classified and serve as standards for evaluating individuals such as Kim? Until we can do that, our model will be of little use. That may take a great deal of time and time the one thing we do not have.”

As Dan was talking Anya got an idea that might work and finally stopped him to present it. “There may be a method to do it quickly, Dan. In fact, we have already been employing that method without really giving it much thought. Let us start with people from great literature rather than from history. If we concentrate on the great novels written in English and those translated from the French, German, Russian, Spanish and Italian, we will have an enormous pool of characters to draw upon. Of course, we have to include Shakespeare. His thirty-seven plays probably include more than five hundred different varieties of human personality. Trollope has written more than fifty novels which depict at least five hundred more. If we also include authors such as Dickens, Hardy, Dumas, Hugo, Mann, Steinbeck, Hesse, Tolstoy, Dostoevsky and Kafka we can easily assemble ten thousand varieties for analysis.”

“That’s a brilliant idea” Dan replied. “But identifying people is not enough. We need also to analyze them according to their characteristics. That’s a gargantuan task.”

“But, Dan,” she explained, “we need not do that. It has already been done. Let us confine ourselves to those authors and those books which have already been subject to in-depth character analysis. All we need to do is feed in the analysis and then process it according to the six dimensional model. In fact, we can do the same thing for historical figures as well, drawing on material from biographies. We can include politicians, military leaders, inventors, entrepreneurs, business leaders, etc. Of course, the data from biographies will be skewed toward the rich and famous, but I am confident we will discover every type and variety of foible that we are looking for among politicians, monarchs, generals, businessmen, writers, artists and scientists. What we miss there, we will pick up from the novels depicting ordinary levels of social life.”

Everyone agreed that this was a sensible approach, considering the short time at their disposal. Then, Ray, who had been sitting quietly, asked, “Dan, you spoke of six dimensions, but you have only mentioned four so far. What about the other two?”

Dan smiled and replied, “I was afraid someone would ask me that. No.5 and No.6 are referred to as Strength and Consciousness. The *Archives* make a distinction between energy, aspiration and strength, which can be somewhat confusing at first glance. Lydia has energy. Mrs. Bennet has energy and aspiration. But neither of them are strong or powerful personalities. When Lydia does not get her way, she whines and cries. When Mrs. Bennet is frustrated or confronts an obstacle in life, she becomes distraught and has a nervous breakdown, as she did when she received word of Lydia’s elopement. But when Darcy is rejected and abused by Elizabeth, a woman with whom he is passionately in love, he withdraws quietly, reflects on her criticism of him and decides to change himself. His quiet composure cloaks a person of considerable inner strength. Elizabeth exhibits a certain freshness and vivacity under normal circumstances, but when she is challenged or confronted, her strength comes to the surface. When Lady Catherine tried to overpower and intimidate her by means of her wealth, rank and threats of social ostracism, Elizabeth’s inner strength rises to the surface and she compels Lady Catherine to retreat. Gorbachev had the energy and aspiration to launch a revolution in USSR, but not the strength to hold the country together in the face of divisive forces; whereas Churchill and FDR were men with the strength to lead and to compel the public to follow. Reagan had an energy and charm which people found appealing, but his strength was mainly a capacity to resist change, not to bring it about.

“My hesitation on Dimension 5 arises from the fact that most of the people who exhibit great strength seem to be those who come from wealthy, important families. Heredity seems to play an important role. If AIS⁷ is going to deliver a formula that will enable anyone to accomplish at a high level, we will have to find a way to break down hereditary strength into components that can be acquired by conscious effort. We will have to discover the knowledge and values on which strength is ultimately founded.

“Now we come to the real problem, Dimension 6, Consciousness. I say it’s a problem because it seems to be as complex as all the other five dimensions put together. *The Book* presents a clear framework for understanding what it is and the variety of forms in which it expresses itself, but it will take a great deal of study to convert that knowledge into a program. Briefly, *The Book* describes three basic planes of human existence which it terms physical, vital and mental. It further subdivides these three into nine sub-planes. It then says that each of these nine has two dimensions, bringing the total to eighteen different levels. It goes

on to suggest that these eighteen can be further subdivided and that in addition that there is a fourth plane, the spiritual, that lies above the other three. When this one is taken into account, we end up with a minimum of thirty two planes or more.

“There is one more problem. In our analysis of the first dimension, I have been able to distinguish Manners, Behaviour, Character and Personality, but I am still struggling with the meaning of the term ‘Individuality’ as it is defined in *The Book*. I mention it here, because I believe that what it means by Individuality—obviously not the way we commonly use it—has its origin in the spiritual plane. That is, true individuality is an expression of each person’s spiritual uniqueness.

“All this is more than we can handle at the moment. I suggest that we focus now on building AIS⁷ based on five dimensions of human personality. I have a feeling that most of Mr. Kim’s very original behaviour will turn out to be eccentricity rather than spiritual uniqueness, so I do not think we need be concerned with his soul just at present. Let us structure AIS⁷ on this basis and then incorporate the last dimension in a subsequent version. That is my advice.”

The rest of them were somewhat overwhelmed by all the ideas that Dan had presented and needed some time to digest them, so they decided to adjourn the meeting and continue the discussion the following day.

79. The Part is Bigger than the Whole

The deeper they delved into the mystery of human personality, the more it revealed of its remarkable complexity. When they started work on AIS⁷, they thought they were finally coming to the last piece of the puzzle—a difficult one, no doubt—but just one last piece—the person. But as work proceeded, they began to feel increasingly like the early explorers of the atom must have felt when they discovered that the microcosm of the atom holds as much mystery as the entire universal macrocosm. As Einstein discovered that Newtonian laws do not hold true on the cosmic scale of galactic distances and the speed of light, where principles of relativity come into play and Niels Bohr first discovered the strange properties of the quantum world of subatomic particles, so they discovered that the infinitesimal inner world of human personality concealed more wonder and complexity than all the splendors of infinite time and space. Behind and beneath each layer of universal law they discovered yet another layer governed by a new and deeper set of principles, as if the human personality were not merely a many-layered onion but rather many different types of species layered one on top of another—a thin social veneer covering a thin layer of conscious mentality concealing multiple levels of subconscious intention and causality for which no accurate terms existed, beneath which more basic instinctual layers of animal vitality and physicality were cloaked—and all interrelated and interacting as the warp and weft of a single connected fabric of personality. The individual is merely an infinitesimal speck in the infinite ocean of society, but that speck contains in its uniqueness an infinity of variation that rivals all the variety and complexity of universal nature.

For many days a controversy raged back and forth between Dan and Anya regarding the feasibility of what they were attempting. Anya played the role of the skeptical mathematician, Dan that of the true believer. They debated constantly without acrimony or bitterness. Anya was all the time hoping that she was wrong and he was right. He was all the time thinking that her questions and objections only mirrored the doubts he suppressed in his own mind. They took opposite points of view, but shared a common aspiration and objective. Neither fought for a victory of their ego—both wanted a victory for the work.

In the weeks that followed, Dan, Ray and Anya devoted virtually all their waking hours to the translation of the six dimensions into operational concepts, the development of scales and measures to capture the complexity of qualitative variations, the conversion of those quantitative concepts into the equations of a comprehensive formula, and the development of algorithms to transform mental formula into programmable instructions for AIS⁷.

They soon discovered that one of the basic obstacles that had to be overcome was simply a question of language. They lacked a clear vocabulary to distinguish the plethora of subtle differences that constituted the complexity of human personality. English is filled with synonyms that one intuitively uses to express these distinctions, but nowhere were the terms accurately defined; and the same terms were often used with widely differing connotations. A gradation of concepts emerged out of the effort giving birth to a whole new language composed of plain English terms applied with a special meaning and connotation. For example, the dictionary does not make clear distinctions between the words ‘understanding’, ‘conviction’, ‘belief’, ‘opinion’ and ‘attitude’, yet in practice they discovered a gradation of unique psychological states that needed to be distinguished and properly labeled. Therefore, they formulated a new vocabulary of distinct terms, e.g.

Understanding—mental comprehension of a fact or relationship.

Opinion—a mental understanding endorsed and personalized when the ego identifies with it and accepts it as its own.

Attitude—a mental opinion endorsed by the vital (emotional being) and imbued with emotional energy.

These terms emerged as steps in a sequence that described various stages in the transition from impersonal idea to personalized and emotionalized values in the individual: thought—understanding—opinion—belief—attitude—sentiment—value. Another sequence traced the transition from mental decision to emotionally endorsed determination: will—decision—commitment—determination. In a similar manner, they evolved operational definitions for twenty-seven human values and a list of more than hundred other psychological elements.

The first real breakthrough came when they tested a scale of psychological energy that seemed to reliably distinguish between different levels of intensity at the physical, nervous-emotional and mental level. That was followed by scales for aspiration and strength of personality. Instead of creating one scale to

measure the progression from manners to individuality, they found it necessary to evolve five different scales and access each person on all five to map their precise stage of development.

Just when they began to feel they were making progress, they stumbled on an entirely new level of complexity that had not yet been factored in—human nature. The discovery came about in a most unexpected manner. After burying herself in formulas and algorithms all week, Anya persuaded Vinay to take her to San Francisco for a performance of Shakespeare's *Taming of the Shrew* by the visiting Royal Shakespearean Company from Stratford-upon-Avon. As they sat through the prologue of the story, Anya suddenly realized they were witnessing something quite profound disguised as comedy. A nobleman's hunting party comes upon a drunken beggar named Christopher Sly lying on the road in an unconscious stupor. The Lord proposes to have some amusement at Sly's expense. His attendants carry Sly home, dress him in the Lord's sleeping gown and place him in the nobleman's bed. When Sly awakes, he is surprised to find himself lying in luxury and surrounded by a host of well-dressed people attending to him with care and concern. The Lord, now in disguise as a courtier, informs Sly that he is in fact a nobleman who has been suffering delirium for the past fifteen years and who believed that he was a drunken beggar. A court page dressed as a woman is then presented to Sly as his wife, who had been long awaiting his recovery. Overcoming his initial surprise, it takes only a few moments for Sly to convince himself that all this time what the Lord told him was actually the truth. An entire lifetime of experience is quickly forgotten and dismissed as a bad dream when a more appealing version of life is presented. Even as she laughed at the amusing tale, Anya had a suspicion that it reflected a deeper truth of human nature.

After that night Anya became more conscious of the fact that whenever they pushed their analysis beyond a certain limit, they came upon unexpected patterns of human behavior which did not conform to the surface formulas at all, yet seemed to adhere to their own deeper laws. Once they began to look for it, they discovered that this deeper plane of characteristic patterns was universally prevalent and culturally independent—the stuff of ancient parables, legends, myths and folktales. Their task was to extract each of the principles from the life context in which they were presented and find how to factor them into the equations governing manners, behavior, character and personality. Anya would always remember Christopher Sly not as a beggar or even as a Lord, but as a teacher who revealed deeper truths that lie within us all.

80. One + One

Each is in all. All is in each.

The Book

One can now imagine how the early explorers of the American West felt as they crossed the Rocky Mountains into California, skirting one formidable peak after another, only to discover, as they reached each new mountain top, a further range of peaks still higher in the distance, concealed from view until the very last minute. Climbing mountains, one can never be sure he has reached the summit until he stands on top and there is nothing above his head except the sky.

In their case Anya had the distinct sensation that with each conquest of a further peak they were descending one step further into uncertainty and obscurity. Each forward step seemed to take them further from the goal. But all journeys finally end one way or another, and as they sounded the depths of human nature Anya had a woman's sense that they were near the terminus. Oh, how wrong she was!

Anya would have loved to relate that the discovery came as a flash of brilliant intuition, perhaps in the manner of Einstein's $E=mc^2$, but nothing could be further from the truth. It happened one Saturday morning, when upon waking up, she found Vinay already dressed and preparing to leave the house. Her first thought was the prospect of another long taxing day of work at the end of what had already been an exhausting and frustrating week. But before she could even go back to AIS⁷, there were essential chores that had to be done—shopping for food, cleaning up after Katia, dropping her at soccer practice, and a host of other small tasks which had accumulated over the past few weeks. Anya had secretly been hoping that Vinay would offer to take over that list, so that she could enjoy a few more hours in bed and maybe get a little extra attention and pampering from her partner.

But no, that was not to be. Vinay had something more important on his mind—football. Vinay was on his way to join some friends for the Cal football game against No. 18 Arizona State with a 3-0 record and pegged for a shot at the Pac-10 conference championship. Cal had a 3-1 record and was ranked No.20 nationally after losing to No. 12 Tennessee and defeating two other top 25 ranked teams. Surely Anya must appreciate the unique importance of the occasion. As he walked out the door, Anya felt bitter angry words rising from her gut and pressing for expression. Luckily for him, he did not linger a few minutes longer. There was nothing more to be done but accept her fate, but she could not prevent the accumulated fatigue, frustrations and failures from concentrating themselves into a laser sharp beam of fury directed with pinpoint accuracy at her mate. As she showered, dressed and threw together some breakfast, the beam gathered intensity like a cyclotron gradually reaching critical energy and speed.

Suddenly Anya heard the door open. She looked down the hall and saw Vinay. He looked deathly pale, grimacing in pain. Anya dropped whatever was in her hands and rushed to see what the matter was. In response to her questions, Vinay just shook his head to indicate he had no idea. All she could decipher were two mumbled words, "Stomach pain." By then Vinay was nearly doubled over. Anya grabbed her purse and immediately helped him out to the car, rushed him to Kaiser Medical Center and into emergency. Thirty minutes later, a physician came out to tell her that Vinay was suffering from a ruptured pancreas and required immediate surgery. The operation lasted over two hours. Finally the doctor came out and reported that the operation was successful, but had it been delayed even an hour more, the matter would have been extremely serious. Anya thanked him and sank into the chair in relief - too frightened and exhausted to even feel happy. It was only days later that she realized she had never even thought to offer gratitude to God or life for that narrow escape.

What did all this have to do with their quest for knowledge of human accomplishment and AIS⁷? In order to explain, it is necessary to put oneself in Anya's position for a moment, or better still in the position of a small child discovering the world for the first time. Nothing is as marvelous as the expression of wonder in a child's face when it discovers a new fact or relationship that is obvious and self-evident to adults. A child sees with different eyes than adults do. She sees freshly. It happens to adults too on rare occasions when they begin to actually think—not just dreaming or thinking that we think - which is what we normally do. Oh, the arrogance of scholars and experts that dissect a flower without even really seeing its beauty or smelling its perfume and plot the heavens without ever wishing on a star. How does the bee feel when it sees the bright yellow stamen of a red double hibiscus flower with its pollen-laden anther beckoning in the breeze? Only a child or a poet could say. Great science is born of a similar childlike vision, shorn of the clouded blinkers imposed by the light of common day. How else could Archimedes—sitting naked in his bathtub—have suddenly been struck with wonder by the rising level of water in the tub and taken to the streets crying 'Eureka!'? How else could a lone apple falling from a tree have revealed to Newton the universal law of gravitation? Knowledge does not come by an accumulation of facts, formulas, theories and opinions. Knowledge comes by unencumbered sight, inside or outside.

The waiting room at the hospital became Anya's bathtub or her apple tree. Thoughts started streaming through her head by themselves. They had surveyed the far stretches of a universal vastness called society and plumbed the successive layers of its activities, organizations, energy, and culture to discover a primordial process which was the source of all it created—all its discoveries, inventions, revolutions and evolutions, spewing forth infinite plentitude. So too, they had defined, divided, categorized, layered and measured the multiple depths of human personality—that infinitesimal that is an infinite—and extended their reach at least to the foundations, if not yet to the subterranean depths and sublime heights of humanity. And suddenly when Anya thought and hoped they were nearing the end of their quest, the simplest, most self-evident fact presented itself to puncture her pompous arrogance and undermine her self-assured confidence in the entire enterprise. She discovered it in a hibiscus—not in a flower actually, but in another person.

Anya's discovery could be summarized in the following premises:

Premise 1: There is an all—an infinite universal set—which includes all human beings.

Premise 2: There is the individual—an infinite variety of unique formulations—that compose the universal set.

Premise 3: There is the other.

Anya had understood the One and the All, but could not answer the simplest of all arithmetic equations,

$$1 + 1 = ?$$

One may analyze the individual to near perfection—knowing that 100 percent perfection in such matters is not possible—but what happens when one brings another person into the equation? What happens when one adds Josephine to Napoleon or takes her away? An apparently silly question, no doubt, until one realizes that all of Napoleon's greatest accomplishments came during the period in which she was his mistress or his wife; and that as soon as he sent her away, his extraordinary reign began its fatal decline. Would FDR have been able to inspire a nation from his wheelchair and lead it successfully through the Great Depression and the Second World War without an Eleanor behind him? The Russians saw how Gorbachev changed the world, then lost his spark when Raisa died prematurely. In all these instances there is a second, an other, that defines and alters the first and makes it what it is.

What had appeared simple was becoming frighteningly complex. It was not enough to discover one formula to define the individual, another to define the society and a third to define their relationship. They needed to discover an infinite succession of formulas, sets within sets, to define the unique relationships of 1 + 1—mother and child, sister and brother, leader and follower, teacher and student, guru and disciple, lover and beloved. What would Don Quixote been without a Sancho Panza? Dante without a Beatrice? Jean Valjean without the Bishop to bless him and Inspector Javert to haunt him all his life? The great mogul Emperor Akbar without his wise minister Birbal? The Count of Monte Cristo without Abbe Faria to teach him the secrets of life while in prison? Henry VIII without Anne Boleyn? D'Artagnan without his three life-long companions—Athos, Porthos and Aramis? A Steve Jobs without a Steve Wozniak at the founding of Apple? Louis XIV without Louise de la Valliere, the Sun King and the mistress who loved the man, not just the king? Could they really know Kim Jong-il without factoring in his wife and three mistresses? Each of these pairs defined, challenged, contradicted and complemented each other in countless ways they could only begin to surmise.

There is more to human personality than an onion skin. There is a dance. Each of us is a mirror to the other—to the others—whom we meet—a mirror that casts a reflection of our similarities and our differences in inverse, reverse and obverse images. Jane Austen's genius comes immediately to mind—Darcy's pride and Elizabeth's prejudice were mirror images of strikingly opposite yet complementary personalities. They met as opposites and sparring partners—he, an arrogant, stuffy aristocrat who rudely declined an opportunity to dance with her because he could not be tempted by her indifferent beauty; she, the educated daughter of a refined gentleman and his vulgar middleclass wife, with a pride of her own and a spark of energy and freshness inherited from her uninhibited mother, who was offended by his pride because it was at the expense of her own. From a distance they saw and looked at each other with the indifference born of great difference and antipathy. Then sparks began to fly. Darcy became alarmed by his friend Bingley's attraction to Elizabeth's sister, Jane. He could not deny Jane's beauty and became uncomfortably aware that Elizabeth possessed shades of it too, especially those fine, defiant eyes. Overcoming repulsion for her family and his reticence to mix, he asks her and her alone to dance. Elizabeth, incensed by Wickham's lies about Darcy's injustice to him, felt justified and compelled to challenge and provoke the great aristocrat, taunting him, teasing him, laughing at him, doing anything she could to embarrass him for his meanness and make him

confess his ill nature. Indifferent, accidental acquaintances became bound in an exchange of energy. A dance of life had begun.

Then life threw them together at Rosings, the home of Darcy's aunt, where he was forced to bear witness to the vulgarity of his own family and the reserved propriety with which Elizabeth withstood offence. Carried away by feelings which defied his own judgment and his advice to Bingley, he approached Elizabeth with a passionate confession and asks for her hand. Confident of her acceptance, his proposal becomes an unintended offense—an indictment of her entire family, a pronouncement of his generosity in embracing one so far beneath his place in life. He is bewildered by her curt refusal and demands an explanation which she provides in plenty. Reason is followed by abuse, her refusal becomes a confession of extreme dislike. He is the last man on earth she would ever marry. Oh, if only he had known his own heart when he first refused to dance with her. If only she had known her own heart when she threw back his proposal in his face. His letter of explanation, her outrage at his self-defense gradually concedes the truth and justice of his actions. Months of introspection by them both. He resolves to take her abuse to heart and transform the arrogant selfishness she found so distasteful into the generous and good man he had always aspired and believed himself to be. She makes an unplanned visit to Pemberley, where she learns of the high repute in which he is held by all who know him and witnesses the splendor of a palatial estate, which had been offered to her as her own. An unexpected meeting, embarrassment on both sides, an unplanned opportunity for both to make amends.

But unfinished work still divides them. He has interfered with Bingley's marriage to Jane. He has insulted her family so deeply that she can never forget, even if he can overcome those objections in himself. Life adds injury to insult. The elopement of Lydia and Wickham brings home the truth of his worst accusations for all to see. Elizabeth cannot defend her family, nor can she claim exemption from its faults. She owns their sins as her own. And he, at the moment she is sure he is gone forever, sees an opportunity to finally demonstrate that his love for her transcends all considerations of status, culture or conventional propriety. How else could he ever prove the depth of his love for her, except by doing that which is most deeply abhorrent to his character and nature? He takes the plunge and goes in pursuit of the scoundrel Wickham and the wayward Lydia, finds them, compels Wickham by bribery to save her reputation and that of the whole family, extracts a pledge of secrecy that his role may never be revealed, lest it evoke a false sense of obligation. Then he confesses to Bingley that he had been wrong to interfere in Bingley's relationship with Jane.

When the crisis has been resolved, Lydia is married and Jane is engaged, finally he and Elizabeth meet again. He cannot fail to remember with pain the bitterness of her earlier refusal. How could he ever bring himself to ask again when she had so utterly rebuffed his first proposal? Life demands that she take the initiative as is always so. It is a law of life. She cannot help expressing her gratitude for the help he has given her family, but it is not gratitude alone she conveys by those words. It is a subtle invitation which he accepts. He asks and she consents. The first phase of the dance is complete. $1 + 1 = ?$

What is really the basis for compatibility between woman and man? Is it similarity or is it difference or some odd mixture of the two? Jane and Bingley seem to be male and female versions of the same mold—the same pretty forms, pleasant manners, mild temperaments, sweet thoughts, good intentions and limited intellect. Elizabeth and Darcy seemed to be opposites in so many ways, yet...

As Anya sat in Vinay's hospital room waiting for him to regain consciousness, she was thinking how fortunate it was that Bill had joined MAI. Vinay would be out of commission for at least a few weeks. What would they have done otherwise?

Vinay regained consciousness early the next morning. Anya had so much she wanted to tell him. He smiled at her, grimaced slightly from a sense of discomfort, and asked: "What happened to the game?"

"Arizona State 21," she said with a pause, "Bears ...49!"

81. Robber

While Vinay was recuperating from his operation, Bill took charge of the commercial end of the business. Dan focused all his attention on defining the six dimensions of personality, while Anya and her team worked to translate the concepts into formulas and algorithms. They were fortunate that she was able to recruit Ed Chow, who had been working on AI systems for twenty years along with three other highly qualified but less experienced programmers, to assist her.

Ray took up the task of coordinating with Howard's team at State to download massive amounts of confidential information on the Koreans and the current situation for the analysis—data on the history of the countries and the region, the cultures, Korean's international relationships with Japan, Russia, China and the USA, key personalities in the North and South, religion, politics, military capabilities, economy, national accounts, even key figures in Korean literature. He also took the opportunity to obtain far more extensive and detailed information on the subject of nuclear weapons than they had access to in the past. It would have taken a decade or more for a team of a dozen people to even skim through all the material in a cursory manner to determine what was of importance. AIS⁷ was expected to do the job in a matter of weeks, and AIS⁷ did not even exist yet!

On September 26, just two weeks following the meeting with Howard, they called an internal meeting of the project team to assess overall progress and agree on the earliest possible date for generating a preliminary report for Howard. Dan was late coming in for the meeting so the team began without him. Anya reported that she had nearly completed work factoring in three of the six dimensions and would begin testing the algorithms to ensure they were properly integrated with other parts of the core formula. She estimated that inclusion of D-4 could be completed in ten days or less, but she could say nothing about D-5 and D-6 because Dan was still working on them and had not sent her anything on which she could even base a guesstimate. Ray reviewed progress on the uploading, collating and analyzing data—he had decided to do a preliminary analysis with AIS^{6b} so that they could at least check on data integrity and consistency and identify gaps in information which needed to be filled. Working full speed, Ray estimated the process could be completed in another two weeks.

At this point Dan entered the room, apologized for being late and sat down next to Ray, who briefly summarized for him what had been discussed thus far, and told him they needed to hear from him a likely schedule for D-5 and D-6. His reply left them all speechless. "I'm afraid there is no time for D-5 and D-6 right now. I just had a call from Howard, which is why I was delayed. He says we have run out of time. Intelligence reports now indicate that North Korea is planning some action within the next ten to fifteen days. The Pentagon is already drawing up a series of contingency and response plans. If the State Department is to have any say in the matter at all, it needs to present its recommendations to the President by October 4 or 5 at the latest, which means he needs whatever we have to offer by the first or second so that his people can go through it and decide whether and in what form it can be incorporated. I told him the schedule was totally unrealistic. He responded that life has a habit of imposing unrealistic schedules and impossible situations which those who live in the real world have to cope with, whether they liked it or not. I made it clear that he should not expect anything from us in that timeframe but we would still work to see if something is possible.

"That's what I told Howard, just to get him off our back. But I heard a level of concern in his voice that I would describe as desperate, bordering on terrified. He knows something which he would not or could not tell us, which made the situation even worse than he described it. Whatever it is, it cannot be good for any of us either. So what I would like to know from all of you this morning is how we can make the impossible possible. Let us forget about reasonable delivery dates and be unreasonable. Let us talk October 1—that's six days from today. Tell me what is the maximum possible you can do by then is, and what you need in order to do it in that timeframe."

There was dead silence in the room for three or four minutes. Then Anya asked, "What about D-5 and D-6?"

Dan shook his head. "There is no time. We will have to build AIS⁷ with what we have. I will keep working on D-5, Strength, and see if I can provide you an approach within the next three days. We have already factored in Energy and Aspiration, which are reflections of Strength, so we have it partially covered. As for D-6, I am still not able to get a grasp on it. It seems to be as vast and complex as the other five dimensions rolled into one. I believe it contains the true secret to individuality, but it eludes me. We will just have to come back to it later."

Since no one was anxious to commit themselves, Ray decided to speak up. “If we double the team working on data processing, I believe we can deliver around 80 percent by month-end, 100 percent by October 2. That will leave no time for checking integrity and consistency. The only check we can do is to conduct a parallel run on AIS^{6b} and compare results.”

Dan nodded and looked at Anya. She smiled feebly and said, “We’ll deliver the code on D-1 to D-4 by the thirtieth. If you can give me something on D-5, I will try to incorporate it by the first morning. I will just have to hire a nursemaid for Vinay and Ray will have to declare temporary separation from his wife till this is over. You other three are not married, so you have no one to apologize to for not helping out at home. But that means all other project work and customer support on programming issues will just have to wait until after this is over, so pass the word around.” Dan smiled and nodded his consent and appreciation and the meeting adjourned.

As Ray was getting up to leave, Dan motioned him to remain. “Ray, I’ll need you to take the lead on this. Bill is fully committed on the commercial work. I am too immersed in theory building to become well acquainted with the facts. I already warned Howard that we are totally unqualified to handle this project since none of us have the least familiarity with Korea and have never even been there.”

Ray interrupted Dan to say, “That is not strictly true, Dan, though certainly I am no expert. I had a Korean roommate at MIT for a year during my undergrad days—a guy named Ben Choi. He used to lecture me day and night about the superiority of Korean culture, cuisine and entrepreneurship. He must have narrated half the history of the country, including the monumental naval victory over an American armada in 1871, their age-old animosity to the Japanese who annexed the country in 1910 and exploited hundreds of thousands of young women, their love of parables, their resistance to Chinese domination and countless other facts I never dreamed would ever be relevant. He even took me home to Seoul for three weeks during the summer and introduced me to his lovely sister, Min. Of course, that was twenty years ago. So if you are looking for someone to make the presentation in Washington, it looks like I am your man.”

The next four days were a complete blur. Ray never left the office and asked Rana to drop off fresh clothes. Anya insisted on seeing Vinay daily, so she left after midnight every night and was back by 7 am the next morning. Dan never came in until after completing a formulation for D-5. Twenty-ninth afternoon, Howard called daily for status reports and sounded more impatient on every subsequent call. Ray briefed him on the status and warned him that whatever he got from them would be suspect, but for some reason that he did not explain, Howard kept pressing anyway. They tentatively agreed to a meeting on the first evening, which was then rescheduled to the second afternoon and again pushed back to 7:00 pm on the second. By then Ray assumed Howard would have all other inputs and could throw in theirs as the last piece. By that time, Ray realized that he would be getting on a plane headed for Washington without even having had time to read AIS⁷’s report until he was actually on the plane. Data upload was completed by 10:00 pm on October 1. AIS^{6b} generated its report by 1 am. By then, Ray was too exhausted to look beyond the table of contents. Anya called to say AIS⁷ was ready for a trial run at 5 am on the second. She handed Dan a few copies of the report by 7 am and they headed for the airport. Dan drove and Ray slept.

Once on the plane they both started reading. Ray started with the executive summaries generated by AIS^{6b} and AIS⁷. On many points they were nearly identical, as was expected, but on several they were miles apart and took almost diametrically opposite positions. Without reading the detailed analysis, Ray was unable to account for the major differences. Dan and he exchanged terse comments as they read through. “You realize this is absolute madness, don’t you? Going into the US State Department and presenting a report which we have not even read and have no time to study or analyze to identify possible errors and reconcile variations is crazy—especially in view of what is at stake.”

“The whole situation is crazy, Ray,” he replied. “Not just our part in it. My guess is that the US Government, the South Koreans and the North Koreans are probably no better prepared than we are. Let us just take our situation as representative of the general madness and hope we do not add to it by our contribution.”

Midway through the flight, Ray picked up the in-flight phone in the seat in front of him and called Anya. She answered in a dull, sleepy voice. When he asked where she was, she confessed to having fallen asleep on the sofa in her office. In addition to the ten basic questions which Howard had asked them to answer, Ray asked her to run one more question and email the results to his Blackberry as soon as possible.

Shortly afterwards, the flight attendant came around with lunch and handed Ray a special meal marked ‘diabetic’. He jokingly thanked her for looking out for his health and asked whether the medical diagnosis was a new part of the airline’s service. The young woman looked flustered and embarrassed and asked, “Aren’t you Mr. Burger?” Ray nodded that he was, but said he had not ordered a special meal, and as

far as he knew, did not have diabetes. She pulled out her meal instructions and showed him the entry: Mr. George Burger—diabetic meal. Ray was just about to tell her that his name was Ray Berger, when the elderly gentleman across the aisle from him leaned over and said that he believed the special meal was meant for him. They laughed over the confusion and then began to chat. The spelling of his last name caught Ray's attention and sent an involuntary chill running through his veins. In the course of his narrative, the man explained that for the past ten months he had been shuttling back and forth between DC, where he and his wife lived in retirement, and Palo Alto, where his daughter in law and her children were struggling to adjust to the violent, accidental death of his son. He went on to say that his boy had been shot accidentally by police the year before in a hotel in Chicago. With so much already on his mind, what Ray heard was simply too much for him to process. Could it be the same Burger? He was simply too afraid to ask. What were the odds?

They landed and took the State Department car that was waiting for them, reaching the front door at 6:50 pm. Ray and Dan were escorted upstairs to a large conference room which could accommodate about forty people in a ring and another fifty in the row behind. The room was completely full and the meeting was already in progress. Howard looked up as they entered and motioned them to two chairs which had been left vacant with their name cards on the table. After Ray was settled in his chair, he began to scan the room and finally came around to the person who was presently speaking from a chair at the opposite end of the ring. Ray was struck by his unfamiliar accent and could make out his name card from that distance—Kurt Levin. He was from the Institute for Intelligence and Special Tasks, Israel (Mossad). Then he glanced to his right and saw Tony Preston sitting next to him. His card carried the name of the same organization. Ray elbowed Dan and directed his attention in that direction until he too recognized Tony. Ray concluded that Tony had already seen them as they entered, because his eyes drifted all over the room, except in their direction. The Israeli assessment was that North Korea had both the capacity and the will to use nuclear weapons and that only a massive strike at all their facilities could rid the world of nuclear blackmail by Kim's Stalinist government. Israel offered to participate in any strike that might be planned. Ray opened a copy of the Israeli report which had been circulated to all participants and leafed through the document. At one point he noted verbatim excerpts from AIS⁵. There could be no mistake about it. At least part of the Israeli assessment was based on analysis by the earlier version of AIS⁶. They now knew for sure who had broken into the office and where Anya's hard drive had gone along with all the files Tony removed when he disappeared. Ray wondered whether Howard had known the truth all along.

Ray saw from the agenda that the Israeli presentation was the fourth in a list of twelve presentations. They had apparently missed the presentations by South Korea, Japan and Taiwan that preceded it. Ray found time to read through their executive summaries while Israel was winding up. After Israel they heard from Russian and Chinese experts who did not represent official government policy, the CIA, the Pentagon, the US Ambassador in Seoul who said he had flown back for the meeting, a member of the National Security Agency Council, the International Atomic Energy Association and the USA's No. 2 ranking official at the UN, who worked for Ambassador John Bolton.

The most extreme views were expressed by Bolton's office and by a representative of Dick Cheney who, along with the Israelis, urged a pre-emptive strike and quoted Pentagon sources to indicate a very high probability of success. The South Koreans and Japanese seemed visibly disturbed by the proposal. The rest of the room seemed to be somewhat evenly split between support and opposition to the proposal. By the time their turn came, Ray's mind was filled with conflicting viewpoints and recommendations and he could barely remember what their own position was, so he decided to go through the report point by point without relying on his capacity for extemporaneous delivery.

Ray began by apologizing for their late arrival and explaining very briefly the constraints under which they had prepared their report at Howard's request. He particularly stressed their lack of expertise on this subject and their inability to validate either the software or the report, given the extremely limited time available. Howard interrupted to assure him that everyone was aware of the constraints and that they need not spend precious time discussing it further. Ray then dove into the report.

First was a list of facts which AIS⁷ identified as particularly relevant to the current situation. Throughout its history, Korea has been sandwiched between the great and powerful kingdoms of China, Japan and more recently Russia. The country has no history of aggression against any of its neighboring countries. At the same time it has exhibited an amazing capacity to withstand cultural assimilation by its dominant neighbors, especially China, which has placed its stamp on all other adjacent countries. The Japanese annexation of Korea in 1910 and its ruthless domination up until the end of World War II have left the seeds of bitter resentment and suspicion among the Koreans, both in the North and the South. Inspired by Mahatma Gandhi's work in India, in 1919 the Koreans launched a non-violent liberation movement that, was violently suppressed by the Japanese. Although the first leader of North Korea, Kim Il-sung, was a

Communist trained in Moscow and brought back to Korea when the Soviet army occupied the northern part of the country in July 1945, over time Kim distanced himself first from the Soviets and then from the Chinese and evolved his own policy of self-reliance as the central pillar of North Korean foreign policy. North Korea's failed effort to reunite the country in the early 1950s led to the Korean War, which has never been officially terminated because South Korea never signed the armistice agreement. With aid from the Soviets, North Korea developed rapidly in the 1950s and early 1960s to emerge as the second most industrialized state in East Asia, after Japan. After a rift developed between the USSR and China, the Soviets withdrew their aid in the late 1960s. The first oil crisis crippled the country which had become highly dependent on energy-hungry machinery for both its agriculture and industry. Gradually growth stalled and eventually went into reverse gear. Meanwhile South Korea grew rapidly, supported by US military protection and massive foreign aid. In the 1990s the situation in the North became critical. Agricultural production from its collectivized system declined by 30 percent due to a shortage of fuel and fertilizers and a lack of incentives for innovation and enterprise. Famine conditions developed, millions died of hunger during drought years, and the country became increasingly dependent on foreign food aid, which currently averages about two hundred to two hundred fifty million dollars annually. North Korea was the world's only remaining Stalinist state, run by a repressive government headed by Kim's son, Kim Jong-il, an extravagant playboy-cum-military ruler who maintained six hundred top families in aristocratic luxury while the bulk of the population languished in utter poverty with a GDP 1/47th the size of South Korea and a per capita income equivalent to that of the poorest countries in Sub-Saharan Africa. According to US Intelligence reports, North Korea has possessed the capability to manufacture nuclear weapons for at least a decade but had chosen not to do so until very recently. AIS⁷ stressed the importance of understanding the factors that led to that change in policy.

At this point Ray apologized for repeating facts which almost everyone was familiar with and would agree upon. He then proceeded to a second set of statements formulated by AIS⁷. The primary objective of the North Korean government was survival, not aggression. The North Koreans proudly proclaimed their self-reliance and looked down on their southern counterparts for having surrendered their autonomy and cultural integrity for the sake of economic gain. Aggressive pronouncements by the present US administration labeling North Korea as part of the 'axis of evil', especially statements by Vice President Cheney and UN Ambassador John Bolton following the US invasion of Iraq in 2003, have generated the strong impression that the US is seriously considering the possibility of invading North Korea to topple the existing government. According to AIS⁷, this is the principal and perhaps the sole reason for Korea's decision to test the bomb and a new generation of missiles. There was grumbling and even laughter in the room as Ray read out these and similarly provocative statements. Howard used his gavel to restore quiet and asked him to continue. Ray sensed that Howard was not nearly as displeased by his remarks as others in the room.

Ray then presented a series of thirty principles upon which AIS⁷ based its analysis, recommendations and prognosis. He and Dan alone knew that all of them had their origin in *The Book*, the *Archives*, and the *Messages*. A few of them are quoted here:

1. *A weak ruler may threaten but will not resort to force, for if he does he will be destroyed.*
2. *The strong cannot refrain from reliance on force, even when it is unnecessary and unjustified. They require no justification other than the fact that they are able.*
3. *The weak will not succumb to external pressure without a fight. Desperation strengthens the desperate. The weak can be most easily defeated by internal pressure generated by the rising prosperity of its own people.*
4. *Strength is no substitute for right. What we do today because we can get away with it comes back to us tomorrow in a manner from which there is no way to escape.*
5. *A clever ruler uses disinformation to confuse the enemy, but what do you call a ruler who believes and acts upon the disinformation that he disseminates to others?*
6. *All true growth is based on self-reliance. Psychological dependence on others for any reason retards real progress. Dependence on foreign aid is antithetical to real human development because it humiliates the recipient and fosters a sense of self-righteousness among the donors.*
7. *The willful, foolish acts of an antagonist—almost without exception—correspond to parallel actions by the other party. It is impossible to prevent a fool from doing harm to himself. He*

can only be controlled and corrected by discovering and altering the corresponding aspect within ourselves.

8. *Demonizing others is a devilish act that invites the presence of the very thing we condemn.*

Again there was murmuring and some laughter in the room. Ray quickly proceeded to AIS⁷'s prognosis, a brief extract of which is given below:

North Korea will test detonate one or more nuclear weapons in the very near future, but they will not initiate any offensive acts to utilize these weapons militarily, unless powerfully provoked by forceful threats or actual steps to attack or invade North Korea... In the absence of foreign interference, the Koreans can be peacefully reunified within a few years leading to a final resolution of the Korean conflict. The crucial condition is national pride and self-reliance, not dependence on foreign economic aid by the North or foreign military aid by the South... The menace of nuclear proliferation will defy solution and continue to spread until those who possess the power decide to fulfill their own commitments.

This was followed by a set of more than hundred recommendations. Ray presented only the first few and referred participants to their report for a complete list.

1. *Do not, under any circumstances, take any steps militarily that may be viewed by North Korea as initiatives aimed to physically eliminate or impair its capacity for self-defense.*

2. *Sign an official armistice agreement ending the Korean War.*

3. *Institute measures to completely remove foreign military personnel from the Korean peninsula as soon as possible.*

4. *Prepare a comprehensive plan to modernize agricultural production in North Korea to achieve food security. Involve China, Japan, India, Russia, South Korea and USA in formulation and execution of the plan. The objective should be to double food production within a maximum of five years so that all foreign food aid may be eliminated.*

Ray paused at this point and opened the floor for questions. A dozen hands went up immediately. The first three were representatives from the Pentagon, CIA and Ambassador Bolton's office. None of them had questions. They all merely took the opportunity to reject the analysis, prognosis and recommendations of AIS⁷ and to admonish the State Department for having even entertained input from non-professionals on this crucial issue. Several of them were obviously provoked by AIS's fifth principle, which meant that they understood it!

The first real question came from the Russian expert. He asked how MAI could account for the huge difference between the recommendations presented by Mossad and their own, considering that both were based on reports generated by AIS. At that point, Dan indicated he would like to speak. He said that they were unable to account for the vast discrepancy, but it probably could be attributed to the fact that Mossad may have unknowingly obtained a pirated copy of the software and relied on unqualified personnel to operate it. He refused to say more on that subject. Other questions were raised regarding the advisability of supporting a military regime that persecuted its own people. Ray referred the questioners to AIS's third principle.

When all questions had been answered, Ray said he would like to add one concluding recommendation by AIS⁷. The recommendation came in the form of an episode from Victor Hugo's great novel, *Les Miserables*. AIS⁷ recommended that the US Ambassador to Korea present a copy of this episode to Chairman Kim as a personal message from the US President. Ray hastened to add that AIS⁷ had given no explanation along with this recommendation.

Anticipating his imminent arrest and return to galleys where he had been once been imprisoned for eighteen years, the protagonist, Jean Valjean, withdrew from the bank the huge fortune of six million francs which he had earned as an industrialist after his release from the galleys. He carried the cash in a small case to an isolated place on the road to Paris and entered the adjacent forest looking for a place to bury it. An official road-mender cum unofficial highway robber happened to observe Jean Valjean and rightly surmised his purpose. The road mender-thief followed him into the forest to find out the spot where the treasure was to be buried, but he lost his way and arrived too late to witness the sacred burial. For ten long years the road-mender waited patiently and alertly for Jean Valjean to return so he could claim his fair-share of the bounty. Finally his patience was rewarded. He saw the gentleman walk up the road and proceed into the forest with a shovel over his shoulder. The road-mender

followed him, but in his anxiety not to be left behind, he took a straight path through the densest part of the forest, whereas Jean Valjean took an indirect but less encumbered route on the periphery. Hoping to save time, the road-mender actually lost it and arrived too late to witness the resurrection of the treasure. As he belatedly rushed into the clearing where the money had been buried, he saw Jean Valjean disappearing in the distance with a case in his hand. The disappointed thief threw down his staff, waved his arms in the air and shouted, "Robber!"

When Ray finished narrating the episode, there was a moment of silence in the room, followed by a peal of laughter from Ambassador Bolton's representative, who he later learned was considered a Korean expert. He shook his head approvingly and even smiled at Ray. Everyone else in the room was silent and looked bewildered, including Dan. It was already 11:00 pm by the time the meeting adjourned. Howard thanked all the participants. Dan and Ray rushed out of the building hoping to catch a red-eye flight back to SFO. As their car pulled out of the parking lot, they heard a loud screech followed by the sound of cars crashing. Ahead of them they could see a car had pulled out in the road past the wooden partition and collided head on with a bus—reproducing almost exactly the accident they so narrowly escaped a few weeks earlier. Ray wanted to get out of the car to investigate but Dan said that for security reasons it was not advisable. He alerted building security and several guards rushed out in a moment. A few minutes later Ray saw someone being pulled out of the car and being helped to an ambulance that had just arrived. It was Tony Preston.

They drove silently to the airport, just managed to catch a 12:20 am flight and boarded the plane as the door was closing. Once seated, Dan turned to Ray and asked about the parable. "Ray, I do not recall seeing that story in the report. Where did it come from and what does it mean?"

"Remember, Dan, that I called Anya and asked her to email me one more thing for the presentation? I told her to ask AIS⁷ what the President of the USA could communicate to Mr. Kim that would ameliorate his feelings and reduce tension over the nuclear issue. AIS⁷ chose this story as the message."

"But that makes no sense," Dan replied. "This story does not relate to the situation in any way. Why, if anything, we would run the risk of Kim thinking that someone is calling him a robber!"

"I had the same concern, when I first read it, Dan, until I remembered something Benny Choi had told me so many years ago. The parable is an old Asian device for communicating hidden wisdom and the greatest of all wisdom is self-deprecating humility. A wise man who wants to impress on others his wisdom and good intentions does so by use of a parable like this which is apparently ambiguous."

"So what, do you think, will Kim conclude from this parable? Dan asked.

"That by coveting the treasure which rightfully belongs to Kim, which in the story he fails to acquire, our president is admitting he has the mentality of a robber. And if Kim comes to that conclusion, we Americans will rise very high in his estimation because of our self-knowledge and humility!"

"That sounds very doubtful to me. Suppose it backfires and he comes to the opposite conclusion?" Dan persisted.

"Then Kim will understand we are strong and he will respect our strength."

"OK, let us assume all this is true, which I find very difficult to believe. Why, then did Bolton's representative laugh so loudly?"

"Either he understood the meaning of the parable and was marveling at AIS's insight into Korean culture or he actually thought AIS was calling Kim a robber. I have no idea which."

Three days later, on October 5, 2006, the North Koreans conducted an underground nuclear test, thereby proving conclusively that they did have the technology to defend themselves in case of attack by foreign powers. In the months that followed they agreed to the closure of their one nuclear plant capable of producing weapons grade plutonium.

Four weeks after the North Korean nuclear test, Dan and Ray received a cryptic note from Howard:

I did not have an opportunity on the second to thank you properly for the contribution you made to defusing a dangerous situation. We have stepped back from the precipice of extreme folly.

Along with the note was a check from the US Government for two million dollars.

Four weeks later, Bolton resigned as UN Ambassador after it became evident that the new Congress would not endorse his appointment. They received a short e-mail from Howard stating that when Kim heard that Bolton had resigned, he laughed to himself and murmured the word, “robber.”

PART IV: LIFE

82. Contagion

Vinay did not immediately understand the seriousness of the illness he had undergone or the extent of his good fortune that Anya had been able to get him treated so quickly. According to his physician, acute pancreatitis of the variety he experienced would have been life-threatening but for the prompt attention he had received. As it turned out, the events associated with his illness led him ultimately to understand some statements in *The Book* and the *Archives* which he had dismissed as metaphorical expressions when he first read them.

During the first nineteen days after his operation Vinay saw very little of Anya, though she called often and never failed to return late at night to check up on him. It was the first time he had seen her express the full depth of her affection, which was usually covered by a somewhat tough veneer of high intelligence and Slavic intensity. The up side was that it provided Vinay with a good opportunity to get to know Katia and forge a warm friendship with her. He had sensed for some time that she resented the time he spent with her mom and also the loss of her full attention during the limited hours they were together. Vinay tried to compensate by giving her all the attention he could muster from his bed. She gradually warmed to it and they spent many hours laughing and joking about a wide variety of things of interest to twelve year olds, but her favorite pastime by far was making fun of her mom and Vinay confessed he enjoyed that too.

Anya spent her nights at MAI working toward the deadline and only came home at about 10 am on the second to crash for a few hours. At 2 pm she had a call from Ray and was immediately given some further instructions about a last minute question to AIS⁷. Then she went back to bed and slept till dinner time. After putting Katia to bed, she came into the bedroom and sat down next to Vinay. She was smiling and happy but underneath he sensed there was something important she wanted to say. Vinay waited for her to speak up. Eventually a childlike expression of sadness came across her face, like that of a young girl ready to confess a great sin. "Vinay," she said, "there is something that has been bothering me terribly since you fell ill and I just have to tell you. You remember that morning when you told me you were going to the Bears game? I was so angry. I could not help thinking you were being very selfish going off to play when there was so much work to be done at both the office and the house. Oh, I know it was very silly and I realize now that I was being selfish in not wanting you to just enjoy yourself, but I need to tell you the truth of how I felt."

Vinay started to apologize for his thoughtlessness that morning, but she interrupted and would not let him continue. "No, Vinay, it's not an apology I want. That is not at all why I am telling you this now. It is I who have to apologize. You see I was so angry, I could feel it like a knot in my stomach. I know I was tired, exhausted, but still there was no excuse. When you came back to the house doubled over with pain, I felt so frightened and so sorry for the way you were suffering. Then when we got to the hospital and the doctor took it so seriously, I got really scared. During the operation, I just couldn't help remembering how badly I had acted and something in me told me I was responsible for the pancreatic attack. Oh, I know that may sound crazy, but that is how I feel. I needed to tell you I will never allow myself to get angry like that ever again." She bent over, kissed and hugged him gently, being careful not to put any pressure on his chest or abdomen.

"Actually, Anya, it is I who owe you an explanation and an apology. No, no, please let me speak. I too have had something I have been wanting to tell you since that day, but there never was a good time; and the truth is, I did not find the courage until now. Please remember that I am still a recovering patient and could have a relapse if placed under undue strain," he said, and then laughed. She smiled and looked at him expectantly, waiting for him to continue. "The truth is, there is a reason I did not invite you to the Bears game that day. Oh, I knew you would not accept, but I could not take a chance. I am thirty-five now and for the past five years my parents have been pressing me to get married and multiply like a dutiful Indian son should. I put them off for years with the excuse that I was struggling to ends meet and could not yet provide a secure home for a family. That worked for a while, but as soon as they saw that MAI was beginning to prosper, they started harping on the theme again at every opportunity."

"You've told them about us, haven't you, Vinay? At least you gave me that impression," Anya asked with a searching expression.

"Yes, I have spoken of you many times to them, but I knew it would be very difficult for them to understand our relationship. India is rapidly modernizing but with respect to marriage not much has changed since my parents first met. Anyway they kept pressing and pestering and I kept putting them off. I had been frankly hoping we could fly to Chennai for a few weeks around Christmas and then I could explain to them in person."

Anya smiled mischievously asked with in an innocent tone, “Explain precisely what, may I ask?”

Vinay laughed and returned to his narrative without answering her. “Anyway, a week before the game I had a call from Ganesh saying he had an extra ticket for the Bears game, and inviting me to come along. I said I would love to go, but I may need two tickets, in case you agreed to join me.”

“How very thoughtful of you! So you are not a totally heartless beast after all,” Anya said with a look of feigned surprise and relief.

“Don’t judge me just yet, Anya,” he replied. “You haven’t heard the whole story. When I mentioned bringing you along, Ganesh said that was not really a good idea. He then explained that he wanted to introduce me to his younger sister, Lakshmi, who had flown over from Chennai and was staying with him for a month. When he sensed I was hesitant to respond, he hastened to add that Lakshmi knew my family well and it seems my parents like her a lot. Suddenly I became alert and sensed there was more to this than a football game. I pressed Ganesh and he confessed that Lakshmi’s trip to the USA had been jointly planned by his folks and my own so he could arrange to introduce us and see how we got on. I suddenly realized I was being set up.” By this time in his narrative, Anya sat up in the bed and began to withdraw her hands from his arm where they had been resting, but then reversed the movement and pressed his arm gently. She scrutinized his face carefully and refused to utter a word till she heard what else Vinay had to say. “I thought it over, debated back and forth and finally decided that the best thing was for me to go, meet Lakshmi, then tell my parents she does not suit me at all and ask them not to waste time or money dispatching any more prospective brides to SFO. I did not like the idea, especially of keeping it a secret from you, but I could not bring myself to confess. I was afraid you would laugh at the way an Indian boy docilely accepts parental commands regarding who he should love. I could just imagine the jokes or the sarcasm—you know sometimes your sarcasm can cut through me like a razor. I dread it much more than an explosion of Slavic temper.”

Anya looked genuinely surprised, “I never knew you felt that way about it. I always thought sarcasm was a more civilized form of abuse. Now that I know, I promise to discard that weapon altogether from my repertoire and just blast you straight out when you deserve it!” She giggled and leaned over to hug him again. Then she asked, “I am glad to hear your confession and to learn about the romantic habits of South Indians, but what does all this have to do with pancreatitis?” she asked.

“Nothing directly,” Vinay said, “but everything indirectly. I could not let you think that you were responsible for my pancreatitis. I believe the real cause is that I agreed to meet Lakshmi at the football game. I got what I deserved. It’s my karma.”

“You are not serious, are you?” she asked.

“Of course, as serious as you are about being the cause of my illness. We know about these things in India.”

Anya laughed and looked at Vinay as if he were a silly little boy. Then a serious expression came over her face. “What about Lakshmi? Is she still waiting around for an interview?”

Vinay grinned. “No, don’t worry about her. She is out of the picture forever. I called and told my parents that the moment I even agreed to meet her for an introduction, I came down with a near fatal illness. My mother was horrified and apologized for her foolish initiative. I even extracted a promise that they would not try again.”

“Vinay, you weren’t serious were you? You don’t really believe that the illness could have come from her? Does your mother believe such a thing is possible? Then who knows what karmic misfortune she will attribute to me if we ever meet. It’s intimidating.” Vinay only laughed.

The next morning, Bill dropped by to say hello and see how Vinay was. He had been traveling a lot to keep up the market momentum while Vinay was recovering, so they had spoken often but not met for three weeks. He said he was glad to see Vinay looking and feeling much better, and then gave him a rundown on his latest round of discussions with clients. Anya listened for a while but when they turned to business, she said she would go spend some time with Kate.

After she left, Bill’s tone and expression changed markedly. He told Vinay how concerned he had been when he heard from Anya about his pancreatitis. He said he knew very well how painful and serious that condition could be because he had developed the same condition eleven months earlier. Vinay was surprised to hear that the condition was that common. Bill hastened to add that it was not that common. It afflicted only about $\frac{2}{100}$ of one percent of the US population annually. Vinay expressed amazement at the

rare coincidence of it striking both of them within one year. Then Bill said, “That’s what is bothering me. I don’t think it was a coincidence. I think you got it from me.”

Vinay said, “Surely you are kidding, Bill?” but when he looked at Bill’s face, he did not see him smiling. “That’s ridiculous. I mean, if you were walking around with TB or leprosy or polio or the flu and I got the same illness, I could blame you, though frankly I am not sure any of those diseases are really contagious except the last one. But pancreatitis? You have to be kidding me.” Vinay paused for a moment, laughed and continued, “I wonder what is going on around here. You are the second person to claim responsibility for my pancreatitis in the last twelve hours. It took me a long time to convince Anya that she was not responsible and I had to blame it on my karma and the bad vibes of a young Indian girl to accomplish it. The moment I convince her, you walk in. I know the Russians can be somewhat superstitious, but you, Bill, really! And I thought we Indians were the only people who believe in such stuff.”

“OK, Vinay, laugh if you want to. But I have seen stranger things. My own father suffered from severe lower back pain for years and it came to me at just the age it had affected him.”

“What is so strange about that?” Vinay asked. “Back pain can arise from an orthopedic propensity which quite easily can be passed on from father to son.”

“That’s just it, Vinay. It was not passed on from father to son. I caught it from a friend! I know it sounds crazy. But this is actually what happened. A close lawyer friend of mine went on a business trip with a client of his. The client suffered from chronic back pain. After traveling together for a week, my friend came down with paralyzing pain and was immobilized in a hotel room in Chicago for three days before he could even get on a plane and come home. My friend had no history of back pain. Immediately after he got away from the client and back home, he recovered fully.

“Three days later he came to meet me and we drove to the Russian River to go fishing. The moment I got out of the car and bent down to tie my shoe laces, I was paralyzed with pain in the lower back. I had never had such an experience in my whole life. My friend managed to get me back to the city and took me to the same orthopedic surgeon who had checked him out a few days early. They took some x-rays and the surgeon told me I had a degenerative chronic condition in a fairly advanced stage which would plague me the rest of my life and increase in intensity over time. Of course, I was devastated by the news, especially when the doctor said this is a chronic condition that would only get worse. When the doctor told me the diagnosis, I could feel the disease setting in and making a permanent home for itself in my body. I was immobilized for about two weeks before the pain subsided and for the next four years I suffered almost continuously.

“After four years someone gave me a book about the relationship between mind and body and how we create diseases by our thoughts and how even doctors create the diseases which they cure by naming them. I don’t recall the whole argument, but the book was filled with striking incidents of people who were cured by mentally and emotionally rejecting the notion that they were ill. I tried it and found some relief. I persisted and found the incidence of pain coming down. I resorted to prayer, meditation, positive affirmations, everything I could think of. Each effort seemed to lead to an improvement. Finally after a few months, I noticed that the pain was entirely gone. That was about twelve years ago. I finally shook the habit and got free. So when I first heard that you had come down with pancreatitis, I immediately knew the reason and the source.”

“But, Bill, I did not even know you had had pancreatitis. You never mentioned it. So how do you suppose the idea spread from you to me?”

“I don’t know, Vinay. Maybe it was a subconscious transmission. Maybe that is what all forms of contagion are all about. Anyway, I knew most people would laugh or wonder about this crazy lawyer who talks nonsense. So I mentioned it to Dan and asked whether he had ever read any passage in *The Book* which would explain what I had experienced. He immediately opened *The Book* and showed me a passage that fit the description. I cannot recall it precisely, but it went something like this:

All experiences without exception—thoughts, feelings, emotions, desires, even physical sensations and urges—are forms of energy, vibrating waves that move from one person to another, radiating out from centers of generation and spreading by a process of contagion. Fear spreads in that manner. So does joy and love. The contagion of any vibration in any situation is subject to precise laws that depend on the nature of the relationship, the attitudes and receptivity of the persons involved.

“Vinay,” Bill asked, “Haven’t you ever met a person who was a real *pain in the neck*?”

83. The Ultimate Test

By the time Ray and Dan landed at SFO it was 3:45 am PST. Other than a few hours of sleep on the plane, neither had been in bed for more than forty-eight hours. Dan dropped Ray off and then went home to get some sleep. At about noon his mobile rang—Dan had been too tired to remember to turn it off—and a strangely familiar voice asked for him by name. It took Dan a few seconds to connect the voice and the name—it was Kurt Levin from Mossad.

“Good afternoon, Mr. O’Hara. I hope I am not disturbing you.”

“In point of fact, Mr. Levin, I am trying to make up for several missed nights sleep and a long flight home last night.”

“I am so sorry to have disturbed you. I had no idea you had returned to California already. I had so hoped to meet you before you departed, but last night there was no opportunity. Perhaps it would be better if I called ...”

Dan interrupted him in mid-sentence to ask: “How is Tony Preston?”

“Ah, you already know about Tony’s unfortunate accident. Your intelligence seems to be better than ours. I learned about it only this morning. Tony suffered a few broken bones that will no doubt heal in good time. Nothing to compare with the wounds you inflicted during the meeting last night. I am afraid those will remain with him the rest of his life.”

“Mr. Levin, excuse me for being abrupt, but I need to get some more sleep and I cannot imagine that there is anything further we have to discuss with one another now that you assure me our one common contact is out of danger. Thank you for your call. Good day.” Dan hung up the phone and lay his head back down on the pillow. The nerve of that guy thinking that Dan would meet with him after they found out that Mossad was responsible for the break-in at MAI and most probably for the two break-ins at Dan’s home as well. Dan rolled over and tried to go back to sleep, but could not. Why had he called? What more could be possibly want? AIS⁷, no doubt. Well, they would not get it from him, and if Luis Gavoche had done his job well enough, they would not get it at all.

Unable to sleep again, Dan got up, showered, brewed some coffee and dialed Anya. They had been in such a hurry to catch the flight last night, there had been no time to call her. Dan knew that she, Vinay and Bill would be anxious for news of yesterday’s meeting. She did not answer her mobile, so Dan tried her home. It was Vinay who answered and Dan could hear Anya shouting something in the background. When he heard Dan’s voice, he put the call on speaker so Dan could hear them both and they both started speaking to him at once. In between words they were laughing in a playful manner. Dan had not heard either of them sounding so relaxed and cheerful in months. Just then he heard Bill’s voice too and an indistinct comment about a pain in the neck, followed by a stream of laughter. Tired as he was, Dan found himself laughing too. Their joy was contagious!

Dan started to report on the meeting but was interrupted three times in the first sentence by questions from his audience. Finally he decided that the phone was not the best way to do this, so he asked them all to stay put and said he would come over within an hour. They all seemed to like that idea better. Dan then called Ray, who was already up, told him about the call from Levin and agreed to stop by and pick him up on the way to Anya’s. A bounteous lunch was on the table when they arrived and the five of them sat down to their first meal together in months—other than at the office dining on pizza or Chinese food by the box, anyway.

Ray narrated events during the last twenty-four hours, starting with his impressions of the reports generated by AIS^{6b} and AIS⁷, and the decidedly unpleasant feeling he’d had walking into a room of ninety high level experts at State to make a presentation that he had barely had time to read, and still had not understood. He mentioned his surprise and anger at seeing Tony sitting there and hearing Levin quote recommendations from AIS⁶, as well as Dan’s retort to the questioner who asked them to account for the wide disparities between their report and one from Mossad which was apparently based on the same software. Everyone laughed approvingly when they heard how Dan had accused the Israelis of stealing and Tony of incompetence in one brief diplomatic quip. Then Ray went on to describe the thrust of his presentation along with the reactions and responses it had evoked. Ray concluded by explaining the idea he got on the airplane to ask one more question to AIS⁷ and related the story about the robber from *Les Miserables* which Anya had sent in response. They all seemed amazed to hear that mild mannered Ray Berger had actually recommended that story be presented to Kim. Ray insisted that Kim was more likely to

comprehend its real meaning than the American representative who related it to him. They did not know at that time how right Ray was.

Dan agreed with Ray that they had made some enemies last night who would not soon forget them, but perhaps also a few friends as well. Even though it was not clear if any purpose had been served by their frenetic efforts over the past three weeks, Ray sensed that Howard seemed to be satisfied—although the reason or the extent of his satisfaction was not clear. At that point Ray was flooded with questions from the other three. It was well past 3 pm, before they left the table and move into the other room.

When they were settled there, Dan mentioned the accident they had seen on the way out of the parking lot. Vinay and Bill both appeared startled to hear it. That made three times during the last three visits. Surely the police should have identified the problem by then and done something to prevent it. Vinay said it was an example of incredible stupidity. Anya said nothing but she had a curious, worried expression on her face. Dan then mentioned Levin's call to him at noon. Everyone was surprised. Ray was annoyed. They all seemed pleased that Dan had refused to speak with him. Bill suggested that if Levin ever called again, Dan should ask him to return their stolen property along with financial compensation for services rendered involuntarily. They all laughed, probably more out of relief and exhaustion than anything particular they had to be happy about. At least this harrowing project was over and they had something to show for their efforts. MAI had produced the first version of AIS⁷ in a remarkably short time. What normally would have taken four or five months had been done in twenty-one days. Even if AIS⁷ required significant refinements, they already had a working prototype that had withstood the most severe test imaginable right out of the box—a blind test against top US intelligence systems—both human and computerized. They may not have carried away the prize, but AIS certainly seemed to have held their own. Anya commented that some credit for the achievement should be given to AIS itself. In some strange manner the software seemed to be pointing them in the right direction, telling them what had to be done to help it evolve. Dan agreed with her perception, but silently offered his gratitude to *The Book*.

They had finished their report and discussion and were just chatting about less serious matters, when suddenly Ray recalled the incident about the diabetic meal he was served on the flight to Washington. Although Dan had been sitting right next to him, he had been too absorbed in studying AIS⁷'s report to take note of his discussion with George Burger across the aisle. When Ray related what Burger had told him, all of them had the same thought that had occurred to Ray when he heard it the first time. What were the odds?

Throughout the afternoon, Anya fed them with a continuous stream of beverages followed by a light dinner at 7 pm. By 8 pm they were all relaxed, full of good cheer and ready for another night's sleep. Dan dropped off Ray at his house and headed home. When he walked in and turned on the light, he was startled to find Kurt Levin sitting in his favorite chair. The sense of fright was real, but momentary. It was immediately replaced by righteous anger which surged up from his gut. But Dan quickly recalled that being alone in a room with a representative of Mossad was probably not the best time and place for self-righteousness. Dan walked into the middle of the room and asked Levin what he was doing in his house.

"Please, Dan," he said in a soft, friendly, almost apologetic voice, "be seated. I have come on a mission of peace, to apologize, to return something that belongs to you, to congratulate you on your remarkable accomplishments, to compensate you for services rendered, and—to seek your further assistance." Before Dan could respond, Levin lifted a small package that was on the table next to him. "First, in proper order, Ms Serova's hard drive and documents. Of course, we have made copies, I admit it. But I also admit that it was wrong of Tony Preston to have taken them and offered them to us. You may not believe this, but I assure you we did not commission him to take them. However, I confess that when he offered them to us on the sole condition that he be given a job along with it, the offer was too good to refuse."

"If you had wanted our services and AIS⁶, why didn't you approach us directly rather than dealing with a thief?" Dan asked.

"Well, we did, you see, but it did not work. Not directly exactly, but through Gregory Thompson. It was we—I—who first drew Thompson's attention to the important work you were doing at MAI and recommended that he seek your cooperation. It took a great deal of effort to convince him that a high tech start-up in Silicon Valley could help steer the great American ship of state. I am not sure he was ever fully convinced, but his superiors were and so he attacked the problem with his characteristic zeal, that is, with teeth and claws. Unfortunately for him, it was he who ended up needing time for recuperation. I regret to say he may never fully recover from the effects of his encounter with you. Despite appearances, you people seem to possess a gift for diplomatic finesse which is quite remarkable. I am curious to know where it comes from. From you, perhaps? Or perhaps from this remarkable set of books that you have?" Dan froze as he saw that Levin was pointing at the set of encyclopedia volumes on the wall shelf. Then he noticed for the first time that one of them was missing. Levin then reached over and picked up the missing volume which was

lying on the table where he must have placed it. It was not there when Dan had left this morning. “A truly remarkable creation, the encyclopedia. I share your preference for Americana. I always found it far more readable than Britannica. Not so stuffy, not so British, more direct. But I must say it has evolved quite a bit since I last referred to it. I had an opportunity to peruse this volume while I was waiting for you and opened it at random. It makes very interesting reading. Listen to this:

Information can be acquired. Knowledge can only be received. Information can be sought after, taken and absorbed. Knowledge can only be given willingly and received gratefully.

“It’s really quite profound, isn’t it? A new theory of epistemology, perhaps? But you should do something about the quality of print. It is badly faded.”

“In any case,” Levin continued, “please excuse me for wandering. As I said, I came first to offer my apologies—which I hope you will accept—to return your property, and to offer some modest compensation.” Levin removed an envelope from his coat pocket and handed it to Dan. It was a check made out to MAI from a financial services company in New York for ten million dollars. “As for my congratulations, it was a pleasant surprise to hear your report yesterday. I was deeply impressed by the knowledge base of principles underlying the architecture of AIS⁶, but I had severe misgivings about some of the conclusions and recommendations that it generated—the first version, I mean—and I could immediately see in the meeting that you have made enormous progress since then in ironing out the wrinkles. I would love the opportunity to hear from you how you have accomplished that remarkable transformation in so short a period, but let me save that for later. I hope Howard found time to thank you appropriately for your contribution last night. I do not wish to take credit for it, but I confess that we did play a role in urging him to pursue you, in spite of some initial reluctance on his part. I am sure that he is now quite pleased that he did.

“Oh, I see from your expression that you doubt my words. Perhaps you are confused because of the sharp differences between the recommendations I presented yesterday and your own recommendations. I can quite understand. The aggressive position I laid out last night reflected the official position of Mossad, not my own personal views. I have been feeling for a long time that we—by which I mean both Israeli and American intelligence services—have been caught in a time warp of self-consistent logic that is becoming increasingly irrelevant and even hazardous. Despite my efforts, I have been unable to carry conviction with my own superiors and I was hoping you—I mean AIS—could succeed where I have failed. I can’t tell you how disappointed I was when I read the report of AIS⁶. But I had been caught in my own trap. Having insisted that Mossad examine its findings and take them seriously, I had no choice but to cite them in the report as confirmation of Mossad’s position. I might add that the CIA and NSA are toeing virtually the same line. At that level, I am afraid it is a small world quite insulated from new perspectives, imprisoned and perverted by the logic of its own assumptions. I was hoping that AIS would help us find a way out. In that sense AIS⁶ was a terrible disappointment. In contrast, AIS⁷ is a breath of fresh air.”

“Since you continue to listen without interrupting me, I hope I may take that as permission to explain the true purpose of my visit?” Dan nodded his consent, but in truth half his attention was still focused on the volume of *Archives* which rested in Levin’s lap, and at anxiety concerning *The Book*. He had to assume it was Mossad which had twice invaded his home looking for it. He was waiting for an opportunity to confirm his suspicions. “To conclude my congratulations, I would like to say I agree entirely with AIS⁷’s analysis of the North Korean position. Your government is dangerously close to making a fatal error based on poor intelligence, faulty logic and some cavalier notions of international diplomacy. I believe that your report may have tilted the balance last night. The parable of the robber was a stroke of genius. I marvel that the software possessed the depth of insight to comprehend how differently Bolton and Kim would respond to the same story. I would love to be there when each of them hears it, assuming that ever happens. In any case, I sense that Howard was as pleasantly surprised and as pleased as I was by your findings.

“Now, with regard to the future. I would like to work with you—not personally, officially. A joint project between MAI and Mossad. Oh I know all about your hesitations. I have heard tapes of all your discussions with Thompson and Howard. In fact, I was in the room off camera when Howard spoke to you on September 12. Let us put all that aside. No more bargaining, threatening, piracy, and the like. We work together. Mossad provides that intelligence. AIS supplies the analysis. You name the terms. Of course, Howard has to be involved. Now that he has seen what you can do, he will insist upon it.”

Dan interrupted to ask Levin to come to the point. “I really do not see what more we have to offer Mossad or State regarding North Korea,” he said. “AIS⁷ has completed its analysis. Perhaps we will need to make some refinements and adjustments after the integrity tests are completed, but that is a relatively minor

issue. I doubt very much that our central approach will be very much altered by those modifications. It is now up to the government to act.”

Levin nodded his agreement, “I am not referring to North Korea, Dan. I am talking about Palestine, Al Qaeda, Iran, terrorism, the whole Middle East quagmire which is caught in an endless spiral of self-fulfilling prophesies. That is where we need your help. I wonder if anyone else noted the recurring observation in all of AIS’s reports on the US-Iraq problem. And I quote:

No permanent and satisfactory solution to the problem in Iraq can be formulated or implemented without addressing the root cause, Palestine, and the root cause of that cause, poverty among the Palestinians.

“I certainly noted it and agree. That is why I have taken great efforts to convince my superiors to let me approach you. Your report last night will complicate my efforts to some extent, because it flies in the face of what many believe at Mossad. But I hope we can overcome that resistance.

“By the way, Dan, I meant to ask whether you remember having seen me before yesterday. You may not but I remember the first time I saw you, Ray, Vinay and Anya together. It was at the Millennium AI Conference in Florida in 2000. We have more in common than you may think. I have been dreaming since childhood of an intelligent system that could help compensate for human ignorance, irrationality and willful stupidity. I was the next speaker on the agenda immediately after Anya. She was so bright and vivacious, that I don’t think anyone paid much attention to what I said. In any case, I recall coming to the buffet lunch the following day and seeing her sitting at a table surrounded by three other men. When I saw you and Ray yesterday, it suddenly occurred to me that it must have been you two and most probably the third was Vinay. I checked a group photo and sure enough I was right. So you see, we are not altogether strangers.

“I hope my proposal is now clear to you, Dan. I am offering you the opportunity for the ultimate test of AIS. I take the liberty to quote from a statement which Anya made during a meeting at MAI. Tony was kind enough to note it down for me.

Resolution of the Arab-Israeli conflict would be the ultimate test of AIS and its not going to be done without going to the roots of social culture.

“We are offering you that opportunity. Please consider it seriously. Now it is getting late and I know you must be tired after so many days of strenuous effort, so I will apologize again for my intrusion and excuse myself.

“I will remain here in Berkeley for two days. My card is there on the table with my cell number. Think about what we have discussed, consult your partners and please call me when you have made up your minds. Good night.”

Dan stopped him as he was going out the door. “I don’t suppose you will tell me how you managed to by-pass my new security system.”

He smiled and shrugged. “Nothing could be simpler. I knocked and you did not answer. I tried the door and found it open. I wondered for a moment whether you were actually expecting me. Even the best security works better when you follow the protocol. Since you mention it, I would like to clarify one misimpression which you undoubtedly have about me or Mossad. We were not behind the two break-ins at this place, nor was Howard or Thompson, for that matter. Howard was telling you the truth. None of us knew anything about this until you mentioned it to him. But, I do have an idea who may have been responsible, and will see if I can find out something more.” Levin handed Dan the volume of *Archives* which had been resting on his lap. “Meanwhile, don’t press your luck. I suggest you keep these old volumes very carefully. They don’t make encyclopedias like this any more.”

He again started to leave, then turnaround and spoke once more. “By the way, I am curious to know whether you have run any reports on next month’s Congressional elections. No, you have probably been too busy. Well, if you do, I would certainly be interested to see what AIS⁷ sees coming. Good night.”

84. Chance

First thing the next morning, Dan called Luis Gavroche and asked him to install a concealed wall vault in his office at MAI. Then he packed up the volumes of *Archives* and carried them to his car. Dan then placed a call to Ed Chow and asked him to start work on a new project on AIS⁷ to model the November 2006 Congressional elections. Levin had given MAI a good way to validate AIS⁷ against an objective result just thirty days from then. It would be worth the effort just to see how AIS⁷ performed.

Dan was very conscious of the fact that they had rushed work on AIS⁷ against an impossible deadline, cutting many corners and overlooking important issues. Even if the work they had done on personality proved to be sound, it was still incomplete. Howard or Levin may have been satisfied with AIS⁷'s prognosis and recommendations for handling the immediate issue in North Korea, but that was no assurance either that AIS⁷ was right or that it would perform as well on other complex issues where human personality played a central role. And the more he thought about it, the more Dan became convinced that personality was central to just about everything they were concerned with. It was quite contrary to the general efforts of social science to construct a model of the world in which individual personality could be factored *out* or reduced to statistical averages. Dan was convinced they needed a model that factored *in* and fully acknowledged the role of personality and individual uniqueness, even in fields like warfare and economics, where the outcome seems to be determined almost exclusively by macro-level factors and forces. Hadn't people like Napoleon, Morgan, Hitler, Churchill, FDR, Iacocca, Gorbachev and Welch proved that in some respect the influence of one individual could equal or determine the direction of an entire nation?

Dan was suddenly reminded of an episode from the *Mahabharata*. Duryodhana, the head of the Kauravas, had assembled a huge army to fight against Yudhishtira and his four brothers, the Pandavas. Each of the leaders approached other Hindu kings in an effort to enlist their armies to fight on his own side. Hundreds of thousands of warriors were thus pledged to fight in the war. Only the Yadhava clan, headed by their cousin Krishna, remained uncommitted. Yudhishtira sent his brother Arjuna to personally seek the support of Krishna. Duryodhana got word of it and rushed to Krishna's palace to speak with him before Arjuna arrived. Finding Krishna lying asleep on his bed, Duryodhana sat down next to him so he would be seen first when Krishna awoke. Arjuna arrived a few minutes later and sat at the foot of Krishna's bed as a sign of his devotion for a man he worshipped as Divine. When Krishna awoke, his eyes fell first on Arjuna and he asked what help he could offer his cousin. Immediately Duryodhana spoke up explaining he had come first in order to enlist Krishna's support for his side in the approaching war. Krishna faced a dilemma. He could not give his army to both his cousins, though both had a legitimate claim on him. Therefore, he offered a choice. He would give his entire army to one side. He would himself serve as charioteer to the other side, but would not actually fight. Since he had seen Arjuna first, he offered the first choice to Arjuna, who chose to have Krishna on his side in preference to his army. Duryodhana thought Arjuna a fool and went away jubilant at the outcome. In the end Krishna's presence proved more powerful than that of his entire army. It enabled the Pandavas to win the war.

So Dan knew they had much work ahead of them. It might take years to comprehend, assimilate and apply the innumerable insights into personality that could be found on virtually every page of *The Book*, the *Archives* and the *Messages*. Even with their aid, unraveling the mysteries of human personality and evolving formulations and algorithms to account for them was the work of a life-time. Dan prepared in his mind a plan of work for the next six months and proposed to discuss it with his partners later in the day. In retrospect, he should have known better. He had read, understood and seen enough during the past two years to realize that his logical plan was deficient. He wanted to focus on man, forgetting life. The examples were right in front of him. Even the invulnerable Krishna was struck down by chance. Like Achilles some two thousand years later, Krishna could only be killed by a wound to the heel of his foot. A stray arrow struck his heel and killed him. For all his greatness, what man can stand toe to toe against life? According to Wellington, Napoleon's presence on the battlefield was equivalent to the presence of a forty thousand men. As Hugo put it, "This individual alone counted for more than a universal group." But even he, even Bonaparte, was helpless against chance. Life defeated Napoleon at Waterloo by two brilliant strokes of fate—the weather and a road. A few drops of water determined the future of Europe. Heavy rain the night before the battle had softened the ground so that artillery could not advance until the sun had time to dry the field. Napoleon was forced to delay his offensive from 6 am until 11:30 am. Had he been able to sound the charge even an hour earlier, Wellington's army would have been routed before Prussian reinforcements had time to arrive. An untimely rain prevented it.

And if that were not enough humiliation for this colossal military genius who strode with abandon over all of Europe, a hollow road at the top of the hill did what the combined armies of the Austrian and

Russian Empires had failed to achieve at Austerlitz—it stopped the charge of Napoleon’s elite light cavalry. In spite of repeated questions by the Emperor, his peasant guide, Lacoste, insisted there was no impediment to the movement of French troops once they surmounted the hill to reach the plateau where Wellington’s army was waiting. One tiny piece of false intelligence undermined the brilliant battle plan of perhaps the greatest military strategist in history. When three thousand five hundred gallant horseman of the Guard reached the top of the hill, they confronted not a single enemy soldier or gun, nothing but a hollow road some twelve feet deep, invisible from below, which stood gaping immediately in their path and swallowed up wave after wave of the finest French riders and their horses without the firing of a single bullet until that hollow had become level with the ground of the plateau, a huge open burial mound. How often we see life sweep aside our mental conceptions with a flick of the finger or a puff of air. That is what happened to the romantic dreams of Othello and Desdemona, when the accidental fall of a handkerchief provided Iago with an opportunity to sow evil and wreak vengeance where joy and happiness were in bloom but a few minutes earlier. In MAI’s case it was not a handkerchief that fell, nor evil that sprouted in its place, but a whole succession of apparently chance events that altered their course and sent them sailing in an entirely new direction before they had time to reflect on the consequences. Perhaps the advocates of Quantum Theory and Chaos Theory might be closer to the truth than all the humanists, sociologists, psychologists, theologians, and spiritualists combined. Perhaps the ultimate determinant is not psychological or social conditioning, human intention or divine intervention, but simply chance. If that were true, then all MAI’s formulations and algorithms could never do more than approximate statistical averages. If that were true, their dream of a formula for human accomplishment could never be more than a set of commonsense rules, like the thousands of principles and precepts contained in so many classics on life, religion, military strategy, politics and business success—the Tao Te Ching on the art of life, Sun-Tzu on the art of warfare, Machiavelli’s advice to leaders, Metternich’s concept of balance of power which Kissinger so greatly admired, and the endless stream of modern business and self-help gurus. So they had to keep hoping that Heisenberg was wrong, that uncertainty was not the final truth. Is life an independent variable?

A week after the celebration meeting at Anya’s, her friend Vena called to invite Anya, Vinay and Katia for a weekend at her parents’ guest house in Hawaii where her parents owned a palatial estate house. Her plan was that they fly to Hawaii on thirteenth evening on her father’s private jet and return on the fifteenth night. Her parents’ home was in South Kohala on the big island. Anya was in her office putting the final touches on a customized program for the Indo-Pak-Iran pipeline project when the call came. The project was already a week behind schedule because of Anya’s preoccupation with the launch of AIS⁷. She was delighted by Vena’s invitation to get away for a few days with Vinay and Katia. After hanging up the phone, she went back to work and noticed an error message on the notebook computer she had been using so that she could carry work home with her and have more time with Vinay. She immediately asked a technician to check the computer. Twenty minutes later he informed her that her hard drive had crashed and it appeared unlikely that he could recover any of the data on it. In her rush to complete the project and her preoccupation with Vinay and North Korea, Anya had failed to back up the program for the past ten days. At least a week’s work had just been lost. She was furious with herself for her carelessness, doubly so because it meant she would have to cancel the Hawaii trip. She immediately called Vena back to inform her. Vena decided to postpone the trip. On fifteenth, Vena called her again. She had just received word that an earthquake with a magnitude of 6.6 had struck Hawaii with the epicenter very near her parents’ home. The house had collapsed, severely injuring the housekeeper who was the only one there.

Anya was deeply shaken by Vena’s news and called to tell Dan about it. “Suppose,” she said, “we had gone with Vena to the island and been caught in the house. That’s a terrifying thought. When the hard drive crashed, I cursed my bad luck and stupidity for not having kept a backup. But if it had not crashed or if I had kept a backup or if Vinay had not had pancreatitis—which is why I was working off my notebook—we would have all been in Hawaii during the quake. What appeared like a major blunder or misfortune until this morning, now appeared as great good luck.” Anya recalled the events a week earlier when Vena had called her. Why had the hard drive crashed just at that moment when she called? Could the two acts be related in any way? If a random electronic glitch could save their lives, then it could just as easily have taken them. After her conversation with Dan, she spent two hours discussing the whole subject over again with Vinay. She could not get it out of her mind. Vinay tried to persuade her that they should be celebrating their good fortune, rather than probing the mysteries of life just then, but Anya refused to drop the issue.

The next morning she requested a meeting with all the partners in the small conference room. When they were all seated, Anya turned on the projector and displayed a long list of apparently unrelated events from their past, starting with the meeting at the AI Conference in 2000, the fall of *The Book*, the discovery of the *Archives*, Vinay’s chance introduction to Courke on the return flight from Washington to SFO which resulted in the work for the Ireland Committee, his chance meeting with Leo Dekker on another flight that resulted in the contract with Accor, Ray’s broken leg, the death of Joe Burger outside his hotel room in

Chicago, the three accidents outside the State Department, the encounter with a man who was very likely Burger's father just last week, the broken hard drive last week and yesterday's earthquake in Hawaii. "Doesn't it strike you as odd and a little disconcerting," Anya said, "to note the central role played by chance and coincidence in our lives? Looking back on the events of the past six years, it appeared as if some god of chance was the single most important factor in determining the course of our lives and work. Was it chance that brought us to where we are today rather than our own conscious initiatives? Was it chance that took Ray, Vinay and Dan to Fort Lauderdale for the conference in 2000? I was the only one of us four who had consciously planned to be there. Was it chance that made *The Book* fall on Dan's lap? Was it chance that enabled him to stumble on the *Archives* and the *Messages*? Was it by chance that Vinay met most of our major clients while flying to and from SFO? Was it sheer chance that Ray's college roommate happened to be a Korean who was determined to initiate his American friend into the intricacies of Korean culture? Was it strictly coincidence that three accidents occurred in front of the State Department on your three successive visits to Washington, one of which nearly killed Bill and Dan and another which injured our ex-employee? Could the George Burger you met on the plane earlier this month really be the father of the Joseph Burger from Palo Alto who was shot outside Ray's hotel room door ten months ago? Consider implication of this fact with regard to the mission of this company. If chance and coincidence play such a large role in human affairs, how can we ever hope to evolve an effective program for human accomplishment?"

As Dan listened to Anya's line of thinking, he suddenly realized they had not yet addressed the central issue underlying their whole enterprise. They had not yet come face to face with life. Decisions, opinions, attitudes, organization, social processes, cultural factors, manners, behavior, character, personality, energy, aspiration, strength, values, and personal relationships were each extremely challenging pieces of the puzzle—each a world in and of itself within the larger world of human existence. But even if they could probe the depths and master the intricacies of each and every one of them, they might be left with nothing more than a profound knowledge of the pieces without ever understanding how all these aspects of human reality united to form a single whole. That is where they were very likely to end up some five or fifty years down the line, unless they could find a way to account for the wider field in which they all co-existed and functioned; unless they were able to prove that the random occurrences of apparently chance events actually conformed to a pattern; that is, unless they could dethrone Chance from the position of supreme godhead in the human universe.

If chance was the dominant factor it appeared to be, then MAI's success at the State Department meeting was at best an exercise in vanity and all their efforts would ultimately end up on a bookshelf along with thousands that had gone before it. But that was not their only difficulty. Assuming it was not chance that determined the outcome of all these events—then the challenge they faced was much more formidable. So far they had been probing the laws of individual, organizational and social behavior and discovering patterns in the confused mixture of ideas, motives, forces and actions. But if chance were not the ultimate godhead of human affairs, then what was? Unless they could discover universal principles and a process behind the appearance of chance, human accomplishment would remain what it was today—a field governed by half-conscious knowledge, instinct, intuition and plain good luck.

85. Law

Strength is the byword of life. Strength first, Strength last.

*Mathematics can represent any fact of life or truth of philosophy.
It represents the Absolute by Infinity.*

Messages

The following morning, when the partners convened again in the conference room at 8 am, the jovial spirit kindled at Anya's home two days earlier was noticeably absent. Ray looked particularly agitated and insisted on opening the meeting. "I have been up the whole night and have something I need to say. I don't know about the rest of you, but I found yesterday's meeting really unnerving. It challenged the basic intellectual premise on which our entire enterprise is based. It threatens to completely undermine the legitimacy of AIS and the future of MAI as a company. I spent most of the night rolling over in bed reviewing what we had discussed and the events of the past few months. It suddenly brought into relief the fact that MAI's whole enterprise is based on one thin, tenuous premise which can never be proven or reduced to mathematical exactitude. Like the nineteenth century physicists who were deceived by the apparently clockwork regularity of planetary movements into assuming that all life was governed by predictable patterns, the initial success of AIS in approximating a few major social movements has lulled us into believing that all life can be reduced to precise process and exact law. Quantum mechanics shattered the Newtonian world view of physics. Anya's observations removed the illusory blindfold that had made us lose sight of what every great thinker and writer of the past discovered for himself. The central role of chance that Anya discerned in our life and experience is the determining factor in all action and all accomplishment, both in life and literature.

"Take Shakespeare's *Hamlet* for instance. It is purported to be among the greatest literary works of all time. Why? The whole story hangs on an apparently chance incident. When Hamlet is dispatched by his evil uncle Claudius to England with the secret purpose of having him executed, the ship carrying him is attacked by pirates; and during the hand-to-hand combat Hamlet leaps aboard the pirate ship and is captured. When the pirates discover that their heroic guest is the Prince of Denmark, they agree to return him to his home in exchange for a reward. Having escaped Claudius' plot, Hamlet returns to Denmark and kills Claudius. The whole story centers around a flimsy chance event. Surely Shakespeare could have fabricated a more plausible mechanism for taking his hero back to Denmark. Why did he write it this way? What was he trying to tell us? I think he was trying to tell us that chance or providence is more important than human intention and initiative. Shakespeare is one of the greatest writers and *Hamlet* is one of the greatest literary works because it reveals the true nature of uncertainty in life. Shakespeare would have appreciated the quantum physicists for demonstrating this truth."

Ray's agitation increased as he went on with his argument. "I'm not just speaking of art. The life events Anya cataloged yesterday show the same thing. Regardless of what we do, chance intervenes and plays a major role. Depending on the flip of a coin, our actions may lead to grand achievements, making us look like geniuses, or utter failure. Life is precariously perched on uncertainty and indeterminism. I read last week about an incident in Churchill's life which shows how much depends on chance. During World War I, Churchill resigned from his cabinet post in order to fight as an officer in the trenches of Belgium. On the day of his arrival at the front lines, he receives an invitation to dinner from his commanding officer. While he was away at dinner, the area where his battalion was stationed was hit by heavy German artillery and virtually the entire battalion was wiped out. Churchill was saved by a dinner invitation and lived on to lead the allies in World War II. The fate of nations hangs on so thin a thread."

When Ray paused for breath, Dan raised his hand to indicate he would like to intervene. Breathless, Ray merely nodded his consent. "I agree with Ray that we are now confronted with the most critical issue for our company and our work. All Ray says is based on fact and appears to be true. But I believe there is another explanation for these same facts that is more logical and probable. Vinay told me about the coincidence of both he and Bill suffering from pancreatitis. The odds against any two people suffering from this rare condition in a single year are twenty-five million to one. What do we really mean when we say that the relationship between two events is governed by chance? Anya, you are a mathematician. Tell me, what is the likelihood that the three accidents outside the State Department which occurred during our three successive, irregular visits could have happened by a chance? Ray, calculate the probability that the man killed outside your hotel room during your only one night stay in Chicago could have the same name as you have and that you could run into his father on a flight from SFO several months later. *Even chance events have to be explainable by the laws of probability and all these events are too highly improbable to be so easily explained away.*

“What does the quantum physicist mean when he speaks of chance? He simply means that he cannot detect any forces intervening to determine the outcome and he does not know the laws governing the result. Therefore, he cannot predict what will happen. Chance, for the quantum physicist, means lack of knowledge, not necessarily a lack of cause and effect mechanism. According to Heisenberg’s uncertainty principle, you cannot precisely predict both the velocity and direction of a subatomic particle, because the energy used to measure the particle’s coordinates exerts an additional force that alters them. That alteration is not a chance event in the real sense, it is quite predictable and unalterable, only the impact of the alteration cannot be precisely determined. If someone is shot and falls down, we cannot say it is a chance event just because we are not sure precisely of the path of his fall. In fact, Heisenberg’s principle confirms that events are not chance. They have a cause. The act of measurement is an act of consciousness. Consciousness is the cause. We may not be able to accurately predict the result of that cause in most cases, but at least we can recognize the source of the determining force. We might not be able to predict that Thompson’s heated anger was going to precipitate a near collision, but we can certainly become aware of its source after the fact and be alert to the danger in future.

“Tolstoy was profoundly right when he wrote in his epilogue to *War and Peace* that there was no such thing as chance, only events whose cause we do not perceive and understand and therefore appear to us as chance. When I went home from Anya’s two nights ago, the last thing I expected to find was Kurt Levin sitting in my favorite chair. I did not expect it and would never have predicted it, but that does not mean it was a chance event. It only means that I was ignorant of his relationship with MAI and AIS until after he explained it.”

Bill raised his hand, signaling Dan he wanted to speak. “Forgive me for interrupting, Dan, but I fail to catch your point. What possible mechanism can explain the coincidence that both Vinay and I suffered from the same rare medical condition? What possible mechanism can explain the arrival of the pirate ship precisely at the critical moment when Hamlet uncovered Claudius’ plot to have him assassinated? Do you really think there is a connection between the commanding officer’s dinner invitation to Churchill and the German artillery bombardment? Even by the wildest stretch of imagination, I cannot see any possible mechanism linking these events.”

“Bill, for a long time, neither could I. Now I see it is because I was looking for the wrong type of mechanism. I was looking for a physical connection—a sequence of physical cause and effect linking these events. Now I realize my mistake. *Life is not physical.*”

Silence descended. A wrinkle of perplexity spread across Bill’s forehead. Ray pursed his lips and squinted in bewilderment. Anya stared into Dan’s eyes with a searching look. Only Vinay seemed undisturbed by Dan’s words. After a moment, a slight knowing smile creased his lips. This was something he had heard before; something he knew, or knew that he knew, but could not express or explain it. It was a knowledge he was born with. “What you say about life is a direct parallel to what the physicist says about dark matter and dark energy,” Vinay added. “No one has ever detected either of these things, but current scientific theories of the universe depend on their existence as central theses. According to recent estimates, only four percent of the total matter and energy in the universe is visible, 22 percent is dark matter and 74 percent is dark energy. The astrophysicist infers the existence of dark matter and energy because without it the universe does not make sense. Without it he cannot explain why the universe is expanding at its current rate or behaves in the manner it behaves. Just like gravitational fields, they are subtle and can only be inferred from their predictable effects on visible matter and energy.”

“That’s a good analogy, Vinay, although it is partial. What *The Book* calls life is not a subtle physical energy field. It is not dark matter or zero point energy. These are still physical or on the borderline of physicality. Life is a force or energy field of a higher frequency on another plane.”

Bill was the next to speak. “I don’t get it, Dan. If life is not physical, what is it? My body is alive and my body is physical. I can see, feel and touch it. I can sense its breathing. I can move it. Your statement makes no sense to me.”

“Bill, of course, your body is physical and your body is alive. The real question is, what do we mean by life? Is life simply a material thing—a set of chemical reactions and nervous impulses? Biologists and neurologists would have us believe so, but I think they have missed the point. Let me give you an analogy. If I turn on the TV set in the corner, we will see people moving and hear them speaking. The TV is certainly material. But the images and sounds we hear are only forms of energy that appear to be physically real. You and I know that the people and action are not taking place inside the TV set. They are only waves of energy being projected by the TV set. Just because life expresses in material forms, does not mean that life is material. That is the error that modern science has made. Just because its methods and instruments are best suited only for studying physical phenomena, it wants to assume that everything that exists is only

physical. According to science, your affection for your children, your highest ideals and your deepest faith are only chemical-electrical impulses. In fact, there is no you, other than your body. But what if science is totally wrong? What if life and mind are not material things at all, but only forms of more subtle energy or consciousness that generate sensations and movements in the body the way the electromagnetic waves generate images and sounds in the TV?"

Bill shook his head again, closed his eyes and crinkled his forehead even more tightly to signal his confusion. Then Ray spoke up. "Dan, I still don't think you answered the question. If life is not physical, what is it?"

"Before I answer, let me ask you a question, Ray. What is gravitation?"

"Well, physicists are not really sure what gravitation is. But according to field theory, gravitation is a field of subtle forces that acts upon material objects."

"Is it physical?" Dan asked.

"Its effects are physical or can be detected physically. But the field and the action of the gravitational force itself cannot be directly perceived by physical instruments. We can only predict its existence from the results that we observe based on the law of gravitation. We say that gravity causes objects to move in a particular manner even though we cannot detect a physical mechanism of cause and effect."

"Exactly. Life is like gravity. It is a field of subtle forces whose action we cannot observe physically. We can only observe its effects. We can also predict its effects, provided we know the law or laws that govern it. The only difference between life and gravity is that the number of forces and complexity of their interaction is much greater. The motion of the earth can be very largely predicted based on the influence of our sun, although the other planets in our solar system, neighboring solar systems, even our own tiny moon do exert an influence on its orbit. In life, we are surrounded by multiple influences that act upon us and each other, so it is more difficult to predict the outcome. While the influence of the sun depends on only two factors—its mass and distance from the earth—both of which are constant or vary predictably over time. But in life, many factors influence the interaction of people and events and the intensity of their influence can vary enormously. Even the direction of the force they exert can change and reverse itself in an instant, as when our attitudes change suddenly from positive to negative or vice versa."

Bill listened intently. The muscles around Ray's mouth began to relax. Vinay leaned back in his chair with a pleasant, cheerful expression in his eyes. Anya's cheeks acquired a faint pinkish glow. Ray still looked somewhat confused and unsatisfied. Shaking his head, he said. "Dan, you speak of subtle forces. Just what do you mean by a subtle force?"

"Ray, I mean that when you feel love for your children, you are releasing a life force that cannot be detected by any scientific instrument. But it is intensely real to you and very real to your children as well. Even if you do not express that love in words or actions, your children still receive it and feel it. It nurtures and protects them in life as surely as any physical force. When Vinay feels determination to make a sale, that determination grips his whole being, stimulates his mind, releases his emotional energy and moves him into action that accomplishes results. It is his determination that accomplishes, not his actions. If he were to take the same actions without that inner determination, the results would be very different. Anya was right in perceiving a relationship between the anger she felt toward Vinay and the abdominal pain he developed, even though that anger did not express in words or action. It acts directly, subtly, and generates a result as surely as the sun influences the movement of the earth and other planets."

Again, Ray inquired. "Ok, let us assume there is a subtle force of life that acts in a manner similar to the gravitational force. But what is the law that governs that action?"

"It is the law of cause and effect in life. Each action releases a vibration of life energy that goes forth and generates a response from the life around us. It is what Hinduism refers to as karma," Vinay replied.

Dan picked up the thread. "It is just like in physics, Ray. If I push against this table, what is the result? It depends on the intensity of the force that I exert against the inertial force of the table and the direction in which that force is exerted. If I push the table at an angle, the result is different from the result if I push head on. If I exert myself to lift the table, the result is different from what happens if I push laterally or try to press it down. The basic law of life is the same. The result depends on the relative intensity and direction of the forces involved, only the forces are subtle, psychological, not physical, and their direction is determined by our conscious and subconscious attitudes and intentions.

“Hamlet intensely wanted to avenge his father’s death but he was inhibited by doubts and the sanctity of the crown. Once he uncovered Claudius’ assassination plot, those inhibitions disappeared. The arrival of the pirate ship was not an accident. It was a direct result of his intense aspiration to return to Denmark. Churchill’s escape from the artillery attack was not providential. It was a direct expression of his very powerful determination to fight and win the war. The strength and direction of the force determine the result both in matter and in life. But there are other laws of life as well, just as there are other laws of the physical world discovered by modern science. *The Book, Messages and Archives* identify hundreds of major and minor laws of life, far more than modern science has identified to describe the workings of physical nature. Life is a more complex plane than matter.”

Dan looked around the room for questions and saw a thoughtful expression on every face. “What we are talking about is not something new that we have to discover for the first time. This knowledge is as old as mankind. Only the very success of our materialistic, scientific approach has prompted us to discard and reject ancient wisdom in favor of a far more limited form of empirical knowledge. That works well for studying the physical world, but it is a complete failure when it comes to studying life and human beings. When we were growing up, how many times have we all heard expressions such as *c’est la vie*, life is like that. All traditional wisdom recognizes that life exhibits characteristic patterns of behavior. Life has a character, just as people do. The laws of life are the ways in which we describe life’s characteristic modes of response to human beings and events.”

“So, Dan, you are saying that our challenge is to identify those laws and convert them into mathematical algorithms,” Ray said.

“Yes. That is how I see it,” Dan confirmed.

“Then, what about Levin?” Ray asked. “The forty-eight hours he gave us is almost up. How do we respond to his offer?”

Bill interjected. “It seems to me we have too much on our plate already. The last thing we need to add is the Middle East quagmire. Isn’t it enough that we are trying to attempt the utterly implausible without taking on Mission Impossible at the same time? The results of recent work with our business clients are already bringing in three or four new business opportunities a week. We will be severely pressed to staff up to handle this high margin commercial business. We said our objective was to create a strong financial cushion and it is working. Don’t you think we should focus on that first, that and the development of AIS⁸, before we take on religious fundamentalism? If life is going to be the key to the next version of AIS, then doesn’t it make sense to focus on developing AIS⁸ before we take on a problem that has defied a solution for more than two millennia?” Ray and Vinay nodded their agreement. Anya remained silent.

Dan expressed a different view. “I agree, Bill, that we are already taxed to the limit by current projects and expanding opportunities. Vinay’s health has already given way. Ray and Anya have been stressed to the limit by the pressure to complete AIS⁷. If you all decide to slow down the development process, I will not disagree. But I think there is something else we should consider. What Bill says would make perfect sense, if it were possible to develop AIS⁸ in a vacuum, but I very much doubt it is. Our subject is life and we cannot study life in a vacuum. Just as North Korea helped accelerate work on AIS⁷, so we could accomplish in weeks what would otherwise take months, I believe that Levin’s offer is exactly what we need to expedite development of AIS⁸. *I believe it comes in response to our aspiration and determination to keep moving forward.*

“Sure, the Middle East *is* Mission Impossible. But not any more than AIS⁸. We are trying to do something extraordinary that has never been done before, and it will take both extraordinary circumstances and extraordinary effort to achieve it. I believe Levin has presented us with those circumstances, so I am inclined to accept his offer without reservation. Rather I would say that Life has presented us with the very conditions we need to fulfill our aspiration to complete AIS⁸. That’s the real reason I do not want to turn down his proposal. But the energy and effort have to come from us, and I cannot ask others to give more when you are already giving your all. So I accept whatever you four agree on.”

Silence prevailed for several minutes. Each person in the room glanced furtively around at the others and then seemed to look within themselves. Anya was the first to speak up. “Having spent my youth living in an authoritarian country, I never learned to believe in majority rule; and what I have seen since coming to the USA has not led me to change that view. I am ready, Dan. When and how do we start?”

Bill smiled and turned to Vinay. “So much for the American ideal of free choice, Vinay. I think you have just seen a clear demonstration of what you can expect in future. Be forewarned!” A gentle laughter arose from someone, rippled from one person to the next, circling the room as an infectious vibration,

gaining intensity with each successive revolution. Within an instant, all five were smiling broadly and knowingly shaking their heads in astonishment at their own decision to proceed.

As they were about to adjourn, Anya said, "One more question, Dan. How do you propose we proceed in studying and codifying something we cannot see, feel or measure? What methodology will we adopt? What data will we examine?"

Dan replied, "Before we can study life, we have to become conscious of it. We can see life, Anya, in the events that occur all around us. And we can feel it too. Try to discover a relationship between what you observe going on outside and what you feel going on inside yourself. That will be a good starting point. As for measurement, the magnitude of the results is the real measure in life—not what we think or feel but what we accomplish. Lets all try to observe the life around us and compare notes in twenty-four hours."

Ray turned to Dan, "Better call Levin before he leaves town. I'd hate to make him turn around and come back again. Also, I have had just about enough of the State Department for the time being, so I'd prefer to meet him here."

86. Palestine

Fundamentalism breeds fundamentalism.

To be able to see the Good that the Evil act moves is wisdom.

Messages

Two hours later, Kurt Levin arrived at the office for a meeting with the partners. Dan asked Levin to explain precisely the type of project and collaboration he had in mind.

“Gentlemen, the Middle East problem confronts us with the profoundest ironies of life. In Biblical times, Moses and the other prophets of the wandering tribes of Israel spoke to their people of a Messiah—an anointed one,—who would come to redeem them. Jesus Christ, a Messiah of Jewish birth, did come with a message of love and was repudiated by the Rabbis and persecuted. Jesus founded a new religion. The church established after his death condemned his Jewish brethren as the epitome of evil and persecuted them on and off for 2000 years, culminating in the Holocaust. Seven centuries after his death, another Prophet came and founded Islam in order to restore the original monotheistic faith of Abraham, Moses, and Jesus. Now the descendants of all those people have returned to the place of their origin and are engaged in a bitter struggle over a few square miles of barren land they regard as holy. Each lays claim to greater truth and greater right in the name of the one God. Each of these claims are supported by fundamentalist groups spread throughout the entire world willing to sacrifice their work, their money and even their lives for fulfillment of their own particular version of that truth. From this tiny center of the conflagration, tension seeps out in every direction and ignites passions, hatred and violence that have gradually spread from the Middle East around the world. Their impact is felt by everyone who watches the daily CNN report on car bombs in Baghdad, emergencies in Islamabad, sectarian violence in Hyderabad or simply passes through an airport security check. Our clerics, politicians and statesmen offer no remedy but to arm and fortify ourselves to defend against greater violence to come. Our collective response to fundamentalism and terrorism is to declare war on it and that war only seems to fuel more violence. This, in brief, is an oversimplified description of the dilemma.”

“Pardon me, Kurt, are you saying that you have come here to propose that we try to solve a problem that has defied solution for two thousand years?” Ray asked.

Levin shook his head. “No, not quite that. I am saying that the world needs a new understanding and approach to the problem of fundamentalism, regardless of its source—Christian, Jewish, Islamic, Hindu, Buddhist or whatever. I am saying that we desperately need a new approach to an old problem. We need to understand the origins of fundamentalism, and the reasons why it is raising its head so violently at this point in human history - when the forces of enlightenment and progress have reached unprecedented intensity. I am saying that we need fresh insights into our collective past that will enable us to deal more intelligently and effectively with the present situation. I am not interested in assigning blame for what has happened or exonerating anyone from guilt. I believe this problem contains within itself profound insights into the nature of man and God and our evolution toward the light. Personally, as a Jew, I have many unanswered questions. Why did many of my own ancestors repudiate a Messiah of love who carried a message of hope for all? Why was Jesus crucified? Why did the chosen people have to undergo two thousand years of persecution? Why are they now in a position to deny others the very rights that were denied to them for so long? Oh, I know what the organized religions have to tell us—my own as well as the others. But to me, that is so much superstition and propaganda, not true knowledge. If it really was knowledge, it would have the power to resolve the situation, yet all those who claim that knowledge seem to be absolutely powerless. In short, *I am looking for a knowledge that is power. Not power to conquer, but the power to heal. I am not an ideologue of non-violence, but violence has been tried and has failed countless times. Not the small, self-righteous, egoistic good that only spawns greater evil in response, but the greater Good that transforms evil and converts it into an instrument of progress.*”

Levin suddenly stopped speaking and looked around at the three men sitting across the table who had been listening in rapt attention. Moments passed. No one moved. No one spoke. Eyes met, explored each other, and exchanged a silent understanding. When it became clear that Levin had said what he came to say, Ray and Bill turned from him to Dan, who eventually took the cue and responded. “Kurt, I doubt very much we can help you, but for my part I am willing to try. But I confess I am really puzzled. I cannot understand why you think we can be of help or why you have chosen to come to us on this issue. You are acquainted enough with AIS⁶ to know we are very far from possessing the key to the mysteries of life and human nature or a magic bullet with the power to solve the problems that plague humanity. At best we are like the Wright Brothers back in 1903 struggling to get their first flying machine off the ground. What makes you think we can help?”

Levin nodded and a faint smile crossed his lips. “It is not AIS⁶ or AIS⁷ that has brought me here or even the prospect of AIS⁸ which I suspect may be already under development. It is *The Book* that has brought me here. It is *The Book* the makes me believe I have come to the right place because this is the place *The Book* has come to.”

“Kurt, two days ago you assured me you had nothing to do with the break-in attempts at my place, but you seem to have an awful lot of faith in *The Book*, which you have never even seen. I assume you heard something about it from Tony Preston, but Tony himself has never even seen *The Book*, as far as I know, and certainly did not exhibit the capacity to understand its value if he did. This does not add up.”

Levin smiled again and replied. “I did not learn about *The Book* from Tony. I do not believe he ever even mentioned it. His only interest was in the software.”

“Then who told you about it?” Dan asked. “Was it Thompson?”

Levin shook his head. “It was I who told Thompson about *The Book*. I was forced to tell Thompson, because he was so very skeptical about MAI and AIS. I had to tell him that I had seen *The Book* and knew its power.”

Dan startled. “You say you have seen *The Book*? That’s impossible. It has not been out of my possession for a moment during the past three years.”

“Before that. I saw it before that. September 10, 1989—to be exact—at a Sunday market in Berlin. I had spent the past two years searching intently for something—I did not exactly know what. I was looking for answers to questions I could not even clearly formulate. My work at Mossad left me disquieted and unfulfilled. I wanted so much to help my country, but realized I did not know how. Everything we did only seemed to aggravate our troubles and cause greater hardship to the Palestinians. It was easy to cast blame on both sides, but it was hard to see a way out. *The Book* made me feel there was a way.

“I had come to Berlin on an assignment for the Israeli Government. Over the weekend I had some time to kill, so I strolled around the city and came upon a vendor of used books at a Sunday market. I found *The Book* on the old man’s cart, picked it up and read brief portions of the text for ten or fifteen minutes, mesmerized by what I read. I could not fully understand the meaning, but I felt I had stumbled upon something profound and decided to purchase the book. Suddenly I realized that I had left my wallet in my other jacket at the hotel. I told the book vendor I would return to purchase it within an hour, but when I reached the hotel I found instructions for me to immediately contact my American counterpart at the CIA. He wanted to meet as soon as possible. I hurried over to his office at the US military complex. He showed me a report predicting the imminent collapse of the East German government and the possibility of a massive refugee problem. Quite frankly the idea sounded a bit absurd. Though in hindsight it was easy to see what was coming, I don’t believe anyone anticipated the chain of events until they were actually taking place. That evening, defying protests by the East German government and the Soviets, the Government of Hungary announced that it was opening up its borders for East German refugees migrating to the West. I understood immediately that this event could have a significant impact on Israel. If governments and borders started collapsing, it could result in a massive wave of Jewish emigration from Eastern Europe. It was an unbelievable development. Then the protests began and the border crossings. From a trickle it soon became a flood. Senior government officials resigned and confessed their sins. Gorbachev resisted intense pressure to interfere. Then miracle of miracles, the Wall came tumbling down. I was there during the entire period.

“For the next three days I was so occupied by the rapid development of events that I did not even remember the book. Then the words I had read in the book came back to mind. I knew I had come very close to finding an invaluable treasure and it had slipped through my fingers. For a while I held out the hope of quickly finding the book vendor or at least locating another copy of *The Book*. The following Sunday I went back to the Sunday market in search of the book vendor, but he was not among those who had assembled. On three other occasions I found the gathering of carts, but the old man with the books was never among them and none of the other merchants could tell me anything about him. After that, winter set in and the market was suspended until spring. I then began searching small bookshops in West Berlin, but without success. On my return to Israel, I personally conducted a thorough search of web-based content looking for fragments of text similar to what I recalled reading in the shop. I even assigned an assistant to conduct a search of all library databases in the USA, UK, India and other English speaking countries. I still came up empty-handed. I never forgave myself for missing that opportunity and I never gave up hoping it would come again. It may sound crazy but I had an uncanny feeling that *The Book* was somehow connected with the revolutionary events that took place in Berlin.”

Still puzzled, Dan asked “Whatever gave you the idea that we had found *The Book* that you had seen in Geneva?”

Levin continued. “About two years ago I was given a copy of your report to the Courke Committee on Northern Ireland. My work at Mossad was to explore the potential of artificial intelligence for national security. Mossad has always kept close tabs on the Irish problem because of the obvious parallels with Palestine. Especially the religious issue and the apparently intractable nature of the conflict. When our office heard about your report on Ireland, it immediately obtained a copy from the British authorities. When the section officer assigned to monitor Ireland discovered that the report was based on analysis by MAI’s AIS¹, he sent a copy to me. Reading the introduction to the report, I came across the following sentence:

Complete knowledge is knowledge that leads to accomplishments that have no negative consequences or side-effects.

“My heart jumped when I read those lines. I immediately recalled having read them before and I knew where. They were lines from *The Book*. I was sure of it. I remember having read those very lines at the Sunday market in Berlin and being startled by the idea that there could be knowledge without negative consequences. After all, I was living in the midst of a technological jungle in which knowledge was always a double-edged sword that cut both ways. Our task at Mossad was to get as much of that knowledge as we could and to deprive our enemies of it as far as it was in our power. We knew that knowledge was power, but the only knowledge we ever talked about could always be used both ways—for good or for evil. I suddenly had the feeling my prayers had been answered, that I might get a second chance to find *The Book*.

“The rest is fairly straight-forward. I set up a special desk that began monitoring every assignment that MAI undertook and every word you spoke to the press. We managed to get copies of almost all the reports you generated for private clients. We monitored your calls and messages. Of course, I could not tell my superiors the truth about *The Book*. They would never have believed me or taken it seriously. So instead I told them that your work was on the leading edge of artificial intelligence and that it was vital for us to keep close tabs on it. What I told them was true, but it was not the whole truth. Within a few months I had gathered enough information to confirm my suspicions. I was all but positive that you had access to a copy of *The Book*.

“It was then that I got the idea of approaching you through Thompson to see if we could learn something more. Of course, I made him understand that it was AIS we were really after, but when that did not seem to work, I also told him that AIS was based on a book which would provide us with the key to duplicating and extending your work. I never expected him to threaten you as he did, but quite frankly I was desperate to get hold of it. I would have done almost anything.”

“Even steal it?” Dan asked.

“I have already told you that it was not Mossad or I, or to the best of my knowledge the US Government that broke into your apartment on those two occasions. The truth is that we had searched your place on at least ten other occasions during the previous year and turned up nothing. Of course, we never left even a slightest clue to indicate that we had been visiting. Finally I concluded that you must be carrying *The Book* around with you. When Thompson inadvertently mentioned it to you and I saw your response on the video camera, I knew I was right. I confess that our crack team completely overlooked the Americana during all their searches. I had no idea those documents you refer to as the *Archives* even existed until two days ago. I was looking for something very small, not thirty whole volumes.”

“Well, when you did discover the *Archives*, why didn’t you just walk away with them?” Dan asked.

Levin laughed gently and replied, “I admit I was sorely tempted to do so. But there were two reasons I did not. Over the past few months I have spent a lot of time asking myself why I lost contact with *The Book* in the first place and why I was unable to renew that contact despite six years of serious pursuit. Sitting and listening to the two of you in Washington last week, I finally came to the conclusion that it was my own attitude that stood in the way. I understood that I was looking for a very special knowledge and I finally concluded that I needed a very special attitude in order to find it. Looking back to 1989, I realized that my aspiration had been real, but my attitude had been defective. I really wanted that knowledge, but I wanted it in order to possess it. I wanted it for the power it would give me. I wanted it for self-aggrandizement, for ego, not for Good. That is when I decided to alter my approach and come to you directly speaking the truth and nothing but the truth. I could easily have walked out with the *Archives* and you never would have known I had come to California. But the *Archives* is not *The Book* and even if it had been *The Book* I had found, I would not have tried to remove it. I was convinced by then that nothing good

would come from trying to acquire the knowledge of *The Book* in the wrong way with the wrong attitude. So I have come to you and here I am.”

Dan was still not satisfied. “You said you thought you had an idea who may have broken in those two times. Who do you suspect?”

“A few months after Mossad starting tracking your movements, we noticed that we were not the only ones interested in surreptitiously monitoring work at MAI. At first we thought it was a single group of Iranian origin. Later we realized it was not one, but at least three different groups. By our latest count there are at least five. I have separate details working to track down all of them to their source. In addition to at least one Islamic group, there is a Protestant Group out of Northern Ireland, a fundamentalist Christian group with a base in Atlanta, and a Catholic Group out of the Vatican. So you see, you have a lot more in common with fundamentalism than you may have thought. At least fundamentalism thinks it has more in common with you. The fifth appears to be a group with commercial interests from Western Europe, but we have not yet been able to work back from their intermediaries here to locate their origin. As I say, we know there are at least five, but there may be more.”

“But you have no idea which of the five may have broken into my apartment,” Dan asked again.

“I believe at least one of them was the Islamic group. But keep in mind, you are only referring to the two break-ins that you know about. It is perfectly possible, indeed likely, that all five have dropped in on one or more occasions. Your offices seem to be fairly secure since you brought in Luis Gavoché, but perhaps someone got in before that. I was not ever really concerned about that. Having seen and tested AIS⁶, I was confident that the software posed little danger to our national security. I never expected that you could eliminate the weaknesses in earlier versions and evolve AIS⁷ so rapidly. Anyway, now both Mossad and the US Government have a vested interest to ensure that no one else gets hold of the software by force, so I don’t think you need to worry much about further break-ins at the office.”

“There is one thing that still bothers me,” Dan said. “You’ve explained how you learned about *The Book* and why you sent people to search for it. But that does not explain why others broke into my apartment, and not into any others’. What were they looking for? Could they also know about *The Book*? And if so, how? And even if they did, what is their interest in it? I cannot imagine fundamentalists of any strain being attracted to the truths in *The Book*.”

Levin’s face assumed a grave look. “I have spent much time during the past two days wondering about the very same questions.” As Levin rose from his chair, Dan noticed that he looked younger than he had when they met two days earlier or even than when he walked into the office three hours earlier. His face was brighter. The wrinkles were less apparent. The grayish shade of dullness Dan had seen earlier was less prominent. There was more energy in his movements and his voice. Levin extended his hand to Ray and Bill and then turned to Dan, who did not immediately extend his own to grasp it. Instead Dan bent down and withdrew *The Book* from his briefcase beneath the table and placed it in Levin’s hands. Levin grasped it gently, examined the cover and back of the book and then slowly opened and leafed through some of the pages. A moment later, he smiled and looked up. “It’s the same *The Book*.” Then he added, “I mean it’s the very same *The Book*, the same actual volume that I handled at the Sunday market in Berlin. I recognize the crease on the back cover and the stain on one of the pages. It’s unmistakable. This is the very same *The Book*!” Then after a pause, “I always wondered how many copies there might be. I have a feeling this is the only one.”

Dan nodded his head in agreement and thought to himself that he and Levin had a lot more in common than he ever imagined and probably much more to talk about than even Levin suspected.

87. Action & Reaction

Psychological attention is force of life.

Archives

The following afternoon the five partners met again. Dan opened the meeting, “Levin’s first contact with *The Book* occurred seventeen years ago. Our first unconscious contact with Levin occurred at the AI Conference six years ago, before we even knew each other. We may not have noted him, but he noted us even then. However implausible it may seem, we have to either accept it as a fact of life that such unconscious connections do exist and try to explain it, or reject it as a fabrication that Levin has created in order to make us believe we are destined in some way to work together.

“Yesterday afternoon I was not so sure. Now I am virtually positive that Levin has seen *The Book* before. He recalled to me some ideas from *The Book* that have not appeared in any of our written materials, ideas I have never even discussed with the rest of you. Whatever he read in those fifteen minutes in Berlin seems to have been printed indelibly in his memory.”

“So what do you conclude from that?” Vinay asked.

“I believe it illustrates one of the laws of life I was referring to yesterday. In the physical world of matter, a relationship is created between two objects or events by their proximity in space and time. When I hit the table with my hand, I create a relationship between my fist and the table because both are present in this room at this moment. I cannot create that same relationship with a table in the next room or with a table that was here yesterday and has since been moved. But in the plane of life, relationship is based on psychological rather than physical proximity. The more people, objects or events are related by virtue of a common idea, interest, aspiration, attitude, desire, fear, hatred or other psychological factor, the greater the relationship and attraction between them in life. That is why when we speak or think about people, they suddenly call, write or appear on our doorstep and when we are afraid of something, we tend to attract the very object of our fear. It does not happen every time, because other factors and laws are also at work, but to the observant instances of this principle are very commonplace. Psychological relationship in life attracts objects and events to the same time and place physically. It brought the four of us together in Florida and it brought Levin there too, although none of us were fully conscious of the common strand of seeking that we shared. Because we were not conscious, our contact was casual. It took a year for us to join together. It took another four years for Levin to find us.”

“Literature is filled with similar instances that appear as chance or coincidence until we perceive the deeper law at work. In Hugo’s *Les Miserables*, the ex-convict Jean Valjean, who has assumed a new identity and become mayor of a small town, saves a poor cart driver named Fauchelevent from being crushed when his wagon collapsed. After pulling him out, he also finds employment for the old man as a gardener at a convent in Paris. Fauchelevent is filled with gratitude. Years later, Jean Valjean’s true identity is exposed and he seeks refuge in Paris. The police eventually locate him and pursue him on a chase through the streets of Paris until Jean Valjean is backed into a cul de sac with no apparent means of escape. He scales a high wall and lands in a deserted garden. It turns out to be the very convent where he sent Fauchelevent, who finds and takes him in and saves his life by concealing him from the police. Jean Valjean may have forgotten Fauchelevent many years ago, but Fauchelevent and life have not forgotten him. They return at an equally crucial life-threatening moment to return the favor.”

“What you say about Levin makes sense to me, Dan,” Anya said. “But what bothers me is what he said about the fundamentalist groups. According to the same principle, *The Book* seems to be a point of intense interest for a great many people and our contact with it is placing us at the center of a vortex of forces. We don’t know who these people are, what they want or what they will do to get it. Levin’s assurance that Mossad and the CIA or some other US agency are looking out for us like guardian angels is not very reassuring to me. In fact, it’s frightening!”

“You are right, Anya,” Vinay replied. “What is puzzling is that none of those groups have done anything so far to reveal their presence or make a demand. I wonder why?”

“Perhaps, because they need us,” Bill added. “Maybe it is not *The Book* they really want at all. Maybe they are waiting for us to translate the knowledge from *The Book* into a more perfect AI product. Maybe they are waiting for us to complete AIS⁸ or even AIS⁹.”

“If that is the case,” Ray interjected, “I am not so sure we should be in such a hurry to complete anything. Maybe we should slow the whole thing down or even abort.”

“Or maybe we should at least try to create that impression,” Vinay added.

A vibration of anxiety seemed to fill the room. Then Dan resumed: “That is not all we need to be concerned about. There may be another mole at MAI. Tony may not have been the only source of the leaks. Something Levin said to me this morning put me on alert. He asked when I thought our US election projections would be ready. He seemed to know for certain that I had ordered Ed Chow to set up the project. When I asked Levin how he was so sure that I had taken his suggestion, he said that Mossad had intercepted a message to that effect sent by the Iranian group to their headquarters. What bothers me is that outside of the five of us and Ed, no one else in the company even knows about it and I used a secure line to call Ed, one that Luis assured us could not be unscrambled. So how did the Iranians find out unless Ed told them?”

Anya shook her head and said, “I absolutely *refuse* to believe Ed would do that. There must be some other explanation. Maybe one of us mentioned it to someone else in the company.” Vinay, Bill and Ray all shook their heads. Ray appeared particularly agitated by the prospect of a leak.

“Anya has raised an even more important issue that we need to examine carefully,” Dan continued. “She is right. *The Book* seems to be the center of a vortex of life forces. That may sound like a fancy metaphor but it actually begins to look that way to me. Think about it. Because of *The Book*, Levin has been engaged in a seven year quest that has only now brought us into direct contact. But all this time his seeking has been exerting a subtle influence. It brought him into physical proximity with us at Fort Lauderdale. It may have been the reason why the four of us met there too. It led to the creation of MAI and AIS. We now know that through Levin’s initiative, *The Book* was also responsible for our contact with the US Government and our involvement in the North Korea project. Yesterday we learned that it may also be the reason that five or more other groups are covertly monitoring our every word and action, from outside and perhaps from inside MAI. We need to find out why.”

Pin-drop silence filled the room after Dan spoke. An atmosphere of concentrated intensity welled up. There were no more quips, smiles, casual words or restless gestures. Everyone sat motionless, expressionless, eyes straight ahead staring at Dan or at the table in front of them.

A full ten minutes passed before Bill broke the spell. “Maybe it’s for money. Maybe they have understood just how much money AIS is capable of generating. I confess it is only just becoming real to me the past few weeks when I look at the initial financial reports from our new clients. If current trends are maintained, our profit-sharing consulting contracts could generate a net income of one billion dollars or more over the next twelve months. It does not take much imagination to understand the potential if we move up to companies in the Fortune 500 list. We could be talking about revenues of ten billion dollars or even hundred billion dollars in a year or two. All we need to do is keep refining the software and hire some top consultants from McKinsey or other firms who have high level contacts with those clients. That could certainly explain why we are attracting so much attention.”

Ray shook his head in disagreement. “Sure, that could explain why one or more business groups are interested in MAI and AIS. But it does not explain why they should be interested in *The Book*. And it does not satisfactorily explain why fundamentalists of all descriptions are hovering around us. There must be another answer.”

Dan reached down into his briefcase and withdrew a sheaf of papers. He flipped through several pages skimming the text, then stopped and looked up. “I think I may have the answer. Listen to this statement from the *Archives*.

Action and reaction is a law of life as it is a law of matter. Opposites in life attract just as positive and negative electrical and magnetic poles do materially. Every psychological advance in human nature requires an alteration in the existing structure of human personality and evokes a force of resistance from those elements which are organized at the previous level and refuse to change. Similarly, every positive social advancement requires a change in the subconscious organization of society. The force for progress has first to overcome the inertial resistance and active opposition of reactionary forces that seek to move in the opposite direction. The faster and greater the social progress, the greater the intensity of the resistance.

“Think about what we are really trying to do here,” Dan continued. “We may have started as hackers or entrepreneurs trying to create a neat AI product or make a lot of money. But we are way past that point now. *The Book* has propelled us on a different trajectory. Whatever the deficiencies in AIS⁷—and I believe it is still full of bugs and inconsistencies—like Bill I am just becoming aware of a greater potential than I ever dreamed possible just a few months ago. Only the potential I speak of is not monetary, or not just monetary. Future versions of AIS have the potential of radically accelerating the progress of human civilization in virtually every sphere of activity—in terms of knowledge, science, technology, global governance, economic prosperity, peace, security, health, psychological fulfillment—you name it.

“If that potential is real, then according to the passage I just read, it could very well raise the opposition of conservative, reactionary, primitive forces—forces that are opposed to new ideas, greater international cooperation, cultural admixture and intermingling, peace, prosperity, etc., in the same manner that the advent of the French Revolution was perceived as such a threat to monarchical rule in Europe that all the kingdoms of the continent joined forces to eradicate Napoleon and restore monarchy in France. Christ was crucified because his new teaching threatened the entrenched power and privileges of the temple priests. Galileo was declared a heretic and imprisoned for challenging Church doctrine. The same reactionary impulse compelled President Jackson to lead the bullionists in an attack on paper currency and the Bank of the United States, setting back the development of a modern monetary system in the USA by decades. Eighty years after the Declaration of Independence affirmed the equal and unalienable rights of all human beings, conservative forces in the traditional South rose up united to oppose the abolition of slavery.

“Just think about the changes that AIS could bring about if we are able to take the product to its logical conclusion. Then think about every force in the present society that exists and thrives on the status quo—those who possess the monopoly on power, prestige, money, knowledge. Isn’t the real source of fundamentalism resistance and opposition to the future in one form or another for one reason or another? There was a time when man dominated woman in most of the countries of the world. Even in liberal England, a married woman was considered to be the property of the man without even the right to decide where she would live. She wasn’t even supposed to think or have opinions of her own. Women could not even vote in England or the USA until one hundred fifty years after the adoption of the Bill of Rights. There are still countries where they remain in that position today. If it took one hundred fifty years for that evolution to take place in a liberal democracy like America, then imagine the intensity of the resistance it had to overcome. If AIS speeds up the process of social evolution, then it will inevitably raise and have to overcome forces of commensurate strength in a much shorter time. That means the strength needed to do it will have to be much greater, which takes us back to the recommendations of AIS³ that we need to vastly augment our overall strength by building a huge cash reserve. Money is a form of strength and social power. AIS seemed to be warning us even then that we would need much more strength to handle the reactionary forces that would rise up in response to its development, not just for investment to grow the business.”

Bill intervened. “Dan, I think what you say makes a lot of sense, but I am still getting confused as to whether the opposition is to AIS or to *The Book*. At first you seemed to be saying that it is *The Book* which attracted the reactionary forces to us. Now you seem to be saying it is AIS. Which is it?”

Dan replied, “What is AIS? It is the embodiment of the knowledge of *The Book*. *The Book* is a single object written in a philosophical language that will be unintelligible and inaccessible to most people. AIS is an operational product that can be reproduced at no cost and distributed to every individual and organization in the world. AIS is the power of *The Book* made manifest and practically usable by anyone anywhere regardless of their level of education or present standard of living. *The Book* contains the *knowledge* of accomplishment. AIS converts that knowledge into *usable power*. *The Book* is akin to the theory of electricity. AIS is like the electrical power plants that apply the theory to light and energize the whole world. The difference is that there are a few thousand power plants in the world, whereas we have the capacity to infinitely multiply AIS and provide a power plant for personal accomplishment to every man, woman and child on earth.

“Superficially AIS may appear to be the greater threat to fundamentalist forces that needs to be contained. But once AIS is fully developed, it will be impossible to contain it because even a single copy can be multiplied infinitely. That is why, if they want to stop it, they have to go after the source. They have to get their hands on *The Book*.”

Vinay spoke next. “If that is the case, why haven’t they done it already? All they seem to have attempted is a few sloppy break-ins at your place Dan. They haven’t even looked for it elsewhere. Why?”

“To answer your second question first, perhaps because they know *The Book* is with me and so there is no reason to waste time looking elsewhere,” Dan said.

Anya spoke softly but could not disguise the anxiety in her voice: “How could they possibly know that for sure, Dan? The five of us plus Lauren and Limpia are the only ones who know it. Limpia did not even understand English at the time and I am sure Lauren would never have violated her pledge of confidentiality.”

“All the same, it is better we speak to both of them and make sure,” Ray added. “I speak better Spanish than the rest of you. I’ll do it today.”

Bill picked up the thread. "I'd like to address Vinay's first question. Why haven't they already done it? That is a very good question. One possibility is that, like ourselves, they have only very recently become convinced of just how important and powerful *The Book* and the software may be. We know that Mossad has been monitoring us for at least a year, but we do not know how recently the other groups started listening in. Another possibility is that the presence of Mossad or the CIA has acted as a shield which we were not even aware of until now. A third is that at least some of these groups are not only interested in stopping others from getting a hold of AIS, but also interested in getting the finished product for themselves. Therefore they wait."

"Whatever the reason, we cannot assume we will be as fortunate in future as we have been up to now," Anya insisted. "We must assume the threat is real and act immediately to reduce or eliminate it. But how? We have talked about copying *The Book* to ensure a copy is preserved, but we know that is not possible. We cannot place it in a vault, since Dan needs daily access to its contents. We can't place Dan in a vault either!" Everyone laughed for the first time during the whole meeting, a laughter filled with tension and looking for relief.

No one seemed to have a ready answer. Then Bill spoke up, "Ask Levin. He is a security expert. I tend to believe him when he said he could have taken *The Book* by force long ago. He said he knew that Dan had it with him during the meeting in Howard's office, but asked Howard to mention it at the time only to show how much they did know. If what Levin has said is true, he is as interested in keeping *The Book* safe as we are."

Dan nodded his head in agreement and said he would discuss it with Levin during their dinner meeting that evening.

88. Correspondences

As long as you understand events as reflections of what you are, you will have the power to accomplish anything and master any difficulty.

Archives

The following morning the five partners convened again along with Levin, whom Dan had invited to join them. Dan began by summarizing his dinner conversation with Levin the night before. “Kurt has provided some useful inputs that I hope will lower the anxiety level around here to some extent. I will let him repeat what he told me. Kurt.”

“First, I would like to thank you for your vote of confidence. That is how I interpret the invitation to attend this meeting today. I know you have plenty of reason to question or suspect my motives and intentions. The fact that I am here means you are at least willing to give me the benefit of the doubt. I’m grateful and intent on demonstrating your trust is well placed.

“Dan conveyed the essence of your discussion yesterday regarding the five groups which I said are closely monitoring MAI and its activities. Although our information is still sketchy, I think I can answer some of the questions you have raised. The Iranians are here because Mossad is here. It is that simple. I am not sure they have any idea why we are really here. Obviously they know about AIS and have obtained copies of your reports on Iraq, Palestine and related issues. They most probably know about the North Korea meeting convened by Howard and MAI’s successful performance. I see from your faces that this surprises you. Please do not underestimate the intelligence gathering capabilities of the Iranians or anyone else in the Middle East. Remember, they are descendants of the Persians who ruled the entire Middle East and a large part of Central Asia and the Caucasus for three hundred years—that is about twice as long as the British Empire lasted at its height. You don’t build an empire of that magnitude and longevity without understanding the importance of intelligence and espionage. I see no reason to believe that they know about *The Book*. They probably think we are after AIS⁷ and, therefore, would like to get a hold of it also or prevent us from doing so. On at least one occasion, I believe they alerted the police and foiled our own effort to circumvent Luis Gavoche’s security arrangements at MAI.

“Then there are the groups from Ulster and the Vatican. That is fairly easy to explain in view of your work on the Northern Ireland issue. I see no reason to think that the Protestants know about *The Book*, but with the Vatican we cannot be sure. Remember, neither you nor I know how old the book is, how many copies there are or how many other people know of its existence. One plausible hypothesis is that the Vatican has known of its existence longer than any of us, even knows its author perhaps, and has been working to remove copies from circulation, if, in fact, there is more than one copy. They too would be fully aware of Israeli involvement and fully alert to the possible motives for our action. What they may do depends on how much they know and how concerned they are about it. I don’t have sufficient information to say more.

“The US fundamentalist Christian group out of Atlanta may be more problematic. There are any number of possibilities. They have placed people in all branches of the US government and have access to virtually all the intelligence reports that the Government acquires. We have to assume they know about *The Book*, but we do not know what they think about it. My gut feeling is that this group is of the greatest concern. The passion and intensity of their beliefs rivals that of any group in the Middle East and they tend to place great emphasis on the written word. You may not know it, but groups of this type have been extending strong, silent support to Israel for decades. It is not just Jewish money and lobbying that has skewed American foreign policy on the Middle East. There are fundamentalist groups that still hope to win back the Holy Land in a modern version of the Crusades. If for any reason they think *The Book* is connected with that quest, they will stop at nothing to get their hands on it. They may very well have people on MAI staff.

“The last is the business group, probably from Germany. I speak of one, but there could be more. I have to assume their motives are monetary and their interest would center around AIS, rather than around *The Book*. In sum, there may be two or three groups actively concerned with *The Book* and another two or three primarily interested in AIS. That is about all I can say at the moment.

“As far as what you can do about it, I would recommend that you keep *The Book* at MAI. That is by far the safest place. Double your security arrangements—both internal and external—without making that too visible. I can offer some backup protection for the office and to some extent to Dan, but my advice would be that he limits his movements to an essential minimum until we know more.

“Dan, why don’t you move in with us?” said Anya in a voice rich with concern. “I don’t like the idea that you are the only one of us who lives alone. We have plenty of room and I would sleep a whole lot better knowing you are safe.”

Dan smiled warmly. “You might sleep better, but I wouldn’t. Not knowing that I was bringing potential trouble to you and Vinay. No thanks, Anya. And no offense to you, Kurt, but I can’t help feeling this whole security thing is being blown out of proportion. Anyway I think the easiest and best thing is for me to temporarily shift to the office. Since we have working almost around the clock, there are always a few dozen people here and the number is going to increase rapidly. The cafeteria food is better than my own cooking, anyway.”

Then turning to Ray, Dan asked, “What about the leak? Did you learn anything from your meeting with Limpia and Lauren?”

Ray looked pale and responded by slowly shaking his head. “Nothing much. I do not believe that Limpia even knows about *The Book*. The only thing she knows or cares about is keeping the place spotlessly clean. That’s what she was told when she joined us and that’s what she thinks about all the time. As for Lauren, she states emphatically that she has never mentioned *The Book* to a single soul. I believe her. So I am afraid that’s a dead end.”

“Ray, are you feeling OK?” Dan asked. “You don’t look well. In fact, you look exhausted.”

“Must be the tension surrounding these issues. I didn’t sleep well last night. In fact, I haven’t slept well for weeks.”

“Excuse me for interrupting,” Levin said. “Can you be absolutely sure that no other employee knows about *The Book*?” He looked around the room at each of the five partners and each nodded in confirmation. “Then what about someone other than an employee? Have any of you told anyone else?” Again he looked around the room. Vinay nodded emphatically. Anya did too. Ray gave a slight affirmative nod, almost as if he was in a daze.

The conversation turned to Tony Preston and his role in connecting MAI and Mossad. From there it drifted to his accident at the State Department. Then Bill mentioned to Levin the fact that this was the third traffic incident they had been involved with at the same spot on three successive visits to Washington. Levin listened with surprise to such an improbable coincidence. Then Dan intervened. “We have to assume that it is not a coincidence at all.”

Misunderstanding Dan’s intent, Levin responded, “Dan, caution is good but I advise you to avoid giving free reign to your imagination. What possible motive could anyone have for precipitating these three events? From what you say, you were only directly involved in one of them.”

Dan replied, “Sorry, Kurt, we have gotten so used to looking at things based on principles of life, that I overlooked how my statement might sound to someone unfamiliar with the thought. I did not mean to imply that anyone consciously arranged those accidents. I simply meant that they did not happen by chance. They reflect a pattern of life. They are related incidents and that relationship is explainable by a law.”

“What relationship?” Kurt asked. “What law?”

“Let’s assume for the moment that the three incidents are external reflections of the balance of life forces during our three visits. When we made our first visit at Thompson’s request, we did not understand the seriousness of the situation we were walking into. Thompson tried to gently pressurize and threaten us. By the time we went back for the second visit, we were more alert, but still not sufficiently so. My apartment had been forcefully entered. *The Book* warned us of conflict. Vinay and Anya were threatened by the immigration authorities. Thompson pulled out all the stops in demanding that we sell AIS⁶ to the government and he became furious when he discovered that his threats would not work because we had taken precautions to ensure the software could not be isolated and confiscated. That was when the first incident occurred in which Vinay, Ray and I came within a hair’s breadth of being killed. We can say the accident was an accurate reflection of the intensity and direction of the social and psychological forces ranged against us. The accident did awaken us to the seriousness of our predicament. That’s when we came up with idea of going public with Bill’s help, to the press and to the UN.

“The next day I received the first call from Howard’s office. Thompson was out of the picture. Our counter moves seem to have increased our strength and reduced the level of threat, but the situation was far from pleasant. That’s the period in which Rana was putting heavy pressure on Ray to get out of MAI. The day I met Bill at Ray’s house, she was extremely upset. When Bill agreed to join us as a partner, our hands were strengthened, psychologically, organizationally and financially. But we were far from secure. That is

when we found out our phones were being tapped and we cancelled the scheduled meeting with Howard in order to get him to withdraw the surveillance. When we finally did go to Washington, Howard tried to pressurize us and then tempt us by offering to buy MAI for what looked then like an enormous price. He also tried to intimidate me by mentioning *The Book* and asking if I was carrying it with me. There was no overt argument, no angry outbursts, but the situation was far from pleasant. When we left the parking lot, we saw that a two car head on collision—most probably fatal—had occurred in the same place as our narrow escape. That accident did not involve any direct danger to us, but it showed that the situation was still rife with potential danger.”

Levin interrupted to say that he recalled the incident. In fact, one of the drivers was a man who was working for Thompson at the time we had our confrontation with him and had been directly involved in monitoring MAI. He was severely and most probably permanently injured in that accident.

“That suggests the balance of strength was gradually shifting in our favor,” Dan remarked. “In fact, after that the relationship with Howard improved dramatically and we were brought in for the North Korea project. The third incident occurred when we came for our presentation on North Korea and saw you, Kurt, and Tony in the room. As we were leaving the building, we heard a screeching sound and followed by a crash. That is when Tony was injured. The man who had betrayed us was exposed publicly during the meeting and then physically injured immediately afterwards.”

“And then dismissed from service, altogether,” Levin added.

“Don’t you see a pattern? The three incidents reflect the relative situation for us at those times. The outer events correspond and reflect the subtle balance of life forces impinging on us and our relative capacity to respond or defend ourselves from them.”

“Now that I think of it, I see a similar pattern from my side,” said Levin. “Two things happened the day you met Thompson for the second time and he ended up bursting out in anger. First, I received a phone call from Thompson that morning just as I was getting in my car heading for State. Thompson’s voice was highly irritated. He told me of a botched assignment by one of his senior staff members who lost his temper while dealing with a colleague at the Pentagon on a delicate issue where State was depending on voluntary cooperation from Defense to handle a diplomatic incident involving Syria and Israel. Thompson’s official had threatened the guy at the Pentagon and the man hung up on him. Thompson was so frustrated that he shouted at his staffer and threatened to fire him on the spot. He called me to complain and ask if I could try to set things right with the guy at DOD. While he was speaking, it suddenly struck me that his staffer’s behavior was exactly like Thompson’s own. It was so obvious, but Thompson could not see that his assistant merely modeled his behavior after Thompson’s. That was the first correspondence.

“The second was that I nearly had an accident too. I was just exiting the Beltway headed for State, rehearsing in my mind what I wanted Thompson to say to you. I did not expect him to lose his cool the way he did or so blatantly threaten you, but I did intend for him to apply as much pressure as possible through compelling arguments. As I was going over those arguments in my mind, at one particular point I felt a powerful mental impulse, kind of like an arrow aiming my argument at your mind. As I turned a corner, a car suddenly pulled out from an adjacent side street heading right for me. I jerked the wheel and moved half-way out of my lane into on coming traffic in order to avoid hitting him. Now that I think about the incident, I see it was a very accurate indication of what was going to happen when you met Thompson. He would try asserting the arguments I supplied him in a violent manner and you would forcefully rebut them with your own subtle threats. It turned into a head on collision just narrowly avoided. So that’s what *The Book* means by correspondence. I remember reading the word back in 1989 but I never had a chance to learn what it meant until now.”

An imperceptible wave of mental energy and a comfortable sense of familiarity pervaded the room. Levin had caught the spirit of the group within a few moments of joining them, as if he were an old hand rather than a new-comer. Although he had read *The Book* for only fifteen minutes seventeen years earlier, his mind seemed to be steeped in its thought and alive to its inspiration. Without any actual discussion, a silent consensus arose and was communicated from one to the other, a feeling that Levin somehow belonged to the group. At the same time there was a mild sense of anticipation that they were on the verge of a breakthrough. No one wanted to break the spell, so they called for lunch to be brought in and continued a discussion without agenda along a line of inquiry that had no apparent direction, boundaries or objective—but which everyone present felt was leading them precisely where they wanted to go.

89. Karma

All energies in Nature must have their natural consequence.

As is the nature of the energies so must be the nature of the results.

The Book

Every force seeks to perpetuate and multiply itself.

Contact of force with force generates action and reaction.

Good and evil are relative terms. All action, knowingly or unknowingly moves toward an ultimate Good beyond all relativities.

Nature permits wide swings, but ultimately restores a balance.

Archives

The discussion acquired a pace and rhythm all its own, speeding up and jumping from one major topic to another like giant strides along a mountain range from one peak to another without ever descending into the valleys between. Then without warning, it suddenly swooped to the valley floor and focused total attention on the minutest issue and the most intricate detail, then just as suddenly rose up to great heights from which it acquired an almost cosmic perspective. In between there were long pauses of total silence, comfortable leisurely moments that seemed to refresh their mental energies for another rapid advance.

After one of those pauses, Ray abruptly introduced a new subject “Something has been bothering me for a long time. When *The Book* refers to laws of life, it sounds like some kind of universal system of justice dishing out precisely calibrated rewards and punishments to one and all.” Then turning to Vinay, “Isn’t that what the Indians refer to as karma?”

“I’ve thought a lot about karma over the past two years since Dan first showed me *The Book*. We had some pretty heavy discussions trying to sort out what *The Book* was saying and reconciling it with what I had learned as a child. As I understand it, *The Book* is not talking about rewards and punishments at all. It is talking about energy, energy that has a strength, a vibratory frequency and a direction. It seems to be saying that the law of karma, if there is such a law, is similar to Newton’s Laws of Thermodynamics. Every action has an equal and opposite reaction. Every energy sent forth, attracts to it an energy of equal intensity and vibratory quality.”

Nodding agreement, Dan elaborated, “When we first met in Florida, we were all looking for something, searching for something without being able to clearly explain what it was. That quest, that aspiration emitted a subtle energy that brought us into contact with each other and eventually with *The Book*. When we met Thompson in Washington, his being emitted an intense mental and emotional energy. It was palpable. He tried to dominate us, intimidate us, cow us into submission. Maybe that energy arose in response to something in us, to the fact that what we were doing directly challenged conventional wisdom and established beliefs. Without fully being aware of it, we had set ourselves on a collision course with the status quo. Our near escape from the accident was a direct consequence of the course we had chosen and the fighting attitude we had adopted. The accident was not an attempt to punish us. It was a precise reflection and response of life to our attitudes and actions.”

Anya, who had been listening intently, intervened. “I like this explanation, because it eliminates the sense of subjective judgment regarding right and wrong. In the *Count of Monte Cristo*, Edmond Dantes is a young, talented, honest and good-natured sailor in love with the beautiful, orphaned Mercedes. He is suddenly promoted to captain of a small merchant ship when the former captain died after stopping at the island of Elba to accept a secret letter from the imprisoned Napoleon. Edmund becomes the victim of a heinous plot by Mercedes’ evil cousin, Fernand, who is in love with her and wants her for himself, and the ship’s mate Danglars, who is jealous of Edmond’s promotion. Together they succeed in having him arrested and imprisoned as a traitor. Fernand eventually marries Mercedes and acquires an aristocratic title. Danglars becomes a wealthy banker. Edmund loses everything—his love, his father who dies of heartache, his career and his freedom. A few years later, on the verge of death by self-imposed starvation, Edmond makes contact with a prisoner in the neighboring cell, Abbe Faria, who is trying to tunnel an escape route. Before he dies, Faria gives Edmond great knowledge and wisdom and life, along with a map to a huge fortune. After fourteen years in confinement, Edmund escapes from the prison, assumes a new identity as the fabulously wealthy and eccentric Count, wreaks vengeance on those who wronged him, and wins the love of a beautiful and noble princess, Haydee.

“The question that has always bothered me about this story is why Edmond lost everything he cherished at the very moment in his youth when he appeared destined for great success. His only error had been to do his duty, love a woman and naively believe in the good intentions of other people. His fate

appears horribly cruel and unjust. Yet, as a consequence, he acquires a rare and precious knowledge, an immense wealth and influence, and ultimately a love far purer and richer than that which he lost. It was almost as if he needed to undergo this suffering in order for something deeper and nobler in his nature to emerge to the surface. This experience enlightened, transformed, and fulfilled him at a far higher level. If there were any reason for his suffering, it was not wrong doing, but ignorance. His naivety made him vulnerable. Through his suffering he acquired knowledge and strength.

“The story is also full of interesting side-lights and insights. For instance, before the old captain died, his last command was to make Edmond promise to deliver Napoleon’s letter to a man in France. It was that letter from an imprisoned emperor that led to Edmond’s own imprisonment and when he emerged fourteen years later, he acquired the poise and almost the status of an emperor himself. It was as though Edmond was destined for greatness and contact with Napoleon had released that concealed potential.

“It’s also interesting to note,” Anya added, “that Edmond only met Faria through what appeared to be purely a chance event. Faria was trying to tunnel to the outer wall of the prison and miscalculated the direction. Had it not been for this very wise man’s error, they never would have met, Edmond would have died in prison, poor, ignorant and unfulfilled. Was it chance that brought them together or karmic force? Was it Faria’s aspiration to bestow his knowledge and wealth on a willing disciple who he came to love as a son? Was it Edmond’s aspiration for freedom, self-discovery and emergence of his deeper potential? Or are my questions merely the ramblings of a Russian romantic about a made up story?”

“I’m confused,” Vinay said. “Are you saying that Edmond suffered because he was naïve and ignorant, or because some of Napoleon’s karma rubbed off on him, or because of some greater destiny that required him to cast off the old life and discover a deeper self within him?”

“I’m not sure I know the answer,” she replied. “But what I am saying is that his suffering cannot simply be explained away as punishment for evil deeds. Life is more complex than that.”

“Maybe all those answers are true,” Dan added. “Why must we look for simplistic formulas for complex events? If I drop one object on the floor, the resulting sound generated as a consequence depends on the size, shape and material of which the object is made, the type of covering on the floor, the size and acoustical properties of the room, and the simultaneous presence of other sounds that may reinforce or cancel out the noise. Many principles and facts are involved. In Dumas’ story, it is clear that Edmond was naïve and we all know that ignorance of any kind can be dangerous. When Vinay pulled our car out of the State Department lot, we were ignorant that traffic on the other side of the barrier was moving in the opposite direction and almost got killed as a result. Of course, we now understand that it was also an expression of the head-on conflict with Thompson, the power of social forces which I for one underestimated. Edmond acted within a social context. Napoleon had been captured and imprisoned but was not yet finally defeated or rejected by the French people. He was destined to rise again. Edmond’s contact with the emperor wiped out his entire present social existence and accomplishments, but it became the spur to far greater knowledge, social attainments, development of personality and, ultimately, to a purer, diviner love than Mercedes was capable of offering him. A man with lesser spiritual potential would have died in prison, crushed by the horrible blow. We have been fortunate enough to escape a direct impact collision with those social forces so far, although from the looks of it I may be confined to MAI as my prison cell until we find some way to break free of this situation. I think the main point is that Edmond was not punished by karma for his past acts.

“Let us not be too impatient for all the answers,” he continued. “These are the ultimate questions of life we are grappling with. Fortunately, our immediate challenge does not require that we be able to explain all of life. It is enough we can identify the best course of action to achieve the very best results. I do not have to understand the intricate workings of the computer in order to use it for my benefit. Nor do users of AIS need to know the profoundest truths of life explained in *The Book* in order to benefit from our software. The main point that emerges from our discussion is that every attitude, situation and action does have consequences and those consequences are determined by laws of life. Our task is to program AIS to analyze each situation according to those laws to arrive at a path of highest accomplishment.

“There does seem to be a direct connection between karma and accomplishment. But it is not as simple as people seem to think. The idea that the good prosper and the evil suffer is an over-simplification which we find contradicted by what happens all around us. If each type of energy and action has its own corresponding consequences, then acts of goodness will be rewarded *in kind* by similar acts of goodness coming from life, not necessarily by wealth or success. Life is a plane of force in which strength determines the primary result. The strong, hard working person achieves more than the weak lazy person. That’s self-evident. The strong, hard working selfish, evil person may acquire fabulous wealth or great fame because of his enormous energy and exhaustive effort, but he will find himself surrounded by and acted upon other

forces which are as ruthless and negative as he is. Strength generates power or money. Goodness attracts goodwill and love. They are different types of energy, different vibrations. Each has its own distinct consequences.”

Anya was still thinking of Edmond Dantes. “That makes it clearer, Dan, why Edmond’s life turned out as it did. His naivety was a form of weakness for which he suffered, until he acquired consummate knowledge of human nature. His native goodness brought Haydee into his life, a woman who responded to his goodness with a deep and pure love. My favorite part of the story is where Edmond, thinking he is unloved in the world and unwilling to inflict more suffering on others, decides to allow Mercedes’ son to kill him in a duel. He sits down to make out his will bequeathing most of his fabulous fortune to Haydee. At that moment, she comes up behind him, glances down at the will and asks him if he is thinking of dying. He replies that it is always wise to be prepared. In response, she tells him that if he dies, he should leave his fortune to others because she will require nothing in the world. Then without a moment’s hesitation, she picks up the sheet of paper, tears it into four pieces, drops it on the floor and then falls to the floor in a faint. Only then did Edmond realize that this lovely young woman whose life he had saved is deeply in love with him. His goodness was rewarded after all.” Anya’s eyes glistened as she narrated the story.

Everyone sat quietly for a few moments, then Ray resumed the conversation. “I still have some questions I would like us to consider. So far we have been talking mainly about the actions of individuals and their consequences. What about society? Napoleon was not just an individual acting in a vacuum. His decisions and actions impacted on the entire life of France, all of Europe and less directly the entire world. Hundreds of thousands, perhaps millions died in the wars he launched. Monarchies fell, nations were conquered and merged with other nations, the arts and sciences flourished under his regime, old privileged classes were replaced by new ones, the Code Napoleon established common principles of law and administration throughout the continent. Napoleon’s actions were themselves the product of earlier decisions and actions culminating in the French Revolution. As you have explained, Edmond’s life was also influenced by that social context. How do I distinguish and separate the individual from the social, the consequences of my own actions and the consequences of actions of the society and world in which I live?”

“Look at it another way,” Dan replied. “Today everyone in society enjoys certain benefits which individually we did nothing to deserve. We reap the benefits of all the collective discoveries of the past—Tom Edison’s light bulb, Bell’s telephone, the airplane, TV, computer, immunity for polio and many other infectious diseases that used to plague humanity, etc. We take these things for granted and do not think we are being singled out for any special reward. Everyone has access to these things, or at least many people do, and we happen to be among the fortunate. We rarely ask why life is bestowing such wondrous gifts on us. We take it for granted. But when Hurricane Katrina inundates New Orleans and destroys thousands of homes, we like to think that this has nothing to do with us. Those who lost everything wonder why God has punished them. Those who escaped harm thank God for their good luck. We easily forget that Katrina and climate change are also a natural reaction and consequence of the collective actions of American society over the past hundreds of years and also a direct reflection of our collective unwillingness to accept responsibility for the environmental consequences of our actions, until the rising price of gas forces us to give up our SUVs or the rising sea level forces us to move inland. We are happy to benefit personally from America’s collective development, but unconscious and unwilling to accept responsibility for the consequences of that development. We forget that we too benefit from the ignorance, wasteful evils of the society we live in. So how can we expect to escape individually from the consequences wrought by our collective action?”

“The law of karma is true of societies as well as individuals. For a few centuries the great empires of Europe roamed the world for riches, claiming as their own whatever defenseless people they felt worthy of conquering and incorporating, proud of the fact that the sun never set on their possessions. Today the number one concern in Europe is that it is being inundated by foreigners, principally people from those very countries which it earlier colonized. Londoners have been complaining for decades that it has become a colony. I read a recent report which predicts that Anglo-Saxons will soon become a minority in Birmingham. In California, Texas and other parts of the West, people dread the emergence of a Hispanic majority, forgetting that California was originally discovered and developed by Hispanic descendants. We took it away by force and benefited by that conquest, now life comes full circle. We are not being punished for our sins, but we are reaping the natural consequences of our earlier actions.

“Before the Civil War the economy of the South derived its strength from the use of free slave labor—people who worked without compensation. Today conservatives mourn about a welfare system that compels us to provide support to people who do not or cannot work. Viewed karmically, it is just a natural and inevitable consequence of our earlier actions. Of course, Northern Republicans may take refuge in the argument that they vigorously opposed slavery, which is partially true, though the Civil War was fought

mainly over the issue of states rights. But granted that it is true, it did not prevent Northern industrialists from treating the entire working class almost as slave labor until the labor movement and labor legislation began to right the balance. Again it is not a question of right and wrong, but rather a question of act and consequence.

Levin, who had been listening intently to what Dan was saying, asked permission to speak. "I think one of the reasons for America's greatness today is in that from the country's very inception she has accepted people so willingly from so many different countries. It's the very reverse of the principle of colonialism and the source of America's greatest strength. She has opened her doors to countless impoverished millions who came with nothing but their aspiration for freedom and a chance to build a better life. She provided them with that opportunity and is justly rewarded. It is those countless multitudes that have made America what it is today, giving every last drop of their mental, emotional and physical energies to make the country and themselves strong and prosperous. That is why the whole world admires and emulates America even while it disparages and disapproves its dominance and arrogant attitude. That is why the most talented still flock to this place which offers greater freedom for individual self-expression than anywhere else. Today America is reaping the consequences of its past acts positively as well as negatively.

"A few days ago while I was waiting for Dan to return home, I read a fascinating passage in the *Archives* which relates to what Dan has been saying. I did not fully understand it until now. In essence it seemed to be saying something like this. *All power yearns to be expressed. Those who enjoy power and prestige exercise it to the limits, unaware that the freedom they now enjoy will one day pass on to others and the acts they initiate will generate their own inevitable reactions and consequences.* I wonder whether Britain, France and other empire builders would have acted differently if they had known the future consequences of colonialism. One of those consequences was the rise of imperialism in Nazi Germany. The landlocked Germans tried to repeat and better the accomplishments of earlier empire builders, and thus the burden of defeating Germany fell very largely on them.

"I have the same concern today about the policies of Israel and the USA. Do we really understand the future consequences of our actions? Today America is the unrivalled leader of the world, as Greece, Rome and other countries had been in their times. Greece was conquered by Rome. Rome was conquered by barbarians. What will be America's fate? Is there an alternative path the US could follow? And back home, I fear that the oppression my people suffered in Europe is now falling on the Palestinians. I understand the viewpoint of my countrymen and I partially share it, but that does not prevent me from fearing the karmic consequences of suppressing another people and hoping for a better solution.

"This raises even more profound questions, which as far as I can see, neither science nor religion answers satisfactorily. What is evil? Why does it exist? Why do evil acts sometimes give rise to consequences that appear good? After all, the unprecedented destructive horrors of the Second World War have been followed by the greatest period of creativity, development, peace and prosperity in the history of the world. And out of the ashes of the old Europe, with Germany at the very center, we see emerging a new type of social organization which offers the greatest hope for peace and prosperity in the future. On a continent which has been the focal point for five centuries of human conflict, including two global conflagrations, we find a place where war has become almost unthinkable. In its place we find nations moving to transcend their narrow identities and create a common unified supranational entity."

As Levin spoke, Anya felt a mild warmth and richness rising in her heart. There was a ring of sincerity and truth in Kurt's words that she found refreshing and elevating. No one rushed to comment on what he had said. The atmosphere acquired a weighty fullness that the partners had felt on a few rare occasions in the past without ever making verbal reference to it. Gradually they turned and exchanged knowing glances, glances that communicated a suppressed mental excitement and a sense of belonging to something important.

90. Life Response

Life evolves by consciousness. Consciousness evolves by organization.

Contact of form with form releases force. Contact of force with force releases consciousness.

The Book

Luck is subconscious life response.

Life response is the capacity to create luck.

Archives

For the next three days, the partners sequestered themselves with Levin all day long pursuing a somewhat rambling exploration of the laws of life. It soon became apparent that the subject they were examining was so vast and complex that it could not possibly be handled effectively in this manner. On the second day Anya began taking detailed notes of the most significant points. On the fourth morning she produced a list entitled “Laws of Life” covering what she thought were the most salient underlying principles they had discussed. From then on, the group acquired a greater structure. Each morning Dan read out citations from *The Book* enunciating specific laws and the principles governing their interaction. This was followed by discussion and application of the law to their own experience at MAI and their own personal lives, to make sure that they understood it in a living context and not merely as abstract impersonal, philosophic truth. The habit of looking for parallels in history, biography, business, literature and contemporary events solidified into a conscious methodology. Each person tried to identify examples from one of these four classes of life events to illustrate each of the principles. Gradually the list of principles grew to more than twenty and the list of incidents to more than one hundred fifty. Still they seemed to be just scratching the surface of the subject.

After nine straight days of discussion, they decided to break for the weekend and reconvene the following Monday morning to evaluate their progress and decide on a more systematic approach. The five partners were sitting in the conference room at 9 am Monday morning eager to start the meeting. Dan suggested they wait for a few minutes until Levin also arrived. The unexpressed implication was that they all had come to tacitly include him as part of the team. At 9:15 am they decided to begin the meeting without him. Five minutes later Levin rushed in and apologized for being late. When Dan resumed speaking, Levin indicated he had something important to say.

“Sorry for interrupting, Dan, but something has come up which I think you should hear immediately. I was on the phone to Seoul for about four hours last night and this morning with Benjamin Choi, a senior officer in the Ministry of Foreign Affairs. Over the past two years I have gotten to know Ben pretty well during numerous visits to South Korea on the nuclear issue. Our relationship has become more than official. I guess you could say we have become personal friends. I’ve been to his home several times and been introduced to his parents, brothers and several other relations. Anyway, we keep in fairly close touch on issues of common interest. Ben had heard through official channels about the last meeting in Washington and called me the following day for my own version. He laughed heartily when he heard the story of the Robber, was intrigued to hear about AIS and asked many questions. When he phoned last night, I thought he wanted to report some follow-up political developments from his side. Indeed, he spent the first hour narrating reaction in Seoul and Tokyo to the North Korean nuclear tests, but then he switched suddenly to the real purpose of his call.”

Ray interrupted Kurt’s narrative. “Excuse me, Kurt. Your friend Ben Choi - do you know if he ever studied in the USA?”

“Yes, come to think of it, I believe he studied here at MIT, as you did. That’s quite a coincidence, isn’t it?” Levin replied.

Ray shook his head in bewilderment. “Not nearly as great as the fact that he was my roommate,” he replied. “Ben was the guy who taught me about Korean culture and took me home to spend three weeks in Seoul. He had a sister, Min, and a brother whom I never met because he was living in Japan at the time. I recall his family ran a number of companies.”

“Well, if it is the same Ben Choi, it is simply incredible,” Bill remarked.

“Not incredible, Bill. Its life!” Dan commented. “Please continue Kurt.”

“Well, it seems that Ben has been doing research on MAI and AIS and found that the software has commercial as well as political applications. Ben’s family is one of the wealthiest business groups in South

Korea with controlling interest in more than three hundred companies. Although the family remains in the background, the combined revenues of the companies they control is probably in excess of forty billion dollars. As you may know, the boundary line between business and politics is very fuzzy in most parts of Asia, though from what I have learned recently it is not very clearly demarcated in Europe or America either. Anyway, Ben had some discussions with two of his brothers who head up the business operations about the possibility of applying AIS in their business. He was calling to see what I thought of the idea and when he learned that I was actually speaking from California and meeting with you daily, he wanted to learn as much as he could about your clients and your operations. I told him whatever I was fairly sure of, but I focused primarily on the very advanced technical aspects of AIS⁷. Ben is not a technocrat, but he has a great respect for technology. Rightly or wrongly, he considers me an expert on artificial intelligence and took what I said quite seriously.

“Early morning Ben called me again. While I was sleeping, he had a long meeting with family members regarding their possible interest in AIS⁷. In short, they are very interested. He said that competition from China is placing a severe strain on the earnings of many of their domestic holdings. Although they have significant investments in China, they are concerned about overdependence on that market and want very much to raise the profitability of their Korean firms. Through his own companies, he was also able to contact several people who occupy high level positions in clients of MAI. They must have gotten the names from your website. Ben and his brothers were sufficiently impressed that they would like to discuss with you personally.”

Vinay expressed his elation. “Wonderful news, Kurt! If they are serious, we can probably schedule a meeting in Seoul for early next month.”

“I don’t think that is what they have in mind, Vinay. Ben told me that his brother Eddie proposes to visit us here in California next week. He only awaits your confirmation of the meeting.”

“That’s right,” Ray interjected, “Eddie, that was his brother’s name.”

“It is a life response,” Dan interjected. “It appears like a direct response.”

Bill then asked, “Any idea what they may have in mind, Kurt?”

Levin replied, “I am really not sure. He told me he had heard you work on a no-risk, profit-sharing, performance basis and he said that idea was deeply appealing to them. I know these people fairly well. They are very aggressive business people, used to taking big decisions and risks few others will take. That is one of the qualities that has enabled them to build a business empire in just twenty-five years. I got the feeling they are speaking of a very substantial engagement. But excuse me, Dan. I think I am missing something. In what way is this news from Ben related to our discussions about life?”

Dan acknowledged his question with a nod and then responded. “For ten days we have been exploring a deeper knowledge of life, knowledge with power for accomplishment. If we ever succeed in mastering the principles of life and fashioning a product that can analyze and take decisions based on those principles, we will come closer than anyone has ever come to creating an AI product capable of unflinching success. Just now we are all enthused by the prospect but also daunted by the magnitude of what we seek to accomplish. If we ever do succeed, the monetary rewards will be incalculable. But right now the challenge appears as daunting as the one the Koreans face due to the resurgence of the dragon, China. We have discovered a precious knowledge of life which we value. The Choi’s think they have discovered a knowledge that is precious to them, knowledge about MAI and AIS, and they seem to value it enough to fly half-way around the world on short notice to explore it further. There is a one to one correspondence between our response to life knowledge and their response to us. We both confront the challenge of converting that knowledge into results. For us the result is building AIS⁸. For them, it is applying AIS to improve their business performance.”

Vinay then added, “I agree. But there is more. Ten days ago you argued that we should accept Kurt’s proposal for collaboration on Palestine, even though it appears to directly conflict with our decision to move rapidly ahead on development of AIS⁸. You argued then that we should not view the two tasks as mutually exclusive, but rather as complements. Accepting the Palestine project would provide the context and help generate the insights into life needed to evolve the next generation of the software. By the same logic, the same must be true in this case. Ben’s proposal is not merely an opportunity to land a big client and earn some big money. It may also provide us with critically needed life experience to evolve AIS⁸. Come to think about, this opportunity would not even have come to us if we hadn’t decided to accept Kurt’s proposal for collaboration. In some way the two projects seem to be linked together.”

“I am still not sure I understand the full meaning of the term *life response*,” Levin added. “What is the difference between life *reacting* to our actions and life *responding* to them?”

Dan explained, “Life always acts to restore the balance. Normally it reacts to restore the status quo at the present level of our existence. But when for some reason we elevate our consciousness to a higher level, it responds to elevate the life around us to that same level, thereby restoring the balance at a higher level. You might say that routine actions evoke reactions from life and progressive actions generate responses. It takes us back to one of the central principles enunciated in *The Book*:

Life evolves by consciousness.

“Science regards life as inanimate force, energy in motion, which lacks consciousness or intention. According to *The Book*, the force of life is conscious, or rather subconscious. Consciousness is inherent in the force, involved in it and seeking to emerge. The contact and conflict of force with force in life releases the hidden consciousness within it, enabling life to evolve to a higher level. Like Edmond Dantes’ imprisonment, our chance meeting in Florida, our confrontation with Thompson, the near accidents we had in Washington, the break-ins at my place, Tony Preston’s theft, your brief liaison with *The Book* in Geneva, our contact with it since it fell off the shelf at Moe’s—each of these is a contact in life that released consciousness and spurred our lives to evolve.”

“But what caused those events to occur?” Anya asked. “Were they reactions to our previous actions or responses to some elevation of our consciousness?”

“Our meeting in Fort Lauderdale and contact with *The Book* are clear instances in which life has brought something new from outside in response to a greater awakening or aspiration within. It did not react to maintain the status quo. It responded to create something new. And the consequences of those responses are still working themselves out in our lives. The capacity to evoke life responses at will gives one the power to accomplish anything in life. Our ultimate objective must be to impart that capacity to AIS. Then, regardless of the situation, the conditions, the apparent limitations, we can consciously attract the knowledge, the conditions and resources we need for higher achievement, the way Edmond subconsciously attracted Abbe Faria to discover his cell, save him from starvation, impart precious wisdom, provide him the map to a fabulous fortune and in the very act of his own death, also provide the means for Edmond’s escape from prison in the body-bag intended for the Abbe’s corpse. What Edmond did subconsciously, we must aim to make possible for each person to do consciously in their own lives. And to do it consciously means to progress much more quickly without the need for intense suffering as a spur to our awakening and effort.”

91. The Pyramid Scheme

Two days later, the five partners and Levin met again to develop a research plan for AIS⁸. When they walked in the conference room, Anya circulated a twelve page document, most of which was filled with formulas and calculations. Everyone except Ray flipped through the pages quickly because they could make little of the information it contained. Ray on the other hand seemed to study every line of the argument with great care and an increasing expression of concern on his face as he turned from one page to the next. When he finally looked up from the document, Vinay asked, “I realize, Anya, that mathematics is the language of the Gods, but for those of us are unable to commune with the heavens in their native dialect, can you restate this in plain English?”

Ray replied tersely on her behalf, “In simple terms it means that based on our current research methodology, manpower and technological resources, it will take us somewhere between hundred and two hundred years to have sufficient data to validate AIS⁸. What Anya is saying is that we would need to employ thousands of people in order to conduct the research needed to develop AIS⁸ on our own. We are already having enough problem managing two hundred. Her analysis suggests that we may be approaching the limits of what a small group of people can accomplish on their own. Maybe we need to be thinking of opening this project up to all humanity. Maybe we should just release the source code for AIS⁷ and let it develop on its own.

A perplexed expression came on Vinay’s face and he shook his head. “Ray, I understand that Anya’s assessment indicates that we need to expand our operations enormously. What I am asking for is the logic behind these formulas and numbers. I had understood that AIS⁸ is a natural evolutionary step beyond AIS⁷, just as AIS⁷ was a progression from AIS⁶ and so forth. I am trying to understand why suddenly in the transition from personality to life has the magnitude of the required effort increased exponentially? Can you give us a little longer version, Anya?” Vinay asked.

“If we go back to the earlier versions, the present problem may be easier to explain,” Anya replied. “AIS¹ was based on only the two axes of the decision-making matrix. We measured the relative strength and direction of external and internal conditions directly related to each specific decision-point. Of course the number of possible factors influencing those variables was many times greater, but the underlying operational theorem was quite simple and easily programmable. In simple terms it could be summarized thus:

Accomplishment results when internal and external conditions are positive (direction) and of sufficient intensity (strength).

“Based on this central theorem, we derived four corollaries represented by four algorithms to take into account what would happen when either the internal or the external conditions were either not positive or not sufficiently positive to provide the energy required for accomplishment. That generated four basic possibilities which are represented by the four quadrants. We further subdivided each of the four quadrants into four based on the same corollaries, resulting in sixteen quadrants, each of which was subject to two variables—strength and direction, which brought the total number of algorithms to thirty-two. This simple program was the first AI product to effectively incorporate subjective and objective factors within a single model.

“Then we moved on to AIS². The major advance here was to further subdivide and analyze the internal portion of the matrix by assessing and accounting for the impact of a wide range of mental opinions. While the range of opinions may be nearly infinite, our focus was only on the impact of opinions directly related to the intended goal to be accomplished. We were able to subdivide that into twenty broad categories of opinions relating to people, work, organization, results, society, etc., each of which was further subdivided into subcategories, e.g. opinions about my own personal capacities, co-workers, customers, the company, the job, etc. In this way we were able to further enhance the decision-making matrix. We found we were able to do this fairly effectively by increasing the number of algorithms to about five hundred.

“AIS³ involved only an extension of this approach from opinions to attitudes, so it was fairly easy to implement, though the impact on performance of the program was enormous. In AIS⁴ we factored in five major organizational components—market, technology, people, finance and organization—each of which was further subdivided into twenty subcomponents. That added hundred new dimensions to the system. It would be more correct to say, that it enables us to apply the basic technology of AIS³ to hundred dimensions. Since each component and subcomponent has its own unique characteristics, it multiplied the number of algorithms to about fifty thousand, but due to the overlap and interrelationship between the subcomponents we found that five thousand algorithms were sufficient for practical purposes.

“I won’t bore you by walking through all the successive stages. I think you get the idea. It is enough to say that by the time we completed AIS⁷, we had incorporated more than one million algorithms. It would have been much more, except for the fact that each new version built on the infrastructure of earlier versions. For example, our effort to model human personality in AIS⁷ utilized all the work done previously on opinions, attitude and motivational intensity.

“Now we come to the present difficulty. Over the past ten days we have identified and examined approximately one hundred twenty-five principles of life. I have based my calculations on Dan’s estimate that approximately one thousand life principles or axioms are enunciated in *The Book*. For the most part, the principles do not introduce or involve measurement of any new variables. You can say that AIS¹ to AIS⁷ already involve most of the variables we need to measure, with one major exception. That relates to the subtle life atmosphere. I leave that aside for the moment because I do not understand enough about it to speak intelligently or know how we will handle it. I have a feeling we may need to wait to incorporate it in a later version. Anyway I have assumed that AIS⁷ already defines the entire universe of data we need to take into account, but it is based on relatively few and overly-simplistic laws because it does not take into account the wider principles of life we are now discussing. If we assume that each of the one thousand life theorems interacts with just one other theorem to determine a result, we have to deal with one million combinations impacting on one million variables. If the number of theorems expressing in an event is three, then we are talking about one trillion combinations impacting on one million variables. If you want to imagine our challenge visually, think of it as an inverted pyramid. AIS¹ is a tiny point at the tip, represented in magnitude by this sheet of paper in front of me. AIS⁷ is at the base which is above with an area roughly the size of Silicon Valley. AIS⁸ will require a base ten times the surface area of the globe.

“I think you get the point. Building a system of this complexity would require many times the combined computing power of the whole world, assuming that existing computers had the intellectual capacity to build it, which they do not. Perhaps ten or twenty years from now, we will have that capability, but not now. The numbers on this sheet are a very conservative estimate of the level of effort required. To put it simply, I do not see how we can build AIS⁸ in the foreseeable future. There is simply no room on earth for this pyramid to reside.”

There was dead silence in the room. Not the rich vibrant silence of previous days, but a dull, heavy oppressive silence of ignorance, incapacity, and disappointment. No one spoke, no one even moved for what seemed like hours but was probably no more than fifteen or twenty minutes. Earlier such a report would have provoked intense debate and speculation. But the personality of the group had changed radically from those times. It had acquired a far greater seriousness and maturity. By some unspoken consensus, the group had come to accept that talking at a moment like this would accomplish nothing but to distract their attention and dissipate precious energies, unless it arose from mental clarity or emotional conviction. Therefore they sat quietly without trying to fill the silent void.

Finally Bill broke the oppression with a question. “I am one who understands only enough about computer systems to use them. As Ray can testify, I am also a great fan of science fiction movies, so I hope you’ll excuse me for asking a foolish question. In many books and films, we come across the idea of computers developing themselves until they finally become more intelligent than human beings. Why can’t we ask AIS⁷ to develop itself?”

“Your question is not foolish,” Dan replied. “If our aim was simply to design a faster processor or a more efficient set of algorithms—a better way to run through the maze—then what you say might be possible. And after watching movies like *The Matrix*, it is no wonder that you should ask. But here is where science and science fiction diverge. Our objective is to enhance human capacity for accomplishment in life. We are not just trying to build better physical systems like a faster racing car or faster computer. We are trying to create better, more effective living systems that consist of human beings acting and interacting freely and creatively, working in cooperation or competition with one another. Well, the capacity for accomplishment in life is a direct function of our consciousness. The more conscious we are of life, the greater our knowledge of how human beings, organizations of people, social groups evolve and develop in the wider plane of universal life. Computers are a human invention. They may calculate faster than we can, but they can only become as conscious as we are and as we program them to be. They can create data and analyze information, but they cannot create consciousness. Only human beings can discover or awaken consciousness and program it into computer systems. Before we can program AIS with that knowledge, we have to acquire it ourselves. *We have to grow our own consciousness before we can create a more conscious system.*”

“How, exactly, do you plan to do that?” Bill asked.

“The same way humanity has been doing it since the dawn of time—by learning from experience—by deriving more knowledge from our individual and collective experience. How did you learn to be an astute businessman? You observed what was going on around you, you examined the reasons for the successes and failures of the actions you initiated, you read about the successes of other people and their explanations for that success. You were also helped by the fact that you came from a family and a community with a long history of success in business. Even as a child, you absorbed knowledge from your family about how to be successful without even being conscious that you were learning. That is the process all of us use. In creating AIS⁸, there is only one difference. We have *The Book*. *The Book* provides us with a codified knowledge of human accomplishment which may be five hundred or one thousand years ahead of what society has acquired, the same way our knowledge of human anatomy and physiology and other fields is one thousand years ahead of what existed during the Middle Ages. We do not know how this knowledge was acquired or by who. But we have access to it. Without that knowledge we could never even consider attempting what we now propose to do.”

Bill still looked puzzled. “If *The Book* has given us all that knowledge, then why does Anya say the creation of AIS⁸ is impossible?”

“Because that knowledge is not yet real to us. It is like a set of hieroglyphics on a page. We have to discover the truth of each principle in life to make it real. That is true of all real knowledge. Take the knowledge taught in MBA courses. Assuming for the moment that knowledge is real and comprehensive, why doesn’t every MBA become a great success in business? Why doesn’t every MBA go out and create new companies like Fred Smith did at FedEx? Why not simply factor the MBA curriculum into a computer and let it run the company? Why is it so much easier for a physician or a business consultant to tell someone else what to do than to follow that advice in his own life? The answer to all these questions is the same. The Ten Commandments, the Bill of Rights and every other scripture purporting to guide human beings toward greater success are only information until they are fully understood, emotionalized and expressed in the decisions and actions of people. Our Declaration of Independence proclaims the universal truth that all men are created equal, but a number of the prominent founding fathers who signed it owned slaves. It took nearly a century for federal law to ban a practice that was a direct violation of America’s founding principles. It took nearly one hundred fifty years for the principle of equality to grant suffrage to women.

“The problem of human evolution is not just to know what is right. The problem is to act on that information. You might say the challenge is for human beings to become rational. We need to move from the vital consciousness of the animal which acts out of sensations and desires, and evolve to become rational mental beings that respond to what the mind knows is to be logical and reasonable. That requires first of all that we become mentally conscious in thought, no longer swept away by our physical sensations, impulses, emotions, fears and desires. We have to be able to detach ourselves from the compulsions of the physical and vital impulses that drive us to act without thinking or reflection. We have to be able to detach ourselves from social opinion and pressure to conform with the thoughts and actions of others, for as long as we are social we can never be rational. Finally we have to detach ourselves from our own personal egoistic way of looking at things and view them from a wider perspective that takes into account every other possible viewpoint. If we can do all that, then we can evolve consciously.”

Again the group fell into silence, but the sense of oppression appeared to subside. Levin was the next to break the silence. “As an outsider and a newcomer, may I be permitted to make an observation based on my experience of the past ten days?”

Everyone in the room nodded simultaneously, for in some inexplicable manner they had all come to regard Levin as an intimate colleague rather than an intruder. Quite remarkably, as they looked at Levin, none of the partners could even recall to mind the fact that he was present as an official representative of Mossad. “Dan, something you just said helps me understand my experience of the past ten days. Permit me to say that the past ten days have been the most exciting and enriching of my entire life. I feel I have learned more and grown more as a result of the hundred hours we have spent discussing AIS⁸ than I have during my whole career. Based on my own knowledge of AI systems, Anya’s analysis appears very sound. So after catching the drift of it, I have been sitting here asking myself a question. How did I manage to learn so much in ten days?”

The partners listened carefully to Levin but could not decipher the relevance of his question to their present predicament. Still out of respect, they did not interrupt him. “Let us assume for a moment that what I just said is actually true, and not just a metaphorical way of saying that I have enjoyed spending time with you people and have learned a lot. Assume for a moment that I have actually acquired knowledge of life in the past ten days equal or greater in magnitude that what I have learned over the past twenty years or seven thousand days. That would mean my rate of learning during my stay in Berkeley has accelerated three

hundred fifty times.” A spark of recognition sped around the room. Anya’s eyes became alert. Dan sat up from his slouched position. Suddenly Levin had their full attention, not merely their polite listening.

“I realize you may question my initial assumption. Did I really learn more in ten days than in the previous seven thousand? Certainly I have not learned more physical facts during that period, nor more mathematics. I have not visited new places or met new people. But that is not the kind of knowledge or learning we are concerned about with AIS⁸. We are now concerned about knowledge of life, or rather knowledge of accomplishment in life and how to mobilize the forces of life for higher accomplishment. Well, in that sense I do believe I have learned more in ten days than in twenty years. I now have a far greater understanding of what has happened to me during that twenty years—why some things I did succeeded and others failed; why some people I know have risen sky high and others fallen to ruin; why violence in the Middle East escalated at certain points and subsided with hopes of peace at others; why my brother’s company went bankrupt and why the Choi group has grown during the same period from nothing to hundred billion dollars; why Enron failed and Google has prospered; why two hundred twenty year old Encyclopedia Britannica has only one hundred fifty thousand articles while five year old Wikipedia may soon have ten million. So I have been asking myself this morning, if I can learn so much in such a short time, why can’t AIS⁸?”

Levin paused, but no one spoke, so he continued. “So I started reflecting on the method we have followed during the past ten days. I do not know how consciously you have formulated that method, but I think it is brilliant. The mistake most theorists make is to abstract their knowledge so it is more and more divorced from life. The method you are following is the reverse. You are taking the knowledge of *The Book* and correlating it with a wide range of life experience drawn from history, biography, contemporary events, business and literature. I find the inclusion of literature particularly insightful, because it is only there that we seem to get a comprehensive picture based on the writer’s vision of life, which includes all of the facts, uncolored by the subjectivity of the one who is experiencing it. We find when we do this that many principles impinge on each life event, adding to its complexity. But we also find that these events tend to form into constellations or types which lend themselves to categorization. For example, my near accident and your own near accident and Tony Preston’s actual accident differ but share many factors in common.

“So it occurs to me, why not take a large number of incidents of human accomplishment—let’s say one hundred thousand—covering all major fields and levels of activity and apply the hundred most important axioms to analyze them. I realize that is a very big task, even Herculean, but it is not impossible. Not if you can engage enough people to assist with it. I believe today Wikipedia has more than one million contributors, at least one hundred thousand of which are active. Let’s suppose we employ a similar methodology to enlist qualified contributors in different fields from all over the world who are already knowledgeable in their respective fields. They already know the facts so they do not have to collect them. They need only analyze those facts according to the axioms. Given a sufficient number of contributors, it might be possible to gather enough preliminary data in one year to develop the first prototype system, perhaps two years to get to beta. Let us assume you offered five thousand dollars to twenty five thousand dollars for each analysis—depending on its quality and completeness. That would probably be sufficient to enlist the support of hundreds of thousands of graduate students. If the average contribution costs ten thousand dollars, then the one hundred thousand incidents would cost one billion dollars. I realize that is a huge amount of money, but not an impossible amount. Why a single business group, like Choi, might be able to raise that much if they were sufficiently convinced.”

Levin stopped and looked around the room, searching the eyes of each of the partners for a response to his proposal. Unable to discern what they thought, he did not know how to interpret their silence. Was Ray’s expression one of incomprehension or disapproval? Did he perceive mocking laughter glistening in Anya’s eyes? Was Dan’s sphinx-like immobility due to regret that he had ever invited Levin into the group?

Dan was the first to respond. “Kurt is right—as usual.” A thrill of relief and joy surged through Levin’s body as he heard those words. “We have the knowledge. We need to apply that knowledge to analyze real instances of accomplishment. Our task is not to work out every mathematical possibility. It is to discover the constellations of factors and axioms that govern success at a wider level. Remember that we already have a platform that works. We are only trying to refine and improve it by factoring in variables that have never before been incorporated into any model of human accomplishment. We are not trying to recreate AIS⁸ from scratch. We are trying to evolve from AIS⁷ to AIS⁸ by incorporating the wider life context and principles.

“There is only one point on which I differ from Kurt. I believe we may need more data for analysis—one hundred thousand incidents may not be sufficient. We may need a million or more. Assuming that’s

true, it might require an investment of as much as ten billion dollars, unless we can find a less expensive way to get the work done.”

Ray appeared uncomfortable with talk of such huge investment and questioned whether they were rushing blindly ahead without full consideration of the consequences. “Suppose we slow down the development of AIS⁸ until we are able to generate sufficient resources internally,” he asked.

Bill replied, “According to optimistic calculations that would require five to ten years. If we slow down the rate of investment, it also means extending the payback period. We cannot afford to borrow unless we believe we can return the funds within three to five years. It is very unlikely that an investor will put up money for such an unproven project unless we can show a payback period of three years or less. So I do not think a go-slow approach will work. It is either full speed ahead or nothing.”

Exploration of the options continued for several more hours, but ultimately a consensus evolved that Levin’s approach was the most logical. Ray and Anya agreed to rework the research plan on that basis to arrive at a timeframe and budget. Bill and Vinay agreed to explore possible ways to finance it. Dan asked Levin to work with him to codify a standard research methodology.

92. The Duel

Eddie Choi arrived at MAI at 10 am the following Tuesday, accompanied by two men and a woman. As an old friend, Levin received Eddie at the airport and drove him back to Berkeley in his own car so they would have time to catch up and compare notes. By the time they reached MAI, it was clear to Choi that Levin fully believed in the capabilities of MAI's software. It was equally clear to Levin, that Choi had not come for exploratory talks. He had already done his homework and had come prepared to negotiate. Dan, Ray and Bill were waiting to receive them when they arrived. Choi introduced the woman as Mi-ja Ahn, a mathematician and expert in AI systems. Sun Rhee was CFO of the Choi Group. Kim Lee was group COO. When Dan perceived the size and importance of the team Eddie had brought in, he asked Anya and Vinay to join the discussions as well.

Meanwhile Choi went over to Ray and pulled him to the side, "My brother, Ben, sends his greetings to you. And so does Min. They both insisted that I invite you back to Seoul for another visit. Things have changed a lot in twenty years. It's safe now", he said with a grin. "Min is married. Last time you were there, she had quite a crush on you and it took the family a long time to convince her she would be happier marrying a Korean man." Choi could see from Ray's face that he was too surprised and embarrassed to respond properly.

Bill was planning to begin with a formal presentation of MAI and AIS⁷, but Levin pulled him aside and suggested he skip it. Their guests already knew far more about MAI than they could tell them in a one or two hour presentation. Based on advice from Levin, Dan opened the meeting by asking Choi to inform them about the scope of his family's business activities and his specific interest in coming to MAI. Choi seemed pleased and requested Lee to give them a briefing. It soon became evident that the range of Choi's activities was extraordinarily broad and that the group continued to grow rapidly.

When Lee had finished his presentation, Choi asked Mi-ja Ahn to speak. He said she had been studying AIS at his request and come with some questions. He apologized in advance if anything Mi-ja said sounded intrusive or skeptical. She was considered among the top three experts on AI in Korea and was known to be very difficult to impress. Mi-ja smiled at this description. Choi then turned to acknowledge Anya and said that he understood she had also earned a reputation for directness that some people, especially men, might find disconcerting in a woman. Anya was impressed by the facility with which Choi had set her up to compete with Mi-ja.

Mi-ja's first question focused on the capabilities of AIS⁷. Anya replied that at the outset MAI had defined three levels of objectives for AIS. The first was to develop a system with the capabilities to rationally and consistently explain any event after it had occurred. Mi-ja interrupted her after the very first sentence, offered a cursory apology, then said that she was under the impression that many AI systems already had that capability. She cited examples of systems she had worked on for the Korean government to explain the apparently random behavior of subatomic particles during high speed collisions. Anya took a deep breath and waited patiently for Mi-ja to finish. She understood that she was being challenged by a competitive woman and refused to respond to the bait. Vinay, who was sitting opposite to her, marveled at Anya's self-control. How much she had changed from the spirited and outspoken Russian girl he had first met. Anya was still full of spirit. No one who knew her could question that. But she had recently acquired a mellowness, a feminine softness and patience, that stood in dramatic relief to the high energy, strong willed, brilliant intellectual he had first been so passionately attracted too. She waited for another five seconds after Mi-ja had finished before she responded, demonstrating both respect for the question and a lack of defensiveness on her own part. That was something a thoughtful Indian might have done, Vinay thought.

"You are right, Mi-ja. Many systems have the capacity to explain physical events. So I should have been more careful in how I worded my statement. AIS⁷ is capable of modeling and explaining life events, not merely physical ones. As you know the challenges facing a business are not merely physical. They do not lend themselves to complete analysis in terms of physical laws. Even after a company has grown the way the Choi Group has, it is very difficult to fully explain the reasons for that success. Chrysler Corporation narrowly escaped from bankruptcy twenty-five years ago before making a dramatic recovery that surprised virtually every financial analyst and business guru. Even today there is no authenticated published study explaining that turnaround. There are countless stories of business success and failure. Many explanations are given, but no rationally consistent model has been developed to explain them, even after the fact. When it comes to nations, the challenge is many times more complex. You are probably more familiar than we are with the innumerable theories regarding the economic ascendancy of South Korea and the Asian Tigers. How satisfied are you that they have fully explained how you did it? It may surprise you to learn that most historians concede that the causes of the Great Depression, which occurred eighty years ago, are still not fully understood. I should add that we are still far from being satisfied with the explanatory properties of

AIS⁷, even though there is evidence to suggest that they vastly exceed those of alternative methods of analysis. You asked me what our objectives were, so I am stating them. When you wish to know about the actual achievements and limitations of our current program, I will try to indicate the precise stage at which we have arrived.”

Anya paused. The room was silent. In a few words, she had complimented Mi-ja for a perceptive question, acknowledged her own error and then proceeded to show Mi-ja that she did not understand the first thing about what was happening at MAI. Mi-ja had thrown down a gauntlet. Anya had picked it up and gently returned it to the hand that had cast it. Choi listened intently. Anya’s reply had been set in terms that he could readily understand. AIS was not merely an expert system for running production lines or controlling missiles. He leaned back, keenly observing the discussion and apparently enjoying Mi-ja’s discomfort.

Anya continued. “The second objective of AIS is accomplishment. We are trying to develop a system that can achieve any goal.”

Once again Mi-ja intruded, this time more sharply and energetically. “Excuse me, please, once again. But surely such a broad objective can never be achieved. All successful AI systems are very narrowly focused on accomplishing very limited and specific tasks. In Korea we commonly employ AI systems to determine the type and level of pesticides required for optimal plant growth. One of our defense-related companies manufactures missile guidance systems. The Choi group uses a sophisticated AI model to decide where and how much to invest in different industrial sectors, businesses and financial instruments in order to maximize returns. But each of these systems is narrowly focused. How can you ever hope to create a system applicable to any and every field?” Mi-ja smiled briefly, but behind her smile Anya could sense the powerful thrust of metal challenging her once again to combat.

Once again Anya ignored the challenge. “Excuse me, once again, Mi-ja, for not being more explicit. The first two examples you gave are of systems designed to model physical processes in agriculture, manufacturing and defense, quite typical applications of AI. But your last example relating to finance comes closer to what we are attempting to do here. As you know, efforts to model economic outcomes are extremely frail and fallible, like the computer trading programs that have precipitated wide fluctuations in stock market values during times of stable economic growth. Such programs have proven of very limited value when applied to wider spheres of activity. Certainly it is easier to confine analysis to a single variable or set of variables. But which business can afford to do this? I am sure Mr. Choi, Mr. Rhee and Mr. Lee will agree that their task is far more complex. They must simultaneously evaluate the impact of market, technological, organization, financial and human resource factors on their business, in addition to changes in the regulatory environment, natural catastrophes, political developments, etc. Now AIS⁷ has already demonstrated that it can successfully navigate businesses through these complex challenges, even in instances where competition is extremely intense, technology is rapidly changing or where an entire industry is going out of business. Our objective is to develop a product that will enable any company in any industry to grow very rapidly and profitably, the way Google has grown over the past seven years. If you would like more specific details on the results of our work for past and present clients, my colleagues, who are more qualified, will be happy to provide it.

“I must add that AIS’s success in achieving this second goal is still far from perfect. AIS⁷ has recorded some impressive results under relatively stable social conditions, but it is not yet able to fully account for evolutionary social advances such as the iPod or revolutionary events such as the World Wide Web. Even more challenging, it is not capable of handling the impact of life forces, which will be the central objective of AIS⁸.”

Mi-ja waited impatiently for Anya to complete her explanation, suppressing a smile as she did so. Vinay noticed that smile and did not find it quite pleasant. It reminded him somewhat of a cat’s grin, a cat that was getting ready to pounce. And pounce she did. “It seems to me that there is a fundamental defect in your logic. As everyone knows, the quality of decisions made by an expert system depends essentially on three variables—the quality of the data input into the system, the validity of the axioms used for processing the data, and the validity of the algorithms applied to analyze the data according to the axioms. Your remarkable confidence in the efficacy of AIS⁷ seems to ignore the fact that bad data generates bad decisions, which is a fundamental theorem governing all expert systems. So far you have said nothing about the amount or the quality of data on which AIS⁷ is based or why you are so confident of its adequacy. As you must know, even very simple expert systems such as those used to manage mechanical processes, for example, the movements of a wing flap on the space shuttle, are extremely sensitive to errors arising from inaccurate data. Whereas in this case, you are talking about an expert system that can be applied to any

activity in any field. Frankly, the idea sounds preposterous. I wonder that you have been able to come this far on such an obviously flawed hypothesis!”

Vinay thought that the suppressed smile that now emerged on Mi-ja’s face resembled the triumphant glare of a predator that had just completed a good meal. He braced himself for the inevitable explosion—the natural law of action and reaction that reached its acme in the professional combat between two highly intelligent, proud, strong, aggressive women. Eddie Choi sat erect and motionless. He did not appear surprised, but he seemed decidedly uncomfortable with the way the conversation was developing. The tension was palpable. The air expectant. Anya avoided making eye contact with Mi-ja or anyone else in the room. Her eyes were focused somewhere else, as if she was looking inside rather than at those around her.

“I am very glad you raised this point, Mi-ja, because it provides me an occasion to explain the most fundamental differences between AIS and other expert systems. I can be faulted for not having mentioned it earlier. The most basic design parameter for the expert systems you refer to is that the system is designed to function independently of the people who created it or are involved in its operation. The shuttle pilot is not expected to interact with the wing flap management system, except under extreme emergency situations. *The system functions independently of human beings.* This conception of expert systems is at the basis of the facile notion that machines can evolve by themselves and one day take over for human beings. But it is based on a fundamental fallacy. Most of the problems of human existence, especially those related to our use of technology, arise from this fallacy that machines can be separated from the human beings who create them and the human purposes which they are intended to serve. In fact, humanity has become a slave to the technology it has created. It is not machines that dominate people, but people who submit to the illusory authority of machines. We forget so easily that it is human intelligence that has fashioned the machine. No matter how fast it operates, the computer can never be more intelligent than the quality of the intelligence put into it. That is the basic mistake which leads to untoward consequences.”

Anya paused for a moment, looked around the room and then straight into Mi-ja’s eyes. “Now, in contrast, *AIS is a system fully integrated with human consciousness*, not a replacement for the human being. AIS does not attempt to replace human choice by computer choice. Instead it enhances and magnifies the power of human choice. As you well know, programming a computer to do even the simplest mechanical task such as navigating around objects in a room is extremely cumbersome, because the computer lacks the common sense even of a young child. AIS avoids that problem. It draws upon and magnifies all the capabilities of the human mind—which is by far the most complex and sophisticated creation in the entire universe—its capacities for memory, sensory discrimination, judgment, perception, imagination, intuition, and its common sense, the way the telescope and microscope magnify our visual abilities. Human beings do not have to learn how to make successful choices. We do it every day, thousands of times—when walking, dressing, eating, crossing the street safely, communicating with other people. We are successfully *surviving* at every moment. Every organization is too. AIS is designed to enhance that capacity for accomplishment so that we can not only survive, but also grow; or if we are already growing, grow faster and accomplish more than before. Human culture is a rich reservoir of knowledge regarding accomplishment, only it is largely subconscious and incomplete. AIS makes it conscious and complete.

Dan smiled in admiration at Anya’s clarity, poise and adeptness. He thought he could discern Vinay’s influence on her personality development. While the men in the room began to think the duel was over and they had escaped without major casualties, Mi-ja evidently had a different view and charged again. “You stated that AIS⁸ will be able to take into account life forces. What does that mean? I do not ever recall a reference to life forces in any business plan of the Choi Group?”

Anya had anticipated that question. “Of course, Mi-ja, those involved in purely physical systems rarely even observe the impact of life on their activities. In fact, they tend to regard life as merely a subset of material processes that can be controlled and predicted by more perfected technology. But human beings live and act in life and it is the forces of life that determine the results of our action, not merely the material forces of physical nature. But I believe Mr. Choi will quickly grasp my meaning. When your group decides to introduce a new product or lower your price, what price or features will generate maximum growth and earnings? When you negotiate a contract, how much should you bargain in order to get the best deal? What can you do to maximize revenue and profit growth in each company? Which person or people will be most effective in achieving that goal? If your objective is to increase your market share in the US, how far can you exert pressure on US competitors before your market thrust backfires and raises resistance that cancels out the benefits you have gained? The answers to these and countless other questions require not only knowledge of markets, technology, finance, people and organization. They require knowledge of the principles of accomplishment in life.

Mi-ja opened her mouth to ask another question, but Choi held up his hand to stop her. “Let us permit Ms. Serova to complete her answer to your first question before we ask another.”

Anya smiled at him and proceeded. “The third original objective of MAI was to develop a system with the capacity for infallible prediction. But we now realize that this objective can never be achieved and so we no longer pursue it. I mention it now to avoid any confusion regarding the purpose and applications of AIS. This is not a tool for prediction. It is a tool for accomplishment. Perhaps Mi-ja would like to ask me a question on this.”

“Yes,” Mi-ja said, before Choi could restrain her. She spoke rapidly and could not suppress her growing sense of irritation and frustration. “I am surprised by what you say. First you claim capabilities for AIS⁷ that no one else even believes possible. Now you deny the possibility of achieving things that have already been achieved by many other systems. One of us is surely confused.”

Anya ignored Mi-ja’s last sentence. It was already obvious to everyone in the room where the confusion lay. Good manners dedicated magnanimity on her part and she tried to offer it genuinely. Mi-ja braced for another blow. She was astonished when Anya offered something very different in response to the intended provocation. “I apologize, Mi-ja, for speaking so thoughtlessly, especially to you. Everyone who matters in the global field of AI has studied, as I have, your pioneering work on Moore’s Law. I believe you were the first to develop a computer model to validate the prediction about growth in micro-processing capabilities which Intel’s founder, Gordon Moore, enunciated forty years ago. I recall the brilliant paper you presented at the Millennium AI Conference in Fort Lauderdale showing that your model was even more accurate than Moore’s principle.” Mi-ja could not restrain a pink blush of embarrassment from suffusing her previously pale white cheeks. Anya had not only just conquered an enemy. She had just made a friend. “What I should have said was that prediction of life events is not possible, because the number of variables and the number of laws governing their interaction is unlimited. Our model for AIS⁸ will incorporate one thousand axioms. We expect it to far exceed in accuracy any known systems for prediction of life events, but the world does not yet possess either the knowledge or the computer power to do so perfectly. Therefore, we have decided to confine our focus to the sphere of accomplishment, and leave prediction to sages, oracles and prophets.”

Mi-ja was too impressed and too embarrassed to ask anything further at the moment, so she thanked Anya for her insightful clarifications and said nothing further. Bill offered to give their visitors of a tour of the facilities, but Choi declined. “Thank you, but that will not be necessary. I think I have already seen everything I need to see.” Bill concluded in great disappointment that for some reason Choi had already decided that MAI did not offer anything useful to his group. While he was groping for words, Levin stepped in. “Eddie, I know you have had a long flight and, given the time change, you must be exhausted. Why don’t we get some lunch. Then I will drop you at your hotel for some rest and we can reconvene for dinner this evening?”

Choi replied, “Actually, Kurt, I am feeling quite fresh and energetic after our morning session, but lunch sounds like a good idea.”

The whole party convened for lunch at seafood restaurant on the Bay. Mi-ja made it a point of sitting next to Anya and began chatting in a very friendly way. She said she had suddenly recalled hearing Anya’s presentation at Fort Lauderdale in January 2000, but had not recalled the fact until Anya mentioned being there. Rhee sat next to Bill and inquired discreetly about MAI’s size and growth plans. Lee was eager to hear from Vinay about their work with other business groups. Levin, Ray and Dan huddled at the other end of the table with Choi, who spoke generally about the Korean economy, the explosive growth of China, and the showdown with North Korea.

Choi listened eagerly to Ray’s narrative about the Washington meeting, but it soon became evident that he already knew every detail about what had occurred as well as the response of North Korea. “By the way,” he said, “they did relate your robber story to Kim and he did laugh heartily. I heard it from someone who was present at the time. A brilliant stroke! You might even say that it was the robber story which brought me to Berkeley. That, and my very high regard for Kurt’s judgment.”

After lunch Choi and his party retired. The partners reconvened at MAI together with Kurt. Anya spoke before anyone else had a chance. “I am sorry, you guys. I don’t know what I said, but obviously it was enough to kill whatever interest Choi had in MAI. Anyway, I have made a friend in Mi-ja and her contact may be useful to us in future.”

“It will be more than useful, Anya,” Levin interjected. “If I have understood anything from this morning’s meeting, you will be working very closely with Mi-ja in future. Choi has not lost interest in MAI.

In a few hours you have satisfactorily answered all the questions he wanted to address during the entire day. I doubt very much he will get a wink of sleep this afternoon. He never does when he is really interested in something. He will be meeting with his team to decide on what to offer or propose. Judging from what I could overhear of your discussions with Rhee and Lee, they already have the basic answers they need in order to start negotiations. Be prepared for an interesting dinner tonight.”

A magnificent smile slowly filled Anya’s face.

93. Vision

Levin agreed to meet Choi at his hotel and bring him and his party to the restaurant. The five partners arrived first and awaited their guests. A few minutes later Levin and Choi entered by themselves. Choi offered a vague excuse on behalf of his associates, but seemed pert and cheerful. As soon as they had settled at the table, he immediately became serious. "I am deeply impressed by what you are doing. How can I help?"

The partners were somewhat taken aback. They had expected questions from Choi about what MAI could offer to his group and on what terms, followed by the traditional ritual of negotiations that would extend for days. Here was Choi coming back asking how he could help. No one was quite prepared for that question. Seeing their hesitation, Choi spoke further. "Several things are obvious to me. The first is that you are attempting what no one has attempted so far. Once her professional credentials were sufficiently recognized by Ms. Serova, Mi-ja became quite generous in acknowledging to me the uniqueness of your accomplishment. She frankly told me it might take months of study for her to fully comprehend what you have already achieved. In fact, she was so excited she asked me to relieve her of her present project responsibilities so that she could work on this full time. And that's before we have even agreed upon a project to work on! The second thing that is clear to me is that the world has not yet recognized the value of what you have created, but it soon will come forward offering to cooperate and support your effort. We would like to be the first to do so." Choi sat back in his chair smiling and waiting for a response.

Dan thanked him for his interest and his offer, said that MAI was eager to explore the grounds for collaboration, and welcomed Choi's ideas and suggestions. Then Choi said, "Thank you, Dan. I am very pleased. Now I hope that the next thing I say will not be taken amiss, but it is also evident to me that you have not yet fully understood the potential of your own work." Ray felt irked by the statement. Anya's smile gradual melted to neutral. "Please allow me to explain," he continued. "No doubt you understand that intellectually and technologically you are on the frontier of human endeavor. But the magnitude of the challenges you face are so enormous, I doubt very much you have had time or energy to fully reflect on the potential impact of your work on the world, any more than Tim Berners-Lee could have grasped the revolutionary impact of the World Wide Web when he first proposed a hypertext standard for internet communication fifteen years ago. Nor did anyone else until at least five years later.

"As the Internet has revolutionized global communication, multiplying the speed and volume of data flows a thousand-fold while radically reducing costs; as the Web has revolutionized the way work is organized and conducted in virtually every field of human activity throughout the world, which is having a catalytic impact on global development that is barely perceived by most people; in a similar vein, I believe that in the not too distant future AIS can revolutionize human decision-making processes and accomplishment in every field and at every level from global politics and macro-economics to commercial prosperity and individual achievement. I know that this has been your stated intention—your passionate dream—from the very beginning, but I wonder if you really have any conception of how vast are the implications of realizing it. Analogies are poor substitutes, but imagine the difference between the world as it was before the advent of the PC in the early 1980s and the world as it is today. I have a theory that the PC was the real reason for the end of the Cold War. I know it may sound crazy, but the empowerment of the individual symbolized by and embodied in the spread of the PC in Western society finally made it clear to the Soviets that centralized authoritarian control could never compete with the liberated individual. The change you are pioneering will be far more revolutionary and exponentially greater in magnitude."

Choi began suddenly to laugh and pushed back from the table. "I must apologize for laughing. I suddenly saw the irony in my own statements. Here I am preaching to the visionaries, when my own expertise is only capitalizing on other people's vision. I don't claim to be far-sighted. Rather I pride myself on my pragmatism. It's just that I have never before come across anything quite so exciting as the work you are doing. I know it sounds presumptuous for me to be telling you about the importance of your own work—and perhaps I am undermining my own bargaining position in the process—but this would not be the first time an intellectual or technological visionary lacked insight into the practical implications of their work.

"I saw a striking instance of it during the years I spent in Japan. As a child, I was very fortunate. My parents understood the importance of education, so at the age of three they sent me to a small private school in Kyoto. The methods of early childhood education applied at the school were revolutionary. They were developed by an American educator named Glenn Doman, a man virtually unknown in your country, but worshipped by many as a national hero in Japan. Doman evolved methods to vastly accelerate the quality of early learning in a manner that it actually stimulates greater development of the neural networks in the brain. When I grew up and made my first visit to the USA, I requested a meeting with this remarkable man. To my disappointment, I found that he did not fully understand the significance of his own discovery and

how to fully leverage it for the good of humanity. If he had, education in America would not be lagging so far behind other countries.”

“Kurt must have told you that I have a reputation for being somewhat brash and outspoken. Please do not judge my countrymen by my example. I’m an exception. My only excuse is that I completed my engineering and MBA at MIT, where brashness is almost considered a necessary attribute for success. Since Kurt spoke to my brother Ben last week, I have been in contact with a dozen of your current and previous corporate clients. All of them express the highest regard for MAI and AIS. All of them said their companies had benefited enormously from the association and that they planned to continue working with you in future. That is an impressive, indeed remarkable achievement for any consulting firm. But presently you are touching only the tip of the iceberg. The combined revenues of all your clients are less than the revenues of the Choi Group. And there are dozens of groups in Korea larger than our own. I don’t need Anya’s knowledge of mathematics to know that the financial potential of AIS is mind-boggling. Do you realize that MAI could be the largest corporation in the world five years from now?”

Everyone had been listening with interest as Choi expounded on the potential of AIS. Vinay thought Choi had underestimated their awareness of its potential, but he was pleased to hear a potential client waxing eloquent about his own product. Ray was slightly put off by Choi’s brashness, but he was still too surprised to be meeting with his former roommate’s brother to take any offense. Bill seemed the most surprised by the magnitude of the potential Choi spoke of. Dan, who sat motionless considering every word, was the first to respond. “I agree with what you have said, Eddie. We have been so absorbed in the technical and philosophic implications of our work, that we have not really looked much beyond the immediate opportunities and challenges we face. It is very frank and generous of you to point it out, and most especially to ask how you can help. And the truth is, the challenge that presently preoccupies us may prevent us from availing of those greater opportunities for the foreseeable future, unless we can arrive at a new strategy and business model. I don’t know how much Kurt has told you about AIS⁸, but we are just on the verge of our greatest initiative.” Dan then asked Ray to explain the research and development strategy for AIS⁸ and the dilemma it posed.

When Ray had completed his explanation, Choi resumed. “So you need eight billion dollars to complete AIS⁸. That is a lot of money, especially for whose annual revenues are still less than two hundred million dollars. It’s a lot. But it might not be too much.

Choi spent the next three hours asking questions about the research strategy and making suggestions about how it might be organized and financed. He never spoke a word about what he wanted in return. Toward the end of the evening, Choi quite suddenly reverted to MAI and AIS. “By the way, do you have any idea what companies like Microsoft think about AIS?” The question coming out of the blue, as if by chance, struck Kurt as odd. Though Choi appeared nonchalant, Kurt sensed that it was not a casual inquiry. When no one replied to his question, Choi continued in a similar vein. “Oh, it was just a thought. If I were a company which enjoyed a near monopoly on computer operating systems, I would be mightily concerned about the possibility of being supplanted by a new generation of software that is light-years ahead of what is in use today. I mean Windows facilitates performance of physical tasks on the computer, but if AIS ever evolved into an operating system, it could transform every PC from a tool for physical efficiency into a highly sophisticated instrument for human accomplishment. Just a thought. AIS probably has not even come on to their horizon yet; but if it ever does, you better be prepared for a tough battle. Anyway, with a man like Kurt around, I need not tell you about the importance of security.” Choi looked at his watch and just as abruptly turned the conversation to trivial subjects for another thirty minutes, before excusing himself for the night. Did Choi know something that Mossad did not know, Levin wondered, or was he just speculating about a wild possibility?

The following morning Choi arrived promptly at MAI with the other three members of his team. When the meeting began, Choi stunned everyone with his opening remarks. “Although our group does not have the kind of liquid cash you need, I believe we can raise one billion internally and another billion from other sources on the strength of our assets. As for the rest, I will be happy to put you in touch with a few of our European partners who may be able to raise the balance.” Bill was astonished at the decisiveness and speed with which Choi and his group moved.

The discussion then turned to explore the possible basis for collaboration. The partners had expected anyone providing capital of this magnitude would demand a controlling interest in the company, which they were not willing to part with. They had expected tough negotiations. Again Choi surprised them. In return for his investment, he did not want any equity in MAI. The partners were speechless. What Choi did want in exchange for the two billion was marketing rights for AIS⁷ and subsequent versions of the software in Korea for the next five years. Seeing the surprise and skepticism on everyone’s face, he pointed

out that if his understanding of AIS was correct, what he was asking would generate at least a ten fold return on his investment within five years. He could not speak on behalf of the European group, so MAI would have to negotiate terms with them directly.

Before he departed the following day, Choi set up meetings for Bill in Paris and London with two of his European partners the following week. He then left his three colleagues to work out a detailed plan before returning to Seoul. By the end of the week, they had signed a memorandum of terms and a schedule for payments to be disbursed over a ten month period.

The following day the partners met to take stock and develop a plan of action. Dan proposed introducing a division of responsibilities to handle the huge expansion, with Bill and Vinay responsible for the commercial division, Ray and Kurt for the government division, he and Anya for R&D. Kurt reminded them that he was still an official employee of Mossad and could not accept another position at this time. Dan replied, "Kurt, even if we asked you to work here for free, I am sure you would not pass up the opportunity to be part of this. We consider you part of our team whether you want to be or not. In ten days you have helped us develop a breakthrough strategy for AIS⁸, brought in more business than we have generated since our inception, and raised more capital than we had ever thought possible. As far as I am concerned you have already more than earned a central place at MAI.

94. Transactions

The following week Ray and Kurt began contacting university departments of economics, history, international affairs, English literature, management and political science in the USA, Canada, UK, Israel, India and Australia to invite research proposals to provide data for AIS⁸. The request for proposals stipulated the type of research to be undertaken and the guidelines, but it did not explain the end use for which the material was being gathered.

Bill left for Europe on Monday and called in to report that Choi's partners in London and Paris had given a polite and interested listening, but it did not appear likely that either of them were sufficiently impressed by the record of AIS⁷ to venture large scale investments. By chance an old business acquaintance and wealthy family friend of Bill based in Frankfurt called over the previous weekend and insisted that Bill drop in while he was in Europe. The following day Bill reported to Dan that his Frankfurt contact, Rolf Oppenhauer, thought he could help raise private placement capital for MAI and asked Bill to remain in Europe for a few more days so he could make some introductions. In subsequent calls, Bill reported very encouraging responses from a private financial group. Promising to introduce some more potential investors Rolf persuaded him to spend a few days at his chateau in the Austrian Alps.

The following Monday Bill returned to the office exhilarated by the speed and magnitude of his success and the high level of culture and professionalism of the people to whom he had been introduced by Rolf. "I think I can safely say we have found all the money we need, assuming we are comfortable with their terms. These people come from the top ranks of European society. Very bright, well-connected and very rich." He was pleasantly surprised to discover how knowledgeable they were about AI and how perceptive were the questions that asked regarding MAI and AIS.

When the time came to discuss the terms of the financial proposal, Levin excused himself. Bill explained that the European investors were willing to put up the entire eight billion dollars, part as a loan and part as equity in MAI. Since they did not run operating companies like Choi they were not interested in a similar arrangement for marketing rights. Considering the amount of money involved and the absence of physical assets to secure it, they pressed for majority control of the company. Bill argued in turn that Choi's commitment of two billion without equity in exchange for marketing rights in a single market was ample proof of MAI's value. He said that best he could offer them was 33 percent of the equity in exchange for two billion in shares and four billion on loan for three years. After long negotiations, they finally agreed.

Bill's news had a startling effect on the partners. It was difficult for them to even imagine someone agreeing to assess the total value of MAI at twelve billion dollars, when its total net earnings to date had not yet crossed ninety million dollars. They would have much preferred giving away licensing rights for all of Europe rather than parting with equity, but Bill was convinced that it would be extremely difficult to find another partner willing to make a deal like the one Eddie Choi had offered. "Europe is a much more conservative market. I could not even convince Choi's French partners to put up one billion for the entire marketing rights in France. I don't particularly like it either, but I think it is the best we can do."

Bill then presented an outline for an overall financial plan for restructuring the company, including a new employee stock option plan. He proposed that the partners retain 51 percent of the shares and leave the balance for distribution to employees. They decided to offer Levin a full time position at MAI with possible share options down the road.

For a long time Levin did not respond. Anya observed that his eyes were glistening. Finally he spoke, "I have already notified Mossad of my intention to resign. Even if you do not offer me a single share, I cannot walk away from the opportunity to be part of this."

Dan also tabled a proposal to establish the MAI Foundation for public service to be financed by corporate and individual donations by the shareholders. He then reminded them all not to speak about any of these issues until the proposals had been finalized.

The discussion then veered back to the European investment proposal. Bill briefed Levin on the details and eventually all the partners agreed to go ahead with it. Then Bill set up meetings for Dan and himself in Frankfurt the following week to meet the investors. The agreement with the Choi group was signed on November 24 and the European deal two days later.

November 7 was election day. Ed Chow circulated a set of projections the day before and the entire senior management stayed up late Tuesday night trying to determine the accuracy of AIS⁷'s predictions. As the results poured in it gradually became evident that the Democrats were performing far better than the polls predicted. Wednesday morning America awoke to the first Democrat-controlled Congress in sixteen years. AIS⁷ had proved as adept at predicting the outcomes as most of the major pollsters, but Dan did not

seem too interested or impressed by that fact. What did interest him were the second set of predictions that Ed Chow had run. In these, he asked AIS⁷ what would be the outcome of each major race if the candidates incorporated AIS⁷'s policy recommendations in their electoral platform. Here the results were quite astounding. In over 90 percent of the instances in which election outcomes were classified as tossups or too close to call by major pollsters prior to the elections, AIS found that the candidate who had most closely adhered to AIS⁷'s policy recommendations actually won the election, irrespective of party affiliation. By comparison, the closest any other poll came was 72 percent accuracy. This was the kind of evidence Dan had been looking for. AIS⁷ was not a perfect tool for predicting outcomes and probably never would be, but it was proving to be a superior instrument for higher accomplishment. These results confirmed that they were on the right track.

By mid-November work to launch the research project for AIS⁸ had gained momentum. Proposals started flowing in from universities across the country and internationally. Initial contracts were signed with departments of seven universities in North America, two in UK and one in India. Vinay focused on marketing consulting services to new corporate clients in the US. Anya began experimenting with various approaches for translating the life axioms into algorithms. Dan spent most of the time in his office studying *The Book* and discussing passages with Levin who could be found there whenever other responsibilities were not pressing. Mossad refused to relieve Levin from his contract which was enforceable under Israeli military law, but granted him six months leave of absence to continue the work at MAI.

95. Fissures

Anyone who wants to achieve must be capable of protecting what he has and be alert to safeguard what he will create.

Messages XVIII

The first installments from Choi and Oppenauer arrived by December 5. A few days earlier a series of disturbing rumors circulating within the company began to trickle up to the partners. News about the investment deals had somehow gotten out despite extreme care among the partners and senior management to keep the information confidential. Money of that magnitude tends to attract a lot of attention, but since neither of the investors were likely to make it public, renewed concern arose as to how the information had leaked.

Added to this, Levin received intelligence from Mossad, which was still closely monitoring MAI activities, that at least one more group appeared to have placed the company under surveillance. There was also a report that Mossad was making progress in tracking down the European business group.

On December 2, Vinay reported another incident to the partners which revived concerns about a high level internal leak. He was walking down the hall and overheard two employees casually talking about a new stock option plan and establishment of MAI Foundation. Speculation about bonuses and stock option schemes was rife in many companies, especially toward the end of the year. But the subject of the foundation had never again been discussed by the partners since the day Dan first mentioned it. So the question arose, who had spoken to whom about the idea. Each of the partners emphatically reassured the others that they had not done so. Vinay proposed to ask the employees how they had heard of the proposal, but Levin advised him to wait. If no one in the room had spoken about it, then the situation may be more complicated than they realized. Then Levin asked, "What about anyone outside the company—outside of the six of us?" Again each of them in turn rejected the possibility until it came to Ray, who looked somewhat pale and slightly nodded his head in agreement. A few minutes later, Ray got up and left the room saying he was not feeling very well.

Later in the day Dan tried reaching Ray by phone, but he was not picking up his calls. Anxious about Ray's sickly appearance, abrupt departure and failure to respond to the phone calls, Dan left the office early and drove to Ray's house. When Rana opened the door, Dan saw that she looked extremely pale and agitated. "Is Ray OK, Rana? He left the office abruptly and I have been unable to contact him since."

Without speaking, she gave a nod to indicate that Ray was at home and opened the door wide for Dan to enter. With a gesture she indicated he was in the study. Dan approached the closed door, knocked, announced himself and entered without waiting for a response. He found Ray sitting at his desk staring out the rear window with his back to the door. "Ray, are you alright? We were all concerned when you left without explanation; and when you did not answer your phone, my imagination began to run away with me. What's wrong?"

Ray turned around and his eyes met Dan's. They were red with dark rings around them and there were flushed blotches on his otherwise pale cheeks. He stared at Dan for a moment and then said, "I found the leak, Dan." Dan was filled with a sense of foreboding. Suddenly he thought he understood, but he waited without interruption for Ray to continue. "It was Rana. At first she denied it, but when I pressed her, she admitted that she had spoken with this guy in her office at HP. I was ready to dismiss the incident as a one time lapse which had nothing to do with our concerns regarding *The Book* and the break-ins. But something in her voice made me alert. I knew she was holding something back. When I persisted, she admitted that this was not the first time she had spoken about what was happening at MAI. Then she admitted that each time she had only spoken to one other person. I pressed her to tell me who that person was and why she had spoken. Then she burst out in tears and told me everything. It seems the guy is young, smart, good looking and charming. She was taken in by his attention and struck up a friendship with him, thinking he was interested in her. It has been going on for several months. He flattered her with compliments about MAI and AIS and told her she was going to be a very rich lady one day. She took it all as an expression of his personal interest in her and so kept responding to his innocent questions about me, the company, my partners and our work. And that is not all. She told him about *The Book* as well." Ray choked on those words and could not speak further. Dan remained quiet, standing motionless in front of the desk.

Fifteen minutes passed before Ray resumed. "I couldn't bear to face you and tell you what happened. When Levin asked us in the meeting a few weeks ago whether any of us could have revealed the existence of *The Book*, I recalled that I had spoken of it to Rana on several occasions, but I could not bring myself to believe she would speak to anyone about it. She knew we were keeping it under wraps. I have not told you about all the arguments Rana and I have had during the past two years, all the doubts she has raised

and challenges she has thrown at me. She always sided with my parents' view and argued that AIS was doomed to fail just as our previous effort had. When she pressed me to explain why I was so confident we could make AIS do what no one else had so far accomplished, I told her about *The Book* you had found and the key role it has played in our work. I am the one who created the leak and jeopardized the entire project. I can never forgive myself or Rana for what we have done. She must be the one who spoke about the MAI Foundation, as well." Ray paused, but Dan sensed he may still have more to say. He was breathing irregularly and coughed several times.

"There is more, Dan. Rana thinks she is in love with this guy and has offered to leave me for him." Ray paused again to see Dan's response. When Dan remained quiet, he resumed. "Do you understand the implication, Dan? He has convinced her to come away with half of our property, which means with half of our shares in MAI! The guy must figure he will become super rich. Oh, I don't mind losing the money. Right now I am not sure whether I mind losing my wife. Except for the sake of the kids, our marriage has been filled with unpleasantness for many months. Recently I thought it was getting better. I was feeling better about it myself, but now I realize she was only putting up a behavior to compensate for what was going on with him. The worst part is the realization that a big chunk of the shares in MAI may go out of our control. That is really frightening! She has betrayed not only me but all of us."

Again Ray paused, but he signaled by his expression that he wanted Dan to wait and let him complete what he had to say. "I have decided to resign and sell our shares back to the company before she can file for separation."

Dan replied, "Just hold on Ray. This is not the time for any decisions. Let us take some time to reflect on the situation. We will find a way out." Dan still had many questions, but he realized this was no time to tax Ray on any subject. He sat quietly for another few minutes and then excused himself.

The following morning, Ray did not come in. The other partners met and Dan related what Ray had told him. They sat for several minutes in silence. Then Vinay said, "I still don't understand how word of the MAI Foundation reached our own employees. Even if Rana spoke to someone forty miles away at HP, how did it get back to our own staff so quickly? Unless, of course, her friend at HP has a friend at MAI."

"In the normal course of things, that might be natural and nothing to be concerned about," Levin added. "But if Ray is correct that Rana's friend at HP is really after her shares in MAI, then the possibility arises that he is not acting on his own. He may be working for someone else. His contact at MAI, if there is one, may represent a greater danger to us than the guy at HP. We need to find out who it is."

Just then Ray walked in the room. No one had expected to see him or knew how to respond. Anya stood up, walked over and hugged Ray before he could sit down. Vinay reached out an arm and rested it on Ray's shoulder. In order to avoid an awkward silence, Dan then summarized the discussion for Ray and repeated their concern about an internal leak. "Ray, I realize this is not what you would like to speak about," but can you tell us anything more about the guy at HP?"

Ray nodded and gave a feeble smile. His name is Gunther Henmann. He is an MBA who has been working in Rana's department at HP for about three months. I believe he is about thirty-five, which means two years younger than her.

"Henmann," Levin repeated. "Is he German?"

Ray shrugged. "Yes, I believe so. She said he has been living over here for a few years."

The corners of Levin's mouth sank into a deep frown. "I don't like it. First, we find out that a party that traces back to somewhere in Germany is conducting surveillance. Second, a group of German financiers offers us six billion dollars. Now we find that at least one main source of the leak is a German engineer who knew about *The Book*, AIS, the foundation and probably much more information that Ray would quite naturally have shared with his wife." Everyone understood that Levin's last few words were intended to exonerate Ray from any accusations regarding the propriety of what he had done, but everyone also knew that Ray was the kind of person who would refuse to forgive himself, regardless of how willing others may be to excuse him.

Then turning to Bill, Levin asked, "Bill, tell us everything you can about Rolf Oppenhauer and his group. How long have you known him? When and how did you meet? Try to recall everything you heard or overheard during your meetings in Germany and Austria and tell us about anything that might be of significance."

Bill remained quiet for several minutes and then began narrating the history of his relationship with Rolf. Rolf had been a business acquaintance of Bill's father, and had lent some money to the family company. In fact, their company was still indebted to Rolf to the tune of around one hundred million dollars. Bill had helped negotiate the loan and draw up the papers. He had occasionally met Rolf at his parents' home, the last time about four months earlier. Bill said he had never thought of approaching Rolf on behalf of MAI because he was under the impression that Rolf only invested in very conventional, risk free ventures backed by good security. Levin asked whether Rolf could have known about MAI from Bill's father or himself. Bill thought back and suddenly recalled a conversation that occurred during Rolf's last visit. It took place soon after the confrontation with Thompson. Bill was down for the weekend and was speaking to his father about the pressure tactics applied by the current administration against business. Bill could not remember exactly what he had said, but it was possible that Rolf had heard enough about MAI and AIS to attract his attention.

Levin pressed for more information about what had happened when Bill met Rolf in Europe. At this point Bill hesitated and seemed somewhat nervous. Levin urged him to speak frankly. Bill admitted that he was surprised when Rolf had called him just prior to his departure for Europe. He could not remember Rolf ever having called him casually in the past. He was even more surprised when Rolf insisted he come to Frankfurt. When Bill had hesitated, the subject of the loan to his father's company somehow came into the conversation and Bill felt obliged to accept the invitation. Bill also admitted being surprised at the depth of Rolf's interest and the nature of the questions he asked about MAI and AIS. Looking back, it now seemed obvious to him that Rolf had called him to Frankfurt in order to discuss MAI and negotiate a deal. That meant Rolf knew all about the negotiations with Choi and the need for further funds before Bill left America. He now also recalled how quickly Rolf had dismissed the offer of marketing rights for AIS, as if he had already knew that possibility might be offered and had decided against it. Levin then asked him to recall the names of the people he had met. Levin took them down with all the details Bill could recall about each, so that he could pass it on to Mossad for research.

By the end of the morning, everyone had almost forgotten the leak at HP. All attention was now focused on the implications of what they had heard from Bill. They became increasingly uneasy as they began to speculate about Rolf's intentions. Levin summed up his impressions. "It seems likely to me that Rana's contact at Henmann and Oppenhauer represent the same group. That not only explains how Oppenhauer knew as much as he did about MAI. It suggests that Henmann was planted by Rolf at HP with the intention of winning over Rana. Pardon me for saying this Ray, but I wouldn't blame Rana too much. We can assume that Henmann is a professional, chosen for his good looks, charm and capacity to seduce any woman. Only a saint could escape his clutches unscathed. Married women over thirty-five with children are an easy mark, because the dream of romance has faded from their lives but still lives in their imagination. This probably explains the second break-in at Dan's also. Oppenhauer learned about *The Book* from Henmann. Not having any idea what it might contain, he tried to steal it. But that still does not explain the first break-in, which occurred prior to Bill's meeting with Rolf in late August.

Bill continued to look nervous and uncomfortable, despite having unburdened himself of so much. Finally he spoke up. "There is more I need to tell you. During my initial discussions with Rolf in Germany, he asked me about my own financial relationship with MAI and I told him about the shares and options assigned to me. Sometime later in a different context, Rolf mentioned that he will need to call in the loan to my father's company which is now coming due at the end of this year, unless renewed for another two years. He casually asked how the family intended to repay it. I told him that due to a recent set back, his father was planning to contact Rolf for renewal of the loan, which Rolf had led them to understand in August would not be a problem in view of their long standing association and the company's substantial physical assets.

"Rolf appeared embarrassed and upset. He then told me that, in fact, he would not be in a position to renew the loan because the partner who had provided those funds was insisting on their return. He seemed to be genuinely concerned and sorry for the situation we were placed in. He thought about it for a while and then suddenly recalled my share options in MAI. He asked for details and said that we would be willing to accept the options at the price I had contracted for them, which would be more than sufficient to completely pay my father's loan, return my investment in MAI and still leave me with a four percent share in MAI. When he saw that I was not very pleased by his offer, he told me not to be greedy. After all I would be getting a six-fold return on my original investment in MAI within four months and still have more shares. It was hard to argue with his logic or find fault with his offer.

"I didn't like the idea at all, but I thought that overall, it was a fair deal. The family company, of which I own 33 percent, would be completely out of debt. I could recover my twelve million dollar investment and pay back the four million dollars I had borrowed to buy shares. MAI would get the money it needed. The value of MAI shares would rise enormously. Even after transferring half of my shares to Rolf,

what remained would still be worth four or five times more than the original shares assigned to me and I would own them free and clear.”

A guilty flush came across Bill’s face. “Of course, I intended to speak with you about it before making anything official,” he said in a plaintive voice. “I was waiting to see whether Rolf would really insist on repayment of my father’s loan or whether there were any alternatives to selling my options. I was so caught up in the money, I never stopped to see what he was doing. The truth is I did not give enough thought to what impact that might have on control of MAI.”

Anya asked, “I don’t follow what you mean, Bill. What impact are you referring to?”

Levin interjected, “Bill means that Rolf is making a play for the whole company. He now controls 35 percent of MAI through our financial agreement. Through Henmann he hopes to wrest about 8 percent that is Rana’s share of Ray’s stock, and he is pressuring Bill to turn over another 12 percent immediately. Then all Henmann has to do is persuade Rana to sell some of her shares to Oppenhauer and he gains control of MAI. If that does not work, he can always mop up the shares he needs from MAI employees at an irresistible premium price.”

Vinay felt a pain deep in his gut, briefly reviving fears of his pancreatitis, but he quickly convinced himself it was only the tension of these revelations that caused it. Anya suddenly felt like a dark, heavy blanket were suspended overhead, keeping out the light, preventing the flow of air and making it difficult to breathe. “Well, isn’t there something we can do about it?” Anya asked.

“Just a few weeks and it would have been too late,” Levin remarked. “Fortunately, Ray made the connection and unearthed the plot before it could be completed. But even now it may be difficult to stop Oppenhauer. Obviously the first priority is to persuade Ray’s wife that she is the victim of a plot rather than the romantic object of a love affair.

“If Ray will permit me, I would like to take that responsibility,” Bill said. “It is clear that I have endangered the very existence of the company and all the work you have done. I have been a close friend of Ray and Rana for years. I know her well and I think she trusts me. At the very least, she will listen to what I have to say.” Bill looked over at Ray, whose head was bowed, staring at the floor. Slowly Ray raised his head, made eye contact with Bill and nodded his consent.

“Oppenhauer will certainly continue to pressure your father for the money, Bill,” Levin continued. “Coming up with hundred million dollars will be very difficult. Unless we do, expect Oppenhauer to be ruthless in exerting greater pressure, even at the risk of ruining your family business. The stakes are too high and he has already invested too much time, money and energy in this scheme.”

“I am not aware of any other options,” Bill replied. “The company is mortgaged to the hilt. But even if it means the ruin of my family, I will not turn over MAI stock to Oppenhauer if that is going to give him a controlling interest here. I cannot sacrifice MAI for the sake of my family business.”

“What about the employee shares?” Anya asked. “Surely if we explain that Oppenhauer’s intention is to take over the company, we can persuade them not to sell; especially, when they understand that MAI may well be ruined in the process.”

Dan shook his head. “Maybe we could persuade Lauren and one or two more to sacrifice that much for us. But not the others. Remember, the smallest employee shareholder can get five or ten million dollars for his shares from Oppenhauer and, if necessary, even twice that amount. Whatever he has to pay for that last few percent will be small change compared to what he has already invested. Even if they believe it will ruin MAI, their own fortunes will be made. It is not realistic to expect many to refuse such an opportunity, especially considering their shares are not likely to earn any dividend for the next few years and there is no public market for them until MAI starts earning decent profits, which will be deferred for at least two years if we make the planned investment in AIS⁸. No, we need to think of another strategy to stop Oppenhauer.”

By the time the meeting adjourned, everyone was too exhausted to find anything to be cheerful about. It was already past eight pm when the meeting adjourned. As they were leaving the office, Vinay turned to Dan and Ray and said, “Remember how you felt at that close call with the bus in Washington? I felt stunned for several hours. The experience had only lasted an instant, but it had happened so quickly and had been so frightening that I did not feel relieved even after I realized we were saved. That is kind of how I feel now. I am so very glad that we have found out about this before it was is late to do something about it. But I do not feel even a slight sense of relief or reassurance.”

Dan nodded and replied, “That’s because the threat remains very real. Just because we know what Oppenhauer has in mind, does not mean we can stop him.

96. Counter Measures

Dan barely slept that night, and when he did, his sleep was full of strange dreams. Several times he awoke in a fright that *The Book* had been stolen and checked under his pillow to ensure it was still there. He dreamed of running and being pursued, of gambling for huge sums in a high stakes poker game, of chasing after a beautiful woman with whom he was in love but seemed always to elude his grasp. Unable to get any real rest, he got up at 5 am, showered and sat down to read *The Book*. Life had become so demanding in recent months, that despite his resolutions it had been a long time since he had sat with it and really searched for inspiration. He opened the book at random and began reading. The words seemed to jump off the page, pregnant with meaning. Each sentence read like a personal message and each message shed further light on his situation and the best course of action. He reached for a pen and paper and wrote down a few of the most important lines.

Sacrifice is the law of creation. Sacrifice means self-giving. All growth, all progress, all accomplishment is by self-giving. Self-giving is the secret of unending accomplishment.

Like all things, knowledge grows by giving. The more you give it to others, the more it grows.

True knowledge cannot be possessed. It can only be received with gratitude and passed on.

Like the air we breathe, knowledge belongs to all. No vessel can contain it without suffocating those who try to possess it.

Suddenly a sparkling thought entered Dan's mind like a breath of fresh air. He saw a way out of the dilemma. He glanced at the clock. It was 6:30 am. Reaching for his cell, he dialed Bill's number, but there was no answer. The next moment there was a knock at his door. He got up and opened it. Bill walked in. "I need to speak with you before we meet this morning," he said as Dan stepped aside to let him in. Still standing, Bill said, "I have been thinking about what happened over the past three months, the actions I have taken and my attitudes. Dan, I hate to admit it, but both of us have made a mistake in bringing me in here. I don't belong. Now I have placed the entire future of MAI in jeopardy. You do realize that Oppenauer will not stop here, don't you? Whatever we do now, he will keep scheming to make further inroads. He has already demonstrated that he is willing to break-up marriages, ruin companies and steal in order to do it. We do not know what more he may be capable of. MAI will never again be safe."

Dan asked Bill to sit down and offered him coffee, which Bill declined. "I have concluded that I no longer have a right to equity in this company. For you, Ray, Anya, Vinay and even for Kurt, MAI is not a company, it is a mission or a dream. I see that now."

Dan interrupted, "Bill, it is not your fault that Oppenauer has lent money to your father and is now using that money to pressurize you. We asked you to raise money for MAI and you did the best you could. You found us the money and we accepted the terms. There was no way you could have known his motives or intentions."

Bill shook his head in disagreement. "That's what I have been trying to tell myself. But it goes deeper than that. For you money is the means to realize a dream. For me, money was the end in itself, for which I was ready to sacrifice your dream. I did know what Rolf had in mind. Maybe I was not fully conscious, but I had enough reason to suspect him, and I chose to ignore all the hints that life presented. Last night I consulted AIS¹ regarding the decision to take funds from Oppenauer and it soon became obvious to me that I did it for all the wrong reasons. Even AIS¹ was intelligent enough to show me I made the wrong choice. You know and I know, Dan, that MAI has a greater mission, even if we try to convey to others that it is just a normal business trying to make a buck." Bill stood up abruptly. "I've gotta go now and catch Rana before she leaves the house for work." He turned to go out the door, but Dan placed a hand on his shoulder and restrained him.

"Wait a minute, Bill. There is something else we need to discuss. I was just trying to call you when you knocked at the door. I have an idea."

"Can't it wait, till after I speak with Rana," Bill asked.

Dan shook his head. "No, it concerns your talk with Rana. We still do not know all that Oppenauer has done, plans to do or is capable of doing. If we abruptly expose his plot, he may do something even more desperate. We need to slow him down, so that we have time to take steps to protect ourselves. It occurred to me this morning that there is a way we can do it. After explaining to Rana what we have found out, tell her not to worry about MAI because we have already taken steps to protect ourselves. Tell her that we have decided to release the source code for AIS⁷ to the public. Tell her that if Oppenauer wants MAI, he will discover he has paid a few billion dollars for a worthless shell and that we will simply move on and start

another company. Bill, it's important that Rana believes you when you say this, so that when she tells Henmann, he will believe her."

Bill replied, "But what if she does not tell him?"

"She will!" Dan replied. "When she discovers that nothing else she says to him has any impact on him, she will look for something that evokes a reaction. She is bright enough to understand that this will."

"But, at best we can fool Oppenhauer this way for a few days. He will monitor our activities and soon discover that we were bluffing."

"Who said I was bluffing?" Bill was stunned. He looked Dan in the eye and tried to see deep inside his mind probing for the truth. Dan just smiled.

After Bill left, Dan pulled down a volume of the *Archives* and opened to an article on money and came to a passage which he recalled reading the previous year:

Money is a universal force of life. It grows by movement, like the flow of water through a pipe. If you stop up one end, the water cannot flow. Possessiveness stops the flow and the ego is the source of possessiveness.

Money is an evolutionary power, but it is possessed by the ego, which opposes evolution.

Money is a means, not an end; an instrument, not an object to be possessed.

Those who value money or people with money can never accomplish more than the social average. They can never be pioneers of social evolution.

Later that morning, Bill walked into Dan's office to report on his meeting with Rana. He had called her mobile and asked her to come out to speak with him in the car while Ray stayed inside with the kids. At first she had completely rejected Bill's allegations against Henmann, but when confronted with all the evidence and Bill's own confession about how he had been tricked, she was forced to admit the possibility that it was true and broke down in tears. She promised Bill that whatever happened with Henmann, she would not do anything to endanger MAI. She said she was determined to find out the whole truth from Henmann and then decide on a course of action.

Two hours later Rana called Bill to say that what he had told her was true. When she confronted Henmann at the office and told him that she had relinquished all legal right to her MAI shares, he had simply turned around and walked away. Rana called out to him and told him that MAI had decided to publish the source code for AIS⁷ and offer it on open general license. She said Henmann stopped in his tracks, turned around and stared intently at her to see if she were serious. When he saw that she was, he smiled, shrugged his shoulders and continued on his way. Bill said Rana sounded very upset and remorseful when she spoke to him the second time. He could not tell whether her feelings arose from a sense of humiliation for having made a total fool of herself, or a sense of profound regret for the pain she had inflicted on others.

A few days later, Vinay reported that ten MAI employees had signed agreements to sell the options they held on four percent of total shares. Although the name of the party purchasing the shares was different in each case, the price offered was the same. Before even negotiating the sale, each employee was required to sign a confidentiality agreement not to disclose the offer, so none knew that other employees had also responded to the offer. The buyers had been able to acquire that four percent holding for under twenty million dollars. Vinay immediately sent an email to all employee shareholders requesting them not to enter into share negotiations without first contacting him or one of the other partners.

In the process of interacting with employees, Vinay also discovered that rumors were circulating within the company that AIS⁷ was going to be made freely available under an open general license. When he heard the report, he took steps to trace it back to its source, which proved more difficult than he had thought it would be. By the time he had interviewed four or five people, he found out that everyone in the company had heard it from someone and many had heard it three or four times. It was impossible to discover who was actually the first to disclose it. "Before the rumor is made public, don't you think we should inform our employees that it is a mistake?" Vinay asked.

Anya reached over and grabbed Vinay's hand, saying "I am not sure it is a mistake. I believe that is why we are meeting this morning, isn't it, Dan?"

Dan nodded. “That’s right. We have to decide whether or not to actually go OGL. If we deny the rumour, Oppenauer will hear about it before the day is over and will see it was merely a ploy. If we do not, employees will start getting restless, word will spread quickly and by tonight or tomorrow it will be public knowledge, at least among those who are concerned with what we are doing at MAI. It might even prompt other employees to offload their shares quickly.”

Levin was carefully studying Dan’s face and trying to hear what Dan was not saying. Ray who had been lost in himself and had not spoken more than ten words in the past twenty-four hours, was startled into alertness by Dan’s comment and turned his gaze around the room from one person to another trying to judge by their expressions whether Dan was really serious about the idea. It was an idea that he and Dan had debated about years ago, before AIS¹ was launched. Ray now recalled that he was the one who cavalierly argued on principle in favor of OGL. Dan had listened at the time, but never committed himself. Now when they had something which investors were willing to put up billions to back, Dan was raising this issue. Ray was unable to conceive of how that might impact on their company and the future of AIS.

As if in answer to Ray’s thoughts, Bill put that very question on the table. “Have you thought about the implications of OGL for the company and the development of AIS⁸, Dan? It sounds to me like a decision with enormous ramifications. And I assume that it’s irreversible. Once the code is out of the box, there is no way to put it back again.”

Levin spoke next. “I see the value of the idea as a strictly defensive maneuver to protect the company. It would certainly cool Oppenauer’s interest. He may even try to break our investment contract and ask for return of the first tranche. How would Choi respond? Suppose they both back out? That would not solve the funding problem for AIS⁸. And, of course, the most obvious point is that it could make everyone’s shares in MAI virtually worthless.”

“We need also to consider how such a move would impact on our future revenues,” Vinay said. “I doubt very much whether clients be willing to sign profit-sharing agreements when the software is freely available. Even if we were to release only older versions, it could still seriously erode our market.”

Dan sat patiently listening to all the comments. “Anya, we have not heard your views.”

Anya replied, “Basically I like the idea of OGL. I like the idea of giving the whole thing away so that the whole world can participate in the future evolution of AIS. But then again, I am a confirmed socialist at heart, remember? I basically don’t buy into this whole property thing. It sounds archaic to me. I like money well enough. I like to have all that I need when I need it, but beyond that it seems ludicrous to let money guide our decisions. Fortunately, we are not a public company beholden to shareholders. We are only accountable to ourselves. My main concern is moving on with the development of AIS⁸ and I do not see a way to do that without raising lots of money. Dan, everyone else has spoken. Now what about you?”

“I think we should immediately repudiate the rumor in the strongest possible terms,” Dan said. “We should tell our employees that it may have been circulated by someone who is trying to drive down the value of our shares so that employees will be happy to part with what they have at a fraction of its real value. We should also announce that we are moving aggressively ahead with development plans for AIS⁸ and that we have obtained commitments for massive investments to finance the new version.”

“Won’t that encourage Oppenauer to intensify his efforts at a take-over?” Vinay asked.

“I hope not,” Dan replied. “I hope it will confuse Oppenauer or, at least create, a doubt in his mind and make him hesitate, which is what it is intended to do. He has no way of knowing that we intentionally communicated the rumor to him through Rana. He has no way of knowing that we know what he is planning to do. He may quite logically conclude that we are denying it out of fear that he or Choi may back out of their investment agreement.”

“So your objective in starting the rumor was only to confuse him,” Bill said. “But if he is really confused by the rumor, he may really cancel the agreement or try to delay implementation. Then what will we do for AIS⁸?”

Dan nodded. “I hope he does just that, Bill. In fact, I am counting on it. I want Oppenauer to withdraw from the agreement on his own. If he does, then he will have to rely on your cooperation to prevent a lawsuit for breach of contract. Under those circumstances, he would be foolish to pressurize your father for return of the company loan. Therefore, it is essential that no one knows what our real intentions are.” Then turning toward Ray, he added, “Ray, I am afraid that means we have to ask something that may be very difficult for you, especially if Rana begins to regret her folly and seek reconciliation. It is essential that you do not tell her what we are really doing until we are safe from this situation. Then you can tell her

that she helped save us from a trap and that if it hadn't been for her, we may have lost MAI to Oppenhauer through another route." Ray smiled meekly and indicated his agreement.

"I'm curious, Dan," Anya said with a mischievous smile. "Why did you ask each of us what we thought about the idea of OGL if you were already convinced that doing it was impossible?"

Dan smiled back enigmatically. "It may be impossible at this moment when we need so much money for development of AIS⁸, but perhaps it may not be at some time in the future. I very much wanted to see how everyone responded to the idea of OGL and the reasons for it."

Four days later the partners met again to review developments. Bill reported that Oppenhauer had called him the previous day and said there was some difficulty in getting the second tranche of funds released on schedule. He asked for more time and paused to gauge Bill's response. When Bill hesitated, Oppenhauer informed him that he had been able to secure an extension on the loan to Bill's father and would be faxing a renewal agreement that very day. Oppenhauer then fished for news of any developments at MAI that he should know about. Bill remained non-committal, thanking Oppenhauer for his extra efforts on behalf of his family, and then asked when Oppenhauer thought the second tranche would be ready. Bill explained later that he wanted Oppenhauer to feel he was slightly nervous about something, but still very eager for the funds.

More surprisingly, Levin received a call from Eddie Choi asking whether there were any new developments at MAI. Levin did his best to assure him that they were proceeding on course, though he did acknowledge a possible delay in getting the additional funding for AIS⁸. Choi sounded relieved and satisfied.

Vinay commented. "So now we begin to understand just how much attention is focused on MAI. This company is like the lovely daughter of a very rich Indian family who in the innocence of youth is totally unaware of all the eyes that are upon her and her dowry."

"Yes," Levin added, "and concerned whether she may be disowned by the family and left dowerless to fend for herself!" Everyone, except Ray, laughed freely for the first time in many days.

97. Contradictions

The next morning they met again and Dan tabled another issue for discussion. “We have to start considering the implications in the event that Oppenauer backs out of his commitment. He will probably keep stalling for a while, which will provide us with an opportunity to cancel the agreement. And if he does come up with the money, we should do our best to avoid taking it. Either way, we are going to need an alternative funding strategy. I propose we revisit Vinay’s strategy paper on Mergers & Acquisitions, but view it from a slightly different perspective. So far we have been approaching firms that are in the process of contemplating M&As, competing head-on with the likes of Rothman & Lazurus and other investment bankers with extremely strong credentials and experience. Vinay was able to sign a few contracts, but as is often the case in this field those deals have not gone through, not yet at least. Now I’d like to propose another approach. Suppose that instead of approaching firms that have already decided on M&As based on their similar or complementary business models, we adopt a completely different strategy based on principles of life.”

Bill interjected, “But Dan, as I understand it, AIS⁷ does not incorporate life principles. That will come only in AIS⁸.”

“That’s right, Bill. But there is no reason why we cannot begin development of AIS⁸ by taking one or a few of the most central principles and applying them to real life business situations and using that experience to accelerate development of AIS⁸.”

Anya asked Dan whether he had any particular principles in mind. “Yes, I do, Anya. Traditional M&A strategy focuses on the principle of similarity. I propose we apply the law of contradictions.”

Bill could not suppress a smile followed by a short burst of laughter. “I’m sorry, Dan. I certainly do not mean to laugh at any idea you propose, but the idea just struck me as deeply ironic. The top investment banking firms in the world have negotiated nearly \$2.5 trillion in M&As this year based on the logic that similar businesses will benefit by merging their operations. Suddenly a small software firm with no track record in the field comes along proposing a completely different logic—contradictions.”

“It is certainly ironic, Bill. But according to *The Book* it makes perfect sense. If you examine human history, you find that the law of contradictions is one of the most fundamental of all principles governing creation. The great British historian, Arnold Toynbee, fashioned a theory based on it. He called it the principle of challenge and response. According to the principle of similarity, authoritarian regimes should be the most successful form of government, because their governments attempt to stamp out all dissent and dissimilarity of viewpoint. It seems simple and logical from a material point of view. A perfect example of social engineering. But in life it does not work. Life admits a different logic, the logic of contradictions. In practice we find it is those countries which tolerate and manage the greatest range of contradictory viewpoints through democratic processes that generate the greatest individual freedom and collective good. The same thing is true in economics. Logic supports the Soviet model of a perfectly planned economy that avoids the wastefulness of duplication and competitive destruction found in capitalism. But in practice, it is the system based on continuous confrontation between opposing forces that is responsible for the remarkable economic progress of the twentieth century. I am simply suggesting that we apply the same logic to identifying creative M&As. It can be done at the level of companies, industries and even at the level of countries.”

Vinay picked up the thread from Dan and explored it further. He cited the example of India and the USA. Two decades ago no two countries appeared to be greater contrasts than high tech America and agrarian India, which did not even have a reliable telephone system. Could anyone have imagined twenty years ago that these two countries would be forming a global strategic partnership in the high technology industry? Vinay recalled that India’s total software exports when he entered engineering college were only ten million dollars. Today they are around thirty billion dollars. Radical contradictions concealed unperceived potentials that have been transformed into creative complements. When Nixon went to China thirty years ago, who imagined that China would become America’s largest trading partner and that economic self-interest would bind these nations into peaceful relationships despite the persistent political disparities.

Vinay agreed that if AIS⁷ enabled them to identify hidden potentials of this type and magnitude, the opportunity could dwarf that associated with traditional M&As. Levin offered to work with Vinay to develop the idea, then shifted the discussion back to the larger issue. “Whatever happens with Oppenauer this week or this month, the threat posed by his money power will not disappear. If not now, then sometime later he can renew his play for MAI. Even if he backs out of the financial agreement, he will be followed by others. I have already indicated there may be more than one corporate group with eyes on MAI. I am sure no

one missed the implications of Eddie Choi's apparently off-hand question about Microsoft. If not now, then one day soon, others will wake up to the implications of what we are doing and become either extremely interested or extremely concerned. Either way, we have to be prepared. MAI is not the first company to face challenges of this type and there are many ways to combat the threat. But if the past four months is any indication, the challenge posed by the social forces arrayed against MAI may dwarf those faced by other companies. In addition to competition, MAI seems to be attracting challenges of a different sort. You had a small taste of what political pressure feels like from Thompson. There is no way to tell who or how many other countries may set their sights on MAI and AIS. You have now had a glimpse of what ruthless money power is capable of. There are a lot more people like Oppenauer out there who may be tempted to take a shot. Once MAI becomes the size of Microsoft, it can protect itself. The problem is at this nascent stage when the potential is becoming apparent, but the company lacks the wherewithal to protect itself. I wish that was all we had to worry about, but I am afraid there is more. From what I know of *The Book* and from the principles of life being incorporated in AIS⁸, I believe sooner or later you are going to attract the attention of the other warring powers that rule the world today."

98. The Cloister

The capacity to accomplish is infinitely multiplied by shifting from the outer to the inner and from there to the inner which includes the outer.

Messages XVIII

The high pitched intensity of the past few weeks gradually subsided to a more normal pace of life and work. Ray was fully occupied with the launching of the AIS⁸ research project. Vinay invested every spare moment exploring unorthodox M&A opportunities. Bill recruited dozens of experienced consultants to expand the consulting division. Anya began experimenting with various ways to convert life axioms into algorithms. Meanwhile Dan and Levin evolved a close working relationship delving into the relationship between life forces and accomplishment in *The Book, Messages* and *Archives*. By mid-December Dan was able to move upstairs to the new residential facility which was officially referred to as the Cloister, but which Anya spoke of as Dan's Ashram.

From the beginning, the idea of building the Cloister had been Anya's and she insisted on designing it and supervising its construction according to her own conception. She argued that if Dan was going to be living at MAI twenty-four hours a day to avoid the dangers of living alone, he must be provided a suitable environment for both work and relaxation. She came up with the idea of converting the still vacant fifth floor of their offices into a living space for Dan. The top floor had obviously been built with some special purpose in mind. It had an elliptical bubble type roofing structure with rounded corners that sat on top of the long rectangular building below and was surrounded by an open flat area of the roof on all four sides. Though smaller than the floors below, its one thousand square feet provided ample space. It had a spectacular 360 degree view that looked out on the Berkeley Hills on one side, San Francisco opposite, with the Golden Gate and Bay Bridges occasionally visible across the bay at either end. Apart from a bedroom and kitchen, she insisted on a study that was situated just above his regular office and a spacious living room.

It turned out to be the perfect place for Dan and Levin to meet undisturbed; and since Levin had not yet made any permanent living arrangements in the Bay Area, for several months he ended up spending most nights sleeping on the living room couch. Both of them grew to enjoy each other's company as they continuously discovered new threads of common interest. Since only the partners and Limpia had access to the Cloister, Dan had the freedom to keep the *Archives* and *Messages* within easy reach without any concern regarding security. Luis Gavoché had assured them that the tinted windows were impenetrable to light and impervious to intrusion by anything less than a high explosive. Anya also insisted on an exotic Persian décor, which Dan said was inspired by Edmond Dantes' secret treasure grotto on the Isle of Monte Cristo. Only the treasure stored in this room was *The Book, Messages and Archives*. Anya claimed the design was intended to create a rich, warm and colorful contrast to the stark utilitarian offices below where they spent their days. In spite of repeated jokes by the partners about her architectural prowess, the design proved so successful that the partners found themselves naturally gravitating there to refresh their energies.

When it became evident that they would have to do without Oppenauer's money, Dan decided to revisit the research methodology for AIS⁸ and see if they could find any way to abridge the time and cost to within the funds provided by Choi. "The more I think about it, Kurt, the more I am convinced that our initial approach is upside down. We have made the common error of the statistician who believes that knowledge can be discovered in the data. You might say we are trying to uncover the secret of life by data mining. That seems ironic considering that *The Book* and *Archives* have already provided us with hundreds of principles of life and accomplishment to start with. Our task is not to discover knowledge, but rather to integrate that knowledge with life in our own experience."

A breakthrough came as the result of an insignificant incident which pointed them to the right path. Dan and Levin were discussing a passage in *The Book* about the creative power of will. Dan suggested that Levin consult the *Archives* to see what it had to say on the subject. Searching the *Archives* was still a rather cumbersome procedure at that time because the articles had been collected and bound as they were discovered on the Internet, rather than organized subject-wise. Since Dan was unwilling to disclose the existence of the volumes, he was unable to have someone index the contents properly. Kurt had already discovered that searching the *Archives* could be a laborious task and had vowed to take up the indexing project himself at the first opportunity, but so far there did not seem to be many such opportunities at MAI. Till then he would just have to do things the hard way, so he went over to the bookcase and simply picked out one of the volumes at random and sat down with it on the living room couch.

Without paying much attention to what he was doing, he opened the volume in the middle of the book and glanced down at the page. Staring back up at him was the title of an article in bold font, **The**

Power of Decision. Kurt exclaimed so loudly that it distracted Dan from the passage he was reading in *The Book*. Looking up, he asked Kurt what he was exclaiming about and Kurt explained. Inadvertently, he had selected the very volume and page which contained the article he was looking for. On hearing him, Dan put down *The Book* and came over to the couch to listen to the passage as Kurt read it out. The article gave precisely the explanation that they were looking for. But one particular passage which Levin read provided them something even more valuable.

Accomplishment is by consciousness.

Accomplishment is the process of conscious creation.

Consciousness creates by Real-Idea.

Real-Idea is an intention that carries within itself the power for its realization.

A decision is the mental counterpart of a Real-Idea.

A decision is an act of mental will that carries within itself the power for its accomplishment.

A decision has the capacity to evoke life response.

“That is what happened, just now, Dan,” Levin explained. “I took a decision and evoked a life response.” This was not the first time either of them had experienced an incident of this type. Kurt’s discovery of *The Book* in Berlin and Dan’s discovery of the same *The Book* at Moe’s were far more significant events of a similar nature. But this time they decided to examine the event with the kind of minute attention that Sherlock Holmes expended on studying the inner rim of a hat he found on the road for a clue to the owner’s identity. “When you suggested I consult the *Archives*,” Levin explained, “my first thought was that it might take hours to find the passage we were looking for. But then I decided to brush that thought aside and attack the problem, because I believed it might provide us with an important clue. I *decided* to find the article and my decision led me instantly to the place. That is what the passage means when it says, ‘A decision has the capacity to evoke a life response’. This *is* a life response!”

Dan vaguely recalled Anya relating a similar incident a few years ago when she was looking for information on some technical issue. Dan and Levin spent the rest of the day preparing a list of all the similar types of incidents that they could recall from their own lives. Levin could also recall several incidents of this kind from the lives of family members and colleagues at Mossad as well as others from Hebrew literature, but Dan suggested they concentrate on their own experiences because it was only here that could precisely correlate the objective action of life outside with the subjective action taking place within themselves. In the case of other people, it required a profound insight into human nature to obtain precise subjective knowledge of what another person was thinking or feeling.

After analyzing some fifty different events of this kind, a pattern began to emerge. They found that they were able to fairly accurately predict from a knowledge of the subjective conditions whether or not the external action would achieve the desired results and in a few cases they were even able to anticipate a positive response from life before any external action was actually taken.

It was during this investigation that the second striking life response confirmed that they were on to something important. Dan casually mentioned to Levin how deeply appreciative he was of Anya’s effort to design such a pleasant living environment for him at MAI. Levin responded half-jokingly that if Dan’s words were really heart-felt, Anya should walk in the room the next second so he could thank her personally. Dan laughed at the notion of a test, but he insisted that he really did feel deeply grateful to her for overriding his objections to the Cloister. Before he had finished the sentence, the living room door opened and Anya walked in. She greeted them with a sweet smile. She found them both sitting speechless with strange expressions on their faces. Frowning slightly, she asked whether she had come at a time when they did not want to be interrupted. Dan assured her that quite to the contrary there was no one in the world they would have rather had walk in the room at that moment. They all laughed. Then Dan remarked, “You may not know it, Anya, but you have just corroborated a profound truth of life. You arrived just at the instant when I was telling Kurt how deeply grateful I feel to you for creating the Cloister.”

Almost falling into the pile of pillows in the corner which Dan affectionately referred to as Haydee’s chair, Anya’s face flushed with a rosy hue and the corners of her mouth turned up in childlike delight. In spite of the crises they had confronted, the last few weeks had been perhaps the happiest of her life. She felt for the first time that she was doing what she was born to do and living the way she should live. The quest to render truths of life into practically usable formulas for humanity was fulfillment of her dream. Even if they did not succeed, it was an effort worth making. The full intensity of her joy became apparent to

her in a flash and a quiet laughter welled up and softly overflowed in her breath. Words heard long ago reverberated in her mind. Accomplishment is enjoyment. But she was too full for words.

Turning to Levin, Dan said in a more serious vein, “Do you realize, Kurt, that you predicted this event? It is one thing for life responses to occur. It is quite another to be able to predict them. Then its only one further step to being able to make them happen at will. And if you can evoke life responses at will, then you can create the circumstances and events needed to accomplish anything.” Anya listened to Dan’s words, but was too absorbed in the intensity of her feelings to discern their meaning.

Then looking over at Anya, he said, “Something you said to Mi-ja during our first meeting with Choi keeps coming back to mind. It came with a feeling that I was missing something and veering off track. Just now when you entered, I got an inkling of what that feeling may mean. You were trying to explain to Mi-ja in language she could understand the differences between conventional approaches to AI and what we were attempting here. Conventional wisdom has been that AI systems should be capable of functioning independently of human beings. AIS is an attempt to create a system that is fully integrated with human consciousness, magnifying the power of human choice. That was the most precise statement of our purpose that I had ever heard. But somehow it left me feeling uncomfortable. Only now I think I understand why. I now realize that the research methodology we contemplate for AIS⁸ is not fully in line with that basic philosophical position. We are still trying to make AIS a center of consciousness rather than to leverage it as an instrument to augment the consciousness of the user, and we have adopted a methodology that seeks to accomplish that without ourselves having fully acquired that higher consciousness ourselves. From both perspectives, I believe our logic is flawed.”

Anya and Levin were listening intently, but neither was sure that they grasped what Dan was getting at. He saw the unsatisfied expressions on their faces and searched for a clearer way to convey his meaning. “We may load AIS⁸ with an infinite amount of data and an infinite number of life principles that it is capable of accessing at infinite speed, but that will not make the program conscious, no matter how good an imitation it may put up under limited circumstances and no matter how romantic the notions of modern science about conscious machines. Machines are material and if we are to impart consciousness to the machine, that consciousness has to come from the human being. We cannot give to the machine that which we do not ourselves possess. But based on our present conceptual framework, that is what we are now trying to do. That is why the task appears so difficult and requires such an enormous effort and expenditure.

“Suppose we shift our perspective ever so slightly. Instead of asking how we can make the machine more conscious, we ask how we can program the machine to help us become more conscious. Then it is no longer necessary to transfer to the computer all the capabilities of the human mind, heart and soul. We are no longer trying to reproduce human consciousness, only to supplement it. Rather, we are trying to complement it. Suppose I am formulating a sentence in my mind and suddenly find myself groping for the appropriate word to express a concept. What do I do? I access the thesaurus on my computer for assistance and it presents me with dozens of options. I do not ask the computer to formulate a better expression of my thought on my behalf. It is not necessary for the computer to understand my thought or even know what it is. It is enough it can act as a complement to my mind, providing the best word to complete my thought. AIS⁸ should work the same way. The only difference is that rather than supplying a missing piece of data which I have forgotten, it should complement my view of my life situation in such a manner as to help me fill in the missing pieces needed for accomplishment.

“Remember, Anya, when you first discovered the article on Complete Act? The underlying premise of that article was that accomplishment is the result of completion at some level. For an act to achieve a result, it must meet all the minimum requirements. If a single element is missing—one decision, one positive attitude, one skill—it remains incomplete. If any of the requirements are supplied in greater than minimum measure, the results of the act are magnified. The accomplishment is greater. If all the requirements are supplied to the saturation point, then the act not only fulfills the intention, but also evokes a positive response from life. It harnesses the forces of life to achieve results many times greater than anticipated. With the right decision, attitude and action, a little Dutch boy can plug a dyke with one finger and save a whole country from flooding as in the legend of Hans Brinker. A single man can remove one brick and bring down the wall between East and West as Gorbachev did. The ultimate aim of AIS⁸ is to bring every human action to the saturation point where it evokes the forces of life for unending success and unlimited expansion.”

“I agree with your description, Dan, but I still am not sure I understand how that should affect our research methodology,” Anya replied.

“I am saying that we are still looking for needles in haystacks, when all the needles we need are already in our possession. Instead of designing algorithms that arrive at the right answers, we should be designing algorithms that enable human beings to arrive at the right answers, which make us more

conscious. It's a parallel to the difference between Wikipedia and traditional encyclopedias. The conventional approach is to enlist a few thousand experts to gather all knowledge at a single point. Wikipedia's approach is to draw upon the knowledge of the entire world and make that knowledge available to everyone. In six years it has become fifty times larger than Britannica. Why? Because it plugs into and harnesses the knowledge of the world rather than trying to reproduce it as an independent center of consciousness. The computer is only a focal point or mirror for the gathering and organization of the world's knowledge. It does not have to create or recreate anything.

"AIS⁸ should do the same thing for accomplishment. The only difference is that in our case the individual consciousness represents the universal, because in truth each individual is an infinite field of consciousness which no machine can ever match. Instead of trying to transfer human consciousness to the computer, we should leverage AIS⁸ as a focal point for organizing the consciousness of the individual to make it more effective. AIS⁸ should enable each user to plug into the knowledge of life and relate that to the universe of conscious awareness within himself."

Anya was puzzled. She thought she understood what Dan was saying about a change in strategy, but where did life fit into this scheme? Why was he proposing the change just now? "Because the real difference between AIS⁷ and AIS⁸ is that until now we had been trying to enhance the effectiveness of the individual actor to make better decisions. Now we are trying to invoke the power of life to support the individual for higher accomplishment. What any individual can do on their own is very limited. But any individual who can evoke life forces to support his action can accomplish anything. In fact, this happens at all levels and is implicit even in AIS¹. But in AIS⁸ it becomes primary. That means we have to shift the emphasis from outside to inside, from building a more powerful expert system to building a system that makes the human being more powerful. All conventional expert systems focus exclusively on the objective element of action. AIS¹ combined subjective and objective and gives them equal emphasis. In AIS⁸ the subjective element becomes primary or rather we focus on the inner subjective conditions as the means to evoke a response from the outer life."

"That explains what happened with Choi," Levin added. "Our discussions regarding life reached a certain level of clarity. We arrived at a clear decision to proceed with research on AIS⁸. We adopted a methodology and committed ourselves to implement it. We were determined to proceed, even though the financial requirements were enormous and we had absolutely no idea how to raise funds of that magnitude. The clarity, conviction, decision, commitment and determination set in motion forces of life and moved money. Ben Choi called me out of the blue and next thing we knew Eddie had agreed to give us two billion dollars."

Dan recalled to himself the passage he had read a few days earlier in the *Archives*. "Money is universal force of life." The right inner action had invoked the external forces of life to bring money. All they had to do is master the intricacies of that formula and incorporate it in AIS⁸. They had already seen that AIS could generate money by making any commercial operation far more efficient, energetic and expansive. Now they had demonstrated that it had the capacity to attract huge amounts of money and it was not clear what the limits to that amount were, or whether there were any limits.

"I am still not clear," Anya said, "regarding the implications for our research methodology. Are you suggesting we abandon the program we have just launched with the universities and all gather here to experiment on our own consciousness?"

Dan replied that he did not want to abandon the research program. There is still too much they did not understand. His idea was to supplement or complement that external effort with an experimental program at MAI on themselves to more fully explore how the knowledge of *The Book* could be practically applied for accomplishment. "I have a feeling that we can accomplish far more in far less time and with far less expense than we originally contemplated. Choi's money may be all that we need. Rana's leak to Henmann about MAI Foundation may have saved us from giving away a large chunk of the company for money we do not even require."

As Dan mentioned began the last sentence, Ray opened the door and walked in just in time to hear the reference to his wife. His face looked tired and weary, his shoulders were drooping and his feet dragged across the room. But Rana's name ignited a spark in his eyes as he looked inquiringly at Dan for an explanation. Dan reported the gist of their discussion and conclusions. He repeated the last sentence in the hope that it would help Ray discover some greater good behind the pain he had been suffering and the evil intentions of those who had inflicted it on him. Ray sat down on some pillows in the corner next to Anya, listened intently without responding, then closed his eyes and dozed off. The others maintained a respectful silence for some time and then resumed their discussion in a quieter tone of voice.

Levin picked up an earlier thread of thought. “If AIS⁸ involves a shift in relative emphasis from the computer to the human consciousness, it would correspond with what we see happening in other fields as well. For the general trend in human development is in the same direction. The more we progress, the more subtle and refined our instruments become. We have already moved from the gross physicality of manual labor and steam-driven engines to the subtle physical power of electricity. We have already moved from the transmission of information through a physical medium of wires to transmission by invisible waves without any physical medium other than thin air. Life response belongs to an even more subtle mode of action in which even the instrumentation of a radio or TV or computer is eliminated and human consciousness acts directly on the outer world by altering the psychological conditions within the human being. Our challenge is to discover what those conditions are and how to alter them in order to bring about the external results that we seek. *The Book* has given us the principles. We need only evolve the methods for interpreting and applying them in specific life situations.”

Levin paused, then another thought suddenly occurred to him. “We have explained to ourselves how we were able to attract Choi’s money by a development of our psychological condition. How then do we explain the fact that we also attracted Oppenauer’s money, money that has the potential of undermining our entire effort?”

Anya listened intently. Ray opened his eyes again at the mention of Oppenauer and followed the conversation without stirring from his semi-reclining position on the pillows. Dan was surprised to note that Ray’s face looked somewhat brighter and more refreshed after that brief respite. Everyone pondered Levin’s question, but no one seemed to have an immediate response. Five minutes later, Levin ventured to answer his own question. “Maybe it reflects our attitude to money. If we consider that Choi’s money came in response to some corresponding attitude and decision in us, then the same must be true of Oppenauer’s also. The only difference is that we view Choi’s money coming as something desirable and now understand Oppenauer’s as undesirable, though at first we welcomed it with open arms.”

Dan pulled out a small piece of paper he was carrying in his shirt pocket which contained lines from the *Archives* that he had read and noted down the morning after they unearthed Oppenauer’s plot. He read them out:

Possessiveness stops the flow and the ego is the course of possessiveness.

Money is an evolutionary power, but it is possessed by the ego, which opposes evolution.

Money is a means, not an end; an instrument, not an object to be possessed.

Those who value money or people with money can never accomplish more than the social average. They can never be pioneers of social evolution.

“Choi has the expansive attitude of an entrepreneur who wants to create and is willing to risk even what he has, to do it. He is willing to give in order to qualify himself to receive something greater from life in future. Oppenauer, on the other hand, represents an opposite tendency. He wants to take and possess what others have created. His giving is only a pretense and means of taking. He is motivated by the egoistic urge to dominate. We have attracted both people. That indicates that both elements must be present in our own consciousness. Our aspiration to create AIS⁸ and our willingness to risk everything in order to do it attracted Choi. That qualifies us to become pioneers of something new. But the other side is also represented and that is what brought the danger.

“Early in the morning of December 4, as I was reading this passage, Bill dropped in to talk. He told me that he had come to the very same conclusion. He saw that it was his attitude which had endangered MAI. I told him that it was not his fault his father owed money to Oppenauer and maneuvered Bill into a vulnerable position, but Bill saw the truth and insisted on it. He admitted that the lure of fabulous profits had prompted him to invest all his savings in MAI and it was the social prestige of being associated with Oppenauer and his partners that had made him overlook obvious clues to their real intentions. Bill was especially struck by Kurt’s refusal to accept our offer of equity. It showed him the difference between the two of them. I did not tell Bill that I agreed with him, but I believe what he says is true.” Levin looked down. Anya’s motionless eyes registered silent agreement.

There was a knock at the door and Vinay entered. He looked around and was surprised to see the others sitting around. “I was wondering where everyone had gone,” he said with a broad smile. “While you guys have been lounging around I have been working myself to exhaustion. The least you could have done was to invite me to the pyjama party.” Anya patted the pillow to her right, inviting Vinay to occupy it. Seeing the concentrated expression on everyone’s face, he quietly sat down. Anya leaned over and whispered an explanation to him.

Dan continued. "I do not mean to blame Bill in any way. After all, it was I who first proposed bringing him on board and he has already made a real contribution. And I have no illusions that my own motives are perfectly pure, or that no one has a right to aspire for material gains. But I think life is offering us an important lesson. It is our own attitude that makes us vulnerable. Valuing money might not matter much if our objectives were only to succeed within the present social framework or to rise to the top of it, the way companies like Microsoft have done. Valuing money and aggressively pursuing it the way Choi does might help us accomplish much more. But if our objective is really to have a revolutionary impact, then we need to understand that the established social forces which control the present setup will either try to stop us or try to possess us and that if we retain the same motives ourselves, they will win because they are much stronger than we are. We have already seen what Thompson and Oppenauer have tried to do. And as Kurt hinted earlier, there are other social forces that are equally committed to the status quo."

Surprisingly, Ray sat up and started speaking next. "I think that analysis is correct, Dan. It helps me put things in perspective. Because when I examine my own motives, I see I have been divided down the middle. On one side I would give away everything to be part of the effort. It's what I always dreamed about. On the other, there is a small voice constantly whispering in my head—I recognize it now as my mother's—reminding me of my responsibilities and duties to my family, prodding me to be sensible and level-headed. Every night when I come home from work and meet Rana, I imagine that I see the very same reprimand in her glance. I have blamed her for holding me back. I have projected my own conventional motives on her, rather than seeing they really come from within myself. So how can I blame her for seeking relationship elsewhere? At least now I see the truth, so I can do something to change." Ray bent his head down in embarrassment and struggled to suppress surging emotions. Then he raised his eyes and continued. "Remember Dan, I who brought in Bill, so if anyone is responsible for his actions, it is me."

Dan responded and, though he spoke softly, his voice could not disguise the rising emotion. "Sure, Ray. And Bennie Choi was your college roommate. If it hadn't been for you, we would never have accepted the Korean Project, Kurt would not be here now, Eddie Choi would have never come all this way to offer us four billion dollars. And if you really want to know who is responsible, it is Anya. If she had not spoken at Fort Lauderdale, probably none of us would have ever met. This discussion is not about assigning blame to anyone for anything. It is about acquiring knowledge and understanding how life works so that we can accomplish more and avoid these pitfalls in future. Personally, I do not regret Bill to join us or signing the agreement with Oppenauer, though we may have done things differently then if we had known what we know now. But we did not know. We needed those experiences to acquire that knowledge and that knowledge is invaluable. Now that we have it, we need not repeat the same types of experiences in future. That is the value of this discussion."

Dan and Ray looked at each other. The muscles around Ray's eyes relaxed and an expression of relief emerged on his face, followed by a faint smile on the edge of his mouth. Anya leaned over and kissed him on the cheek. "Sitting here now," Dan said, "I have a real feeling of completeness for the first time. I have the sense that everything we need to accomplish is in place. For the first time I feel certain what we are attempting is not mere wishful thinking, but something we can and will actually accomplish."

99. Mathematics of Life

*All nature works with a constant principle of mathematical architecture.
Design, quantity and number form the basis for the manifestation of quality and
property.*

The Book

Mathematics is the language of the Gods.

*Mathematics can represent any fact of life or truth of philosophy. It represents
the Absolute by Infinity.*

*All systems of forces can be computerized. Our entire life consists of forces
which can be reduced to mathematics and computerized.*

Life response is a mathematical formula for what one aspires to.

Messages XVIII

The group spent the last ten days of December in the Cloister exploring the principles of life in the context of their work and personal lives, and examining alternative strategies for incorporating the insights they derived into AIS⁸. The atmosphere modulated between extremes of quiet concentrated intensity and mirthful hilarity, as they struggled to decode the meaning of each axiom or suddenly caught a humorous reflection of its action in the mirror of their lives. There was much introspection, but the feeling of pain and regret that had briefly surfaced during the first meeting never reappeared. It was as though the past had been cleansed by the light of sincerity and they had been freed of a burden to move on.

The first batch of research findings began to trickle in before Christmas and proved to be useful raw material for their discussions, though it never matched in value the insights they derived from analysis of their own experiences. They saw the fallacy of relying on academic institutions to acquire knowledge of life. As Ray pointed out, Western academic training was designed to abstract mental knowledge from life, to divide life into innumerable compartments and dissect each of them separately to discover their secrets. Whereas, the knowledge required for accomplishment, the knowledge to be incorporated in AIS⁸, could only emerge by reintegrating mind and life and recreating the unity of the whole.

On the day before Christmas, Oppenauer called Bill again and confirmed his readiness to transfer the second tranche on January 10. He must have concluded that MAI's strong denial of the rumors regarding OGL was genuine. Bill was sorely tempted to tell him the funds were not needed, but Dan and Levin insisted that he do nothing that might alert Oppenauer regarding their suspicions.

The same day Vinay also received word that employees were once again being contacted to sell their share options. They knew they needed to do something immediately to halt the sale of options. After much debate, they decided that the only possibility was to offer their employees a higher price than Oppenauer was offering and finance the buy-back by diverting the first tranche of funds received from Choi for this purpose. Dan sent an email to those holding shares and options explaining that a European financier was trying to obtain controlling interest in MAI by acquiring employee share options. Management expected the value of MAI shares to keep appreciating and advised employees to retain their shares. However, for those intent on selling, the company was willing to buy back all available options at a price double of that which Oppenauer had been quoting. Within a few days, the company purchased back four percent of the shares at a cost of forty million dollars.

These developments revived debate on what they could do to protect themselves without ending up in a long and costly legal battle against very well financed and clever opponents. By coincidence, during the intervening period of quiescence, a consensus had been emerging that a radical change in approach would be needed to make AIS⁸ successful. It was Levin who first clearly formulated the change. He showed that the idea of creating a stand-alone software system that would operate independently on different computers was a relic of old thinking. It would not be possible either to gather or effectively process the complex data of life knowledge in that manner. They needed to make a paradigm shift. Instead of trying to create a perfect system and market it to the world, they needed to create an engine of artificial intelligence armed with the laws of life and make it accessible to the world so that those who used it would contribute to its growth, just as the users of Google augmented the knowledge of the search engine every time they accessed its database and selected among the range of links it provided.

The change they contemplated was akin to the shift from the mainframe to the personal computer or from the isolated network of an organization to the globally distributed network known as the Internet. AIS⁸ should be an open system accessible to everyone as an instrument for higher accomplishment. The decisions, problems, issues, tasks, projects and activities submitted for analysis would enhance the consciousness and

hence the power of accomplishment of its users and the results obtained by them would provide invaluable experience for the conscious evolution of AIS⁸ itself. AIS⁸ and its users would become co-creators and companions in conscious evolution.

Oppenauer's renewed attack provided an incentive for them to announce and implement the new strategy much more quickly than they had originally planned. On January 2, Bill informed Oppenauer by telephone of their change in product strategy without in any way suggesting that MAI did not want Oppenauer's money. Bill told him that as a family friend, he felt it was his responsibility to inform Oppenauer in advance of the decision that had been taken. When Oppenauer expressed concern about the possible impact on future revenues and share value, Bill told him that it was too early to say for sure and that the other partners had taken the decision without even consulting his views. Frustrated and angry, Oppenauer told Bill he might be forced to suspend the transfer of funds and, if necessary, take other measures that might be far from pleasant for everyone.

The new strategy was announced to all MAI employees the same day and implementation began during the second week of January 2007. Meanwhile, the remainder of Choi's first installment of funds was redirected from an expanded academic research program towards the repurchase of employee shares and development of the new web-based engine for AIS⁸.

The new design was to be radically simpler, more elegant, easier to develop and implement than earlier versions had been. Much of it could be fashioned from the components of earlier versions of AIS converted for web-based operation. The real challenge was the development of algorithms for the life axioms, for which there was no precedent in computational history. For several days heated debates had flared among the partners as to whether life principles could ever be reduced to mathematical equations. Finally the issue had been resolved by an unequivocal statement which Anya discovered in *The Book*.

The five spent long hours scouring the pages of the *Archives* for other relevant passages. In the process they developed an index of the *Archives* that later proved of inestimable value. There they came across detailed explanations for the rendering of life forces and events into mathematical terms. Anya and Levin used these passages as the basis for locating fresh materials on the Internet. Each search provided new clues to the puzzle of decoding the mathematical precision of life into insights intelligible to human consciousness and encoding human perception in the language of mathematics. As before, the new pages appeared only briefly and then vanished again without a trace.

100. The Vital Plane

Life is Force and Force is Power and Power is Will and Will is the working of the Master Consciousness.

The Book

Life is a universal field of subtle forces in equilibrium.

The energy of Life is an expression of subconscious will.

Archives

In spite of significant progress on many fronts, the task of rendering the life axioms into algorithms proved to be extremely difficult. Each time Anya thought she was close to a successful formula, she discovered another defect in the logic or generated test results that resembled the common sense of a three year old. Exhausted and frustrated by repeated failures, she gravitated to the Cloister to replenish her energies and look for fresh inspiration and found Dan, Levin, Ray and Vinay immersed in philosophical speculations. "I hate to break up this gathering of distinguished philosophers," she said playfully, "but while you are meditating on the ultimate nature of reality, this lowly earthling is struggling to translate philosophy into practice and I could sure use some help. I am beginning to question the very notion that laws of life can be reduced to mathematical equations."

Assuming a sage-like tone and blissful expression, Vinay welcomed her to join their group contemplation and cast off all her worldly cares. Anya found herself laughing and noticed that she already felt much better than when she walked in the room just moments before. Resuming his natural voice but in a more serious vein, Vinay said, "As a matter of fact, while you have been slaving away in the physical galleys below working on our behalf, we have been slaving away in the mental galleys up here thinking on your behalf or, at least, trying to."

Vinay then summarized the discussion that had been occupying them for the previous three hours. "In point of fact, we have been debating theoretically the very question that you are grappling with practically. The whole problem boils down to the same question we have been discussing for months: What is life? If life is merely a property of cells and larger biological systems which exhibit the capacity for response to stimuli, homeostatic regulation, reproduction and the like, then reducing its functioning to mathematical formulas might be relatively easy. The problem is that if life really consists solely of chemical and electrical energy channeled through these biological structures, then there are no such things as laws of life in the sense that we understand them, and we are all wasting our time.

"The mistake of modern science is to regard life exclusively in material terms and try to discern its basic building blocks. As the physicist has discovered that atoms are the basic building blocks of material objects, biologists have identified cells as they basic building blocks of life. But according to *The Book*, life is not a plane of forms like matter. It is a plane of forces in movement which generate results, and the basic building block of life is the individual act. Matter is a plane of forms. As atoms combine to form molecules and molecules combine and organize themselves to form larger, more complex material objects, so individual acts combine to form chains of action which organize themselves into more complex patterns. To understand life, we have to stop thinking about things and concentrate on thinking about forces that generate results. I think Indians have an advantage here because we have been accustomed to thinking of life in these terms for millennia. That is what the law of karma is all about.

"Our aim in developing AIS⁸ is to make any action in the plane of life more effective so that it can accomplish greater results. Compare this idea of life with the science of management. Management is not about objects. It is about actions intended to accomplish results. Those actions may involve material objects, people, money or ideas, but the actual process of management focuses on action. The principles of good management are those that help us accomplish more in a given situation. Management tells us how to better organize and utilize the mental, emotional and physical energy of human beings as well as the material, technological and other mental resources at our disposal to achieve greater results.

"*The Book* describes life as a field of energy and interacting forces. If that is so, then a mathematical rendering of that field and those forces should be possible, in the same way that we can represent electro-magnetic and gravitational fields mathematically. Every force has an energy and a direction. Many forces with varying energy and direction interact, reinforce and annihilate one another to generate a resultant field with a direction and intensity, like the gravitational force generated by the sun, other planets and nearby solar systems on the orbital motion of the Earth. The question we have been debating this morning is the nature of the force or forces which we refer to as life."

Levin suggested a way to conceptualize what *The Book* was saying by comparing life with the known forces of physical nature. “Think of life as something similar to an electromagnetic field, which is a physical force field produced by the movement of electrically charged particles that affects the behavior of charged objects in the vicinity of the field. Life is also a force field, but the energy of life is subtle rather than material. It belongs to the vital plane rather than the material plane. Electromagnetic energy governs the movement of physical objects. Vital or life or psychological energy governs the movements of living beings. As there are frequencies of electromagnetic radiation which human beings cannot perceive, such as ultraviolet and infrared light, X-rays and radio waves, but which nonetheless exist and can act on material objects, life energy consists of energy frequencies that are not perceptible to the physical senses, but can be directly perceived psychologically. We perceive another person’s anger, love or joy not only through their behavior but directly through our feelings and emotions.”

“I thought the idea of vital force had been rejected by biologists long ago,” Ray interjected.

“No doubt it has,” Levin replied. “The whole drift of modern science is to reject everything except the physical and explain everything as an expression of the physical. Taken to its logical conclusion, love and joy are only the reaction of an excess of hormones on body chemistry, and the works of Shakespeare, Plato and Newton are nothing but spasms of electrical energy passing through the brain and nervous system. I like to believe that we are approaching the end of an intellectual Dark Ages which was a natural reaction to the religious Dark Ages of the medieval period. Only today the reigning superstition is propagated by science rather than by the Church. I find it difficult to believe in a world view that accepts the reality of my physical body, but denies the reality of my mind and heart and soul, other than as accidents of matter.”

“I still do not clearly perceive the distinction you are making between physical force and vital force,” Ray said. “Are you saying the life force is simply a more rarefied form of physical energy like the zero point energy physicists are now talking about?”

“According to *The Book*,” Dan interjected, “life force is not only more rarefied. It is also more conscious. We are unable to perceive the action of the physical forces in our bodies, except when they activate our sensory receptors. We do not feel the electrical impulses passing through our nerves. But we can feel the psychological energies that arise in us and pass through us. We know when we are happy, sad, angry or enchanted. The forces of life that act in us work primarily at the subconscious level, but they do arise to consciousness. Mental energy is still more conscious than the vital energy and, therefore, much more easily accessible to observation and control.”

Anya tried to steer the conversation back to her immediate problem. “I still don’t understand what this has to do with converting life axioms into algorithms.”

Levin replied, “Think of life forces as a direct parallel to the forces acting in electro-magnetism. They have energy and a direction. The energy of a life force is generated by the psychological intensity of directed vital or emotional energy, as in the intensity of desire, ambition, affection, fear, excitement, depression, etc. Each of these forces can also have a well-defined direction. Desire, ambition and affection are directed toward some object or goal. Fear and repulsion are directed away from an object or goal. Excitement is an elevated state of energy and depression is a lowered state of energy which may be either diffuse or focused on an object. If we know the intensity and the direction of each force that is active in a given situation, we should be able to plot the resultant field and calculate the result.”

“It’s a little more complicated than that,” Dan pointed out. “We have to take into account the impact of society as well as the individual. To simplify, you can think of society as a force field consisting of the sum total of all the individual psychological forces generated by the individuals within it. Each of these individual forces generates an influence on the wider field of society, just as each planet in our solar system contributes to the overall gravitational field influencing the earth’s orbit. Obviously larger and closer heavenly bodies exercise a greater influence than smaller, more distant ones. In gravitational fields, the intensity of the force is proportionate to the mass of the objects, and the strength of its influence is related to its physical distance between them. In life fields, the intensity of the force is proportionate to its psychological intensity. When we are very angry or very much in love, the force is stronger than when we are only mildly interested or indifferent. In life, distance is not physical. It is psychological. When we feel closely related to a person, positively or negatively, the action of our feelings on them is much stronger than when we feel only a distant psychological connection. I am closely related to my bitterest enemy, if I constantly think about that person and wish him ill. I may be only distantly related to a colleague I see and work with every day, but toward whom I have no particular feelings. Life forces can act over any physical distance instantaneously. Their reach depends only on psychological distance.”

Still unsatisfied, Anya said. “Are you saying that the forces of life active in any situation depend on the psychological attitudes of each of the individuals who are powerfully related to the situation, as well as on the general force field produced by attitudes in the society-at-large? If so, how can we possibly determine what all those attitudes are? How can we ever measure the intensity and direction of each of the individual forces needed to plot the overall force field of life?”

“We cannot measure it physically,” Dan replied. “But we can and do measure it psychologically and socially all the time. If suddenly someone proposes that we all take the rest of the day off to go to the beach, you can perceive your own emotional response to the proposal directly. But can’t you also anticipate what our response will be? You can have a pretty good idea, because you already know what our general attitudes are and you are already sensing psychologically at every moment the prevailing direction and intensity of the attitudes within our small group. You may know that if our sense of frustration or exhaustion gets much higher than it is now, that we may all welcome the suggestion and readily accept. Whereas, if the group gets the feeling that we are close to a breakthrough on this perplexing issue, there will be a poor response to your proposal. You also know that our chances of making a breakthrough this afternoon depend directly on the intensity with which we all aspire for an answer and concentrate on arriving at a solution. You probably also have a fair idea of how our employees at MAI will respond if they hear that the partners have taken the rest of the day off to go to the beach. So in practice, you have a lot more information about the current field of life forces influencing this discussing than you may have imagined.”

In the evening, they spent several hours debating a passage in the *Archives* regarding the principles governing the interaction of life forces and their resultant effect.

*Life acts at every moment to preserve and restore equilibrium.
Where the force for change is weak, life overcomes it and restores the equilibrium at the present level. Where an evolutionary force for change has sufficient intensity, it disrupts the equilibrium at the present level and life rises to restore it at a higher level.*

“These lines help explain what has recently happened at MAI,” Levin said. “As I understand it, MAI really began to develop after the creation of AIS³. Until then there was little response from life. At that point, the power of the software began to attract positive responses such as the one from Lempe. The development of AIS⁷ was more powerful and it disturbed the existing social equilibrium. Its development was noted by Israel, Iran, the US government, Choi, Oppenhauer, the Vatican, Ireland, Christian fundamentalists and, perhaps, others. Some of them wanted to prevent AIS⁷ from disturbing the existing balance of social forces and some wanted to personally benefit by controlling its further development. By going to the UN and the media, you were able to forestall Thompson’s effort to suppress the progressive movement. You leveraged Choi’s interest to strengthen your foundations for further growth and avoided Oppenhauer’s plot. It remains to be seen how these and other social forces will respond to AIS⁸.”

As the evening progressed, the discussion gradually shifted from theory to practice. The group took up a specific task—the creation of AIS⁸. They started by mapping the psychological and social forces impinging on the project, starting with their own personal opinions and attitudes, the attitudes of the rest of the group, other MAI employees and contractors, and influences outside the company. They then tried plotting the resultant impact of these various forces and modeling their interactions based on ten life principles. To their surprise, they found that by the end of the evening they had arrived at a common consensus as to what needed to be done to successfully create AIS⁸. Many doubts were raised that could not be immediately answered, but greater clarity had emerged about the approach.

As the night wore on, Anya sensed a deep, soothing peaceful feeling that seemed to pervade the room. Listening to the conversation going on around her, she found her own mind slowing almost to the point of stillness. There was no impulse to think, no need. She heard and understood everything said with an unusual clarity. Her mind was wide awake, yet filled by a silence that was almost audible, like the faint tinkling of sleigh bells in the distance. She left the meeting rested, energized and with a sense of exhilaration. She could hardly wait to resume her work on the algorithms the following morning.

101. The Attack

What Oppenhauer meant by ‘other measures’ became apparent a few days later. On Wednesday, January 10th, the company was served with a legal notice in a criminal investigation by the Northern California Division of the US District Attorney’s office in Oakland. The alleged causes of action included false disclosure of information relating to financial transactions with intention to defraud the public, criminal interference with the sale of shares by employees, fabrication of false rumors to deceive the public and company employees, and violation of controls on export of strategic technologies.

Before the partners had even had time to meet and take stock of the situation or how they would respond, later the same day Federal officers arrived at MAI with a search warrant authorizing them to seize incriminating evidence relating to the case, which the plaintiff claimed was otherwise likely to be destroyed or removed. The five partners and Levin were meeting in the fourth floor conference room when the authorities arrived. By the time they were notified, a search party of twelve officials was already on the fourth floor about to enter Dan’s office. Limpia, who was passing in the hall, prevented them from entering until Dan, Bill and Levin arrived. They stood in the hall, demanding an explanation while Bill examined the warrants. Ten minutes later groups of three officers entered the offices of Dan, Bill and Ray simultaneously and began searching. A fourth group demanded access to the cloister. Dan tried to tell them that it was a private residential space, but they dismissed his explanation and insisted on access. Vinay and Anya stayed to observe what was happening in Dan’s office, while Dan and Levin escorted them upstairs. At the entrance to the Cloister, the senior officer informed them that they were barred from entering the room during the search. In response to Levin’s vehement protest, they were permitted to observe from the open doorway.

Dan watched as they entered his study. He could see from a distance that they were methodically examining the documents on his desk and credenza and in the drawers. From the doorway he was unable to clearly see what was happening on the other side of his desk. When they came to the drawer where he kept *The Book*, he held his breath, cringed with tension and waited to see whether the official removed it, but from his current position that man’s movements were not clearly visible. Meanwhile another official was searching through the bookshelves behind the desk, opening volumes and examining them carefully. It was unclear what they were hoping to find. He came to the Archives bound as an encyclopedia and reached for the first volume, but the leader of the group motioned with his head not to bother. The officials gathered piles of paper and copied the hard drives of the computers which Dan and Levin had been using in the Cloister.

Finally all four groups brought the material to the fourth floor conference room where it was to be inventoried and photocopied. In certain cases original documents were also to be seized as evidence. Dan accompanied them downstairs and watched them unpack the boxes to discover whether *The Book* was among the documents removed from the Cloister. He sighed with relief when he saw that it was not there. He inquired with the officers what precisely they were looking for, but received only vague replies. After surveying all the documents, the most senior officer, a man named Thomas, indicated that he was still not satisfied. He took three other officers and returned to Dan’s office and to the Cloister. Again they searched through all the materials in the study and then conducted a more careful search of the bedroom. What could they possibly be looking for?

By the time the twelve man team left MAI it was already past 8 pm. Since it was Friday, most employees other than the top management had left by 5 pm and the building was nearly empty. Rather than waiting for an elevator, Dan bounded up the stairway to the cloister, ran through the living room into the study and opened the third drawer on the right where he kept *The Book*. The drawer was empty.

Dan sat down stunned and bewildered. In spite of all that Levin had told him and warned him, he had never really believed that anyone would try to steal *The Book*. How could something that was so positive be the occasion for an act of that type? What possible value could *The Book* have for anyone else who was not searching for the knowledge which he, Anya, Levin and the others were so strongly drawn to? Oppenhauer must have learned about *The Book* from Henmann. But what possible value could it have to him, except to use as a way to force them to capitulate. Did he really believe that the five partners would surrender their controlling interest in MAI for the sake of a book of mysticism? He wondered at that moment what he himself would do if faced with that alternative. A great heaviness descended on him as he sat in the study, as if someone were pressing on both of his shoulders driving him down in the chair. He really could not discern what his feelings were. He just felt exhausted.

A few minutes later Levin came into the room. He was followed by Anya, Ray, Vinay and then Bill. They had come to compare notes on what had happened, why and what they should do about it. When Levin came to the door of the study and saw Dan sunk motionless in the chair, he became suddenly alarmed.

Immediately a terrible fright passed across his mind. He could think of only one thing that might make Dan look that way. He called out in an alarmed voice asking Dan what was wrong. Without looking up, Dan pointed down at the drawer and they all knew what he was trying to say.

Levin walked over and examined the drawer for himself. Then he raised Dan by the arm and motioned him into the living room where they all sat down. Total silence prevailed for the next half-hour. Everyone was lost in thought about the implications of what had happened. In response to a question from Anya, Levin assured them that the *Messages* and *Archives* were left intact on the shelf. The officials had simply passed them over. Then speculation began regarding why and how *The Book* had been taken. It had not appeared in the conference room, nor was it on the list of documents seized. That much was certain. Both Dan and Levin had been watching too closely to have missed it. But if it had been seized, how was that possible? Whoever had removed it must have intentionally concealed it, but who could have done it and why? That meant Oppenhauer must have someone within the investigating team working for him or amenable to influence. Was the man really that powerful? And that desperate?

Dan sat quietly and listened to the others speculating on the possibilities. His mind was totally empty and he could not think. Anya was somewhat surprised to find Dan looking and behaving more or less normally. She could not imagine that he had absorbed such a devastating blow and still maintained even a pretense of a smile. That had always been something she admired about Dan. He could smile and even laugh at times when most other people would break down and cry. It was not that he didn't feel things. She knew he felt them intensely. Nor was it just a formality or habit to conceal his true feelings. She could best describe his laughter at times like this as a laugh of courage. It reminded her of the story she had read about the middle aged Christian man and his son who were captured by tribals in South America while working on the railway. They were tied to stakes and surrounded by dried branches, so there could be little doubt about the tribals' intention. The chief came forward and drew a large cross on the ground at their feet and then spat on it. He signaled to them that they should do likewise if they wanted their lives to be spared. It took a few moments for the man to figure out what the chief meant. When he finally comprehended, he spoke something to his son and they both started to laugh boldly. The chief was at first surprised by their effrontery in the face of certain death, but soon his anger surged up and he signaled for the fires to be lit. The same instant gun shots were heard in the distance and the army arrived in time to rescue the two men.

By 9:30 pm the others rose to leave. Before leaving Anya went over to Dan and said, "After all that we have been through together, I can't believe *The Book* is gone. Dan, there must be something we can do to get it back. Whatever it is, we will do it."

Dan and Levin sat quietly for a long time, then Levin spoke, "I know what it feels like to lose *The Book*. I know the sense of loss and emptiness I felt after having held it in my hands and read it for just fifteen minutes. But I cannot even imagine how it must feel to lose it after having lived with it constantly for three years."

Dan looked at Levin but remained quiet. Ten minutes later he replied. "Three years ago *The Book* came to me when I did not know it existed. It came in answer to something I was seeking, but did not know how to find. Since then I have tried to relate to *The Book* with the seriousness it deserved. I have not always succeeded, but recently, especially after you came, I have felt closer to it than ever before. I felt it was revealing deeper aspects of itself. If *The Book* has left me now, I have to believe there is a reason. I don't believe Oppenhauer or Mossad or anyone else has the power to take *The Book* away, unless something in me creates an opportunity for them. All evening I have been repeating to myself over and over the central lesson that I have learned from *The Book*—that it is my attitude and inner aspiration that determine the result, not external circumstances. I have never found it so difficult to accept that truth as tonight, but I know it is true. I have been trying to discover what I might have done to lose it, so that I can reverse that movement psychologically."

Dan stopped speaking and closed his eyes, giving Levin the impression that he had finished. But a then he opened them again and continued. "A few minutes ago, I suddenly saw my position in a new light. I realized for the first time that I have received knowledge greater than my aspiration and I have been struggling by effort to qualify myself, to deserve it now that it has come. The coming of *The Book* was not just a life response to my aspiration. It was something more. What do you call it when you get more than you deserve. Perhaps that is what *The Book* means by 'grace'. *The Book* has not come to us because we have qualified ourselves to deserve it in some way. I believe it has come because it has a purpose, a work that needs to be accomplished and it needs someone through whom to express that purpose. That's a very different thing. If I'm right, then *The Book* cannot and will not leave us unless or until its work is finished or we betray that work. My mind tells me we have just suffered a great loss. But for some inexplicable reason my heart does not feel that way. Perhaps I am just too numb to know what I feel."

102. More Visitors

Dan slept poorly, but woke before 6 am and could not go back to sleep. From his bed he glanced out the bedroom window at the San Francisco skyline in the distance. He realized he had not been outside for weeks. Absorbed in his work during the day and lost in late night discussions with Levin, he had really felt no need to. He realized for the first time that Levin, who had no need to confine himself, had stayed with him the whole time. Now that *The Book* was gone, there was no further reason for either of them to remain closeted in Gavoché's fortress. He rolled out of bed and strolled into the living room, where he saw Levin fast asleep on the couch. Suddenly he had an urge to breathe the morning air. He bathed and dressed quickly, wrote a short note to Levin, and then left the building. Once outside, he felt the urge to walk and headed up University Avenue toward the UC campus without thought of any particular destination. After stopping at a coffee bar for coffee and a croissant, he walked briskly onto campus, through the grove of towering Eucalyptus trees, across Strawberry Creek, past Sproul Hall and down Telegraph Avenue.

He looked up and found himself standing in front of Moe's bookstore looking in the glass window at the very bookshelf where he had first found *The Book* three years earlier. Only then did he realize where he had been headed all along. It was just past 7 am on Saturday morning. Just a few people passed by as he stood gazing in the window. How much had happened in the past three years. How much his life had changed. How much richer, more meaningful it had become. Only now he realized the magnitude of that change. Only now he realized how different he felt than when he had walked into Moe's that Superbowl Sunday. The sense of disquiet was no longer there, the sense that something was missing. Nothing had been missing from his life the past three years. Every moment had been full, rich, challenging, satisfying. It was not just answers he had found. It was meaning. Not the meaning that comes from faith, but the meaning that comes from connection. For the first time in his life, he felt everything was connected, inside and outside, thoughts and feelings, aspirations and work. It all fit together as an integral whole. It moved forward as a single unit. Life became a little brighter and lighter every day. It evolved.

He suddenly looked up and noticed the fleeting reflection in the store window of a young woman who was passing behind him. She was looking over his shoulder as she walked with a heart warming smile on her face. He could not tell whether she had been looking into the window to see what he was staring at or whether she was looking at a reflection of his face in the glass, which he now realized was smiling too. In any case, her expression was somehow reassuring. A moment later she disappeared around the corner.

Dan had a momentary urge to wait for the bookstore to open, to go in and examine the shelf where he had originally found *The Book*. But realizing that the doors would not open for hours, he turned and started walking back the way he had come. As he walked, he reviewed the events of the past few days and tried to figure out where he had gone wrong. He must have made a fatal error. Otherwise *The Book* would not have gone out of his hands. Oh, it was fine to explain it away in common sense terms, but, Dan thought, they have just spent so many weeks studying events from the premise that nothing happens by chance and nothing happens without a corresponding inner psychological movement. He just could not see what he had done or felt that had allowed this to happen. When he strained to think about it, his head started to burn and all the relief he had felt in getting outside vanished. He pushed that whole train of thought out of his head. Passing through the eucalyptus grove again and emerging on University Avenue, he stopped. MAI was straight ahead just a few hundred yards down the road. His car was there in the parking lot. But the cool morning air was so refreshing, he was not ready to stop. Instead he turned right on Oxford St. and headed towards his apartment in Kensington four miles north.

By the time he reached home, he realized he was hungry, so he stopped at a nearby market and purchased some groceries. Reaching into his wallet for cash, he realized that he had left his cell phone at the office, but the thought of being out of touch for a while felt soothing. Everything at home was as he had left it. There was not even a trace of dust. Limpia had obviously kept her promise to drop by weekly and keep the place clean until he returned.

After breakfast he sat down in his favorite chair and tried to focus his mind on the future. He tried to imagine a future without *The Book*. Try as he would, he could not do it. Of course, they still had AIS⁷ and at least the foundations for AIS⁸. They still had the thirty volumes of *Archives and Messages* which contained thousands of pages that he had only cursorily glanced at. They could provide a precious source of inspiration for completing AIS⁸. Still he could not help feeling that they were no substitute for *The Book*. The loss of *The Book* carried an importance that went far beyond its practical utility. It symbolized something irreplaceable. He was not even entirely sure he could go on with AIS⁸ without *The Book* or that he wanted to. Is this how Levin had felt the past seven years, he wondered? Imperceptibly his thoughts subsided and he fell into a deep meditation.

When he awoke, he discovered that more than two hours had passed since he had sat down. A moment after he opened his eyes, the phone rang. It was Levin. He had seen Dan's note and called earlier but there was no answer at the apartment or on Dan's cell phone. Dan explained that he had gone for a long walk and had left his cell phone in the Cloister. Levin asked if he needed anything. Dan replied, "Solitude." Levin said that he too felt an urge to get out of MAI, and was going across to spend the weekend with some old friends in San Francisco. They agreed to meet back at the office on Monday morning.

In the afternoon, Dan went out for another long walk; stopped on the way home for a light dinner at a small Italian restaurant and went to bed early. Some time past one in the morning, two men moved through the shadows and approached the outside of the building where Dan's third floor apartment faced north looking out on the forested hills of Tilden Park. All the doors and gates to the building and the garage were locked. The men climbed up the south side of the building to the roof with such facility that they appeared to be gliding. Then they rappelled down the north side and lowered themselves gently on the patio outside Dan's living room window. At almost the same moment, another man emerged from the door of the apartment directly across the hall from Dan's apartment, inserted a key that opened his front door and entered the living room which was pitch dark but for a faint light streaming through the glass doors from the patio. He held some kind of electronic device in the palm of his hand. The men on the balcony approached the glass doors and began silently cutting an arc of glass from around the door handle. The next moment a hand reached in and fumbled to unlock the door. At that same instant, a glaring light seemed to explode outside the patio casting a blinding beam into the room. Simultaneously a shrill alarm began to ring throughout the building with a whining sound that rose and fell in modulation.

Startled by the sound, Dan awoke and sat up in bed. The room was filled with a strange light that was streaming in the window. It was so bright that he could not imagine what might be its source. Something in his mind suddenly made a connection between the blaring alarm and the glaring light. It must be a fire, he thought. He jumped out of bed and pulled on his pants unaware of the four men just a few yards away.

When the light came on, the two men on the patio swiveled around the next instant to discover its source. They found themselves looking straight into two powerful beams of light, whose source was too bright to discern. Then the alarm began ringing. In an instant, they had jumped over the side of the balcony, lowered themselves to the ground and disappeared into the darkness.

The other man watched them from inside the room. The next moment, Dan emerged from the bedroom and saw a solitary figure illuminated by the beams of light. Already startled by the light and the alarm, he nearly jumped when he saw the man. An instant later he recognized Levin standing in front of him and his sense of alarm came under control. Levin reached for the light switch. A moment later the beams of light outside vanished and the alarm suddenly stopped, leaving a ringing silence in its wake. Dan became aware of a knot of pain in his stomach and an intense feeling of nausea rising up. Levin walked over to him, smiled, patted him on the back and led him to a chair saying, "Come and sit down. Let me explain what just happened."

It took several minutes for Dan to start breathing normally. It took another twenty minutes for the pain and nausea to subside. Levin said that he had an uneasy feeling when he woke the previous morning to find Dan gone and read his note.

"They already have *The Book*," Dan said. "What more can they want from me? What possible cause could you have for worry?"

"Actually, we do not know that for sure," Levin replied. "We don't know who has been trying to get *The Book* and we don't know who has it now. What if they are not the same person? We know that you don't have *The Book*, but we are not sure everyone else does. That was my concern. By my count, at least two different groups that have been monitoring you and MAI appear to be after *The Book*. I am not including Oppenauer, because it never occurred to me that he would consider it important. So I could not be sure you would be left alone if you returned here."

"Kurt, you mean to say that you rigged up those lights and alarm and turned them on just in case someone was out there thinking of breaking into my apartment? You nearly scared me to death. I think you are blowing this thing out of proportion and letting your imagination run away with you."

Levin grabbed Dan by the arm, raised him from the chair and led him over to the glass door leading to the balcony. Pulling aside the curtain, he pointed to the cut glass around the door lock. "Ten minutes ago there were two men out on that balcony. They scaled the south side of the building and lowered themselves down from the roof. When they were about to open this door, I turned on the lights and the alarm. Then they fled. I am hoping this will discourage them from planning another nocturnal visit."

Dan stared at the cut glass. He felt his stomach knotting and the nausea rising up. At first Levin's words did not fully register. When they did, he went back to the chair, sat down, leaned over with his elbow on his leg and supported his forehead with his right hand. His head was swirling, but his mind was silent. Not a single thought arose. He was totally in the moment without past or future, here and now. Levin walked over and patted him on the back. Dan raised his head and looked up at Levin asking, "Any idea who they were?" Levin nodded to indicate that he did not, then added that they must have followed Dan back from MAI the day before and finally seen an opportunity to reach out for *The Book*.

A question occurred to Dan. "Where did you come from so suddenly when the intruders arrived and how did you manage those lights and the alarm?"

"Across the hall," Levin replied. "It seems that the electricity to your neighbor's apartment failed this afternoon, so on behalf of the landlord I arranged for them to spend the weekend at a bed and breakfast in Napa. I then called Luis Gavoché and asked him to install the lights and the alarm in those trees opposite your window with a remote control switch that I could operate from this room."

Dan laughed nervously. Levin urged him back to bed and then spent the rest of the night on Dan's living room couch. Sunday afternoon they went for a two hour walk. There were plenty of questions to discuss, but not many answers. That night they returned to the Cloister. With or without *The Book*, this was the best place to be. Levin moved back to the couch at Cloister, where he had been sleeping for the past month. Couches were becoming a way of life.

Sunday morning Gregory Thompson woke up as usual and flipped on the TV set in his bedroom in time to hear the latest news on the War in Iraq. He shook his head and murmured to himself. "What a fiasco! I warned the fools against it. Anyway they won't be able to pin the blame on me when the roof comes crashing down. Thank God I got out in time." He leaned over and picked up the cell phone on his night table and turned it on, then put it down again. A moment later, the phone beeped indicating an incoming SMS. Thompson picked up the phone and read the message, "No package. Levin." A look of fright and bewilderment crossed his face simultaneously as he threw the phone down on the table cursing to himself.

103. Limpia

Dan woke up at 7 am on Monday morning and found Levin was still asleep in the living room. He made coffee, walked into the study and sat down at the desk as he often did at this time of day. Out of habit he stretched out his right hand and opened the drawer where he kept *The Book*, half hoping to find it there again. Looking down, he could not believe his eyes. *The Book* was actually there in the drawer. He pulled it out and opened it to make sure. There could be no doubt. It was not an illusion.

Smiling in bewilderment, Dan walked into the living room and shook Levin's shoulder. Levin looked up to see what the matter was. Dan held *The Book* before his upturned eyes. Levin exclaimed and sat up, as surprised as Dan had been a moment earlier. They sat for a while speechless. Then Levin picked up the phone to inform the others that *The Book* had been found. Bombarded by more questions than he cared to answer on the phone, he invited those who were curious to meet them in the Cloister at 9 am for narration of a curious adventure.

Then life became more curious still. At 8:45 am, there was a knock on the door. Levin opened it and Limpia walked in. Appearing very agitated, she walked over to Dan and apologized in broken English for disturbing him and started rapidly relating some long explanation that he could barely understand. Dan asked her to slow down and speak to him in Spanish. She apologized for leaving so suddenly on Friday night, but explained that she had to go pick up her son and drive south for her sister's marriage in Los Angeles that weekend. She had tried calling Dan several times on Saturday to explain what happened, but there was no answer either at the Cloister or on his cell phone. Then she apologized a third time for acting without his permission, but she was so frightened by the arrival of the Federal officers, that she had panicked. Dan and Levin listened patiently, but for quite some time they could not fathom what she was trying to say. Then it dawned on them both. It was Limpia who had taken *The Book* and later returned it.

Dan asked her to sit down and offered her some tea to help her relax but she adamantly refused. Addressing her in Spanish, he asked her to tell them what had happened. Limpia explained that when she saw the officials begin searching his office, she immediately became afraid that they were looking for *The Book* and might also go up to the Cloister. So she ran upstairs, opened the door with her key, went into his study and removed it. By the time she had removed it, she could already hear voices outside the door, so she went out onto the roof garden through the study window and back down the stairway while the search was going on inside. She had tried to inform Dan or one of the others, but since the officers were all around, she found no opportunity to do so without attracting suspicion. Finally, she had been forced to leave to pick up her son, so she took *The Book* with her.

When she could not reach Dan the next day, she became seriously concerned. She knew he would be missing it. So Sunday morning she got up early and drove back from LA straight to MAI. Finding the Cloister empty and still unable to reach Dan by phone, she placed *The Book* back in the drawer and went home.

Although Levin did not understand Spanish, he could follow the gist of her narrative from her gestures and expressions. After she finished, Dan asked her how she had known about *The Book* in the first place and whatever made her think of protecting it. Limpia replied that she could remember the first day Dan had brought *The Book* to MAI with a beaming smile to show it to his partners. She knew then that there was something very special about it, but had never seen a trace of it again until Dan moved into the Cloister. She often cleaned his office while he and Levin were talking in the other room and sometimes saw *The Book* on his desk or on the reading table next to him. She said she was very happy to know that he still had it. She had no idea what *The Book* contained, but she knew it was important.

Dan and Levin began to laugh gently as she related the story, somewhat forced at first, almost consciously trying to release the tension and anxiety that lay unexpressed beneath the surface, like a forced effort to inhale in a closed space. Gradually effort gave way to a sense of relief and the kind of laugh you have when you discover that your worst fear was only an imagination or a nightmare. There was no joy in that laugh, for nothing had happened to justify joy. Just a narrow escape from two harrowing possibilities. But gradually the nature of that laughter changed imperceptibly. As effort was superseded by relief, relief melted into a mild sensation of security and an invigorating energy which swelled imperceptibly into a sense of well-being that acquired increasing intensity and richness minute by minute. The more powerful the feeling grew, the quieter they became, until thought and movement ceased altogether.

A lingering thought kept hovering in the atmosphere trying to gain entry into Levin's mind. If the search party that came to MAI had not taken *The Book*, then could it have been them on the balcony at Dan's apartment as well? Levin felt rather than thought this thought, recognized its intrusive nature, knew that it

was only the loose end of an unending string of such questions. Perhaps for the first time in his life, refusing to take the bait, his mind pushed that thought away and bathed in the soothing silence that was power.

By the time Limpia had completed her explanation, Ray, Anya, Vinay and Bill arrived and they asked her to repeat the whole story over again.

104. Reversal

The following Monday, Bill walked into Dan's office with a sullen look on his face. Oppenhauer had called him early that morning from Frankfurt and informed him that he would be forced to call in the loan to Bill's father, but that he was willing to write-off the loan and settle the matter completely in exchange for Bill's share options in MAI. Oppenhauer's voice was as polite as ever, but now Bill could distinctly hear the underlying knife-like edge barely disguised by his surface tone and words. Anger surged up from Bill's stomach and before he could think of restraining himself, he asked, "Did you find what you were looking for on Friday?"

Oppenhauer paused for a few moments before he responded and then said, "Bill, there is only one thing I am looking for. It's MAI. And I am determined to get it. For your information, I am filing a law suit tomorrow in San Francisco claiming losses and damages arising from corporate mismanagement along with a request for an injunction restraining MAI from giving away any proprietary rights to its code or its knowledge-base until the case is settled." Then he hung up the phone.

Bill looked at Dan and smiled meekly. "I just wanted to inform you of what has happened," he said. "I have already informed my father about what Oppenhauer is planning and why. I told him I cannot in good conscience sell my options, so we are going to just have to sell the family business or liquidate enough assets to repay Oppenhauer's hundred million dollars." His voice carried at once a sense of guilt, helplessness and resignation. He knew he had brought this on himself. He knew he should have given more attention to the family business than to his own independent practice. He knew he should have been able to discern the falsehood behind Oppenhauer's glossy surface. Instead, he had been taken in by his wealth, social position and prestige because those were the values he had pursued all his life.

Dan could read Bill's mind by the expression on his face, as plainly as any written confession. "Fortunately, that won't be necessary, Bill," he replied. "We have already anticipated this eventuality and decided on a remedy. We are willing to buy back your MAI options for hundred million dollars out of Choi's money. That way both MAI and your family business will be made secure. It will still leave you with the original ten million dollars in shares that you paid for out of your inheritance four months ago and something extra."

Bill was too moved to speak. He had always believed in struggling to get ahead in life, fighting for what he wanted and taking it. As *The Book* said, life is force and force is power. People like Oppenhauer knew that better than anyone. People like that had been his role models. They knew how to accomplish whatever they set their minds on. But this was different. It seemed to fly in the face of the basic law of life. Bill had made a conscious decision *not* to exercise the power he had, not to do what self-preservation and self-interest urged him to do. Yet, instead of foregoing the potential benefits of that action, he was going to get that and more. He would be able to save the family business, retain some shares in MAI, still have a job here, still be part of the most significant initiative of his life. Life appeared to have changed its rules. It was functioning in reverse and he could not immediately understand how it had happened. He extended his hand to Dan in silent thanks and walked out of Dan's office to call his father back.

Later in the day, Dan asked Bill to repeat to Levin what Oppenhauer had said to him over the phone. Dan seemed more preoccupied with concern about *The Book* than the investigation. "Kurt, do you think it's possible that the officers were not actually looking for *The Book*, but it just appeared that way to us because we are paranoid about someone taking it? Oppenhauer is clearly a very shrewd man, but it is not clear from what Bill says that he even knew that Bill was alluding to *The Book* when he asked that question on the phone this morning. Assuming we were right in thinking that the officials were specifically searching for *The Book* and that was why they returned to the Cloister a second time, perhaps someone else put them up to it."

"That is exactly the conclusion I am coming to," Levin replied. "Why would Oppenhauer file a civil suit just now when he knows that a criminal investigation is already underway? We just assumed that Oppenhauer must have instigated the Federal action. Maybe he has nothing to do with it at all. Perhaps he does not even know about it yet. If that's the case, who is behind it and why?"

That night Dan was again harassed by questions about what had happened, which he was unable to push out of his mind. He was overjoyed to discover that it had only been Limpia who had taken *The Book*, and that too only to protect it. But still a question kept haunting him. Why had it happened? What had he done that resulted in the loss of *The Book* even temporarily? Then it struck him. It was so simple. *He had been afraid*. Hadn't *The Book* warned him long ago that fear has the capacity to attract the object of fear? When the officers arrived and began searching, he was not worried about anything, except the possibility

that they may take *The Book*. His fear invited an action from life that justified his fear. His fear had become a self-fulfilling prophesy!

Early the next morning Dan was working at his desk in the Cloister when he heard his cell phone ringing in the next room. He went into the living room and picked up his phone, then realized it was not his phone at all, but Levin's which he had left on the sofa when he went into the bathroom to shower. At first he thought of leaving it unanswered, but then thought better of it. He picked it up and said hello. "Levin? This is Thompson. I read your SMS about the package.." Dan was stunned to recognize Gregory Thompson's voice on the phone. Suddenly he was very sorry he had answered the call. He hesitated for a moment and then disconnected the call and put the phone back on the sofa. Why would Kurt send an SMS to Thompson, he wondered as he walked back into his office? I thought he said Thompson was completely out of the picture. The thought crossed Dan's mind that he could read the SMS on Levin's phone and find out what it was about, but he felt it would be an act of distrust to do so. Or he could simply ask Kurt what it was about or tell him Thompson had called and see how Levin responded. Neither of those options felt right either. Could it be a coincidence that Thompson and Levin were communicating just a few days after the Attorney General's raid and the break-in attempt at his apartment? If Levin was seeking some help, would he have called Thompson? Why would he send him an SMS unless they were already in close communication? These thoughts buzzed through Dan's mind and generated an increasing sense of discomfort. He could feel a vibration of suspicion rising as a queasy feeling in his gut and trying to infest his thoughts with doubt and distrust. Dan struggled with the impulse to succumb, then by a sheer act of will he pushed the thoughts aside and refused to consider the matter further. Time will tell, he thought to himself.

105. Accomplish

In spite of all the drama and distractions, MAI continued to grow. Its existing consulting clients each recorded higher than anticipated profit growth during the second half of 2006. MAI's gross earnings from profit sharing contracts alone exceeded one hundred forty million dollars during the fourth quarter of 2006, a twenty-five-fold growth over the same period the previous year. Based on these results, a flurry of new clients signed contracts in January. By the end of the month, MAI had thirty-three corporations under consulting contracts in Europe and North America with combined revenues of more than fifteen billion dollars. By the end of February the client list included sixty-one companies with total revenues in excess of forty-four billion dollars. AIS⁷ was proving itself to be good at the mathematics of multiplication.

After a long debate, the partners decided to develop two versions of AIS, an institutional and an individual version. The institutional version, to be marketed as AIS⁸, would be built on the existing mainframe model of AIS¹ to AIS⁷ but incorporate one hundred life axioms to enhance its accuracy and productive power. The goal was to release the institutional version by April 1, 2007. The plan was to later enhance AIS⁸ by drawing upon the life experiences recorded by the individual version.

The individual version, to be called *Accomplish*, would be a completely new, web-based product assembled from scratch but incorporating converted modules from the mainframe version. It would consist of small desktop applications marketed to users at a target price of hundred dollars that connected over the internet into a central server. The server would be a reservoir for indexing the essence of each life experience reported anonymously by users, in a manner similar to the way Google and other search engines index web pages without transferring personal information to the server. This would enable users to draw upon the collective life experiences of all users on the internet at any point in time, a form of distributed system similar in conception to music file sharing systems such as BitTorrent, except that the data being shared would be generated by the entire population of *Accomplish* users. The application would process the experience based on principles of accomplishment and apply it to enhance the capabilities of individual users to accomplish whatever tasks they applied themselves to. The goal was to commence a beta-test of *Accomplish* during April and launch the first commercial version two months later.

During the second half of January, the Cloister became the center of activity for the five. Meanwhile Bill managed the commercial operations of MAI, which continued to expand rapidly and directed the lawyers to defend it against Oppenauer's suit. By the end of January, progress on both versions of AIS⁸ was advancing rapidly. Problems that had until then appeared insolvable suddenly lent themselves to speedy solution, often by equations which at first appeared far too simple to handle so much complexity.

On April 1, 2007, AIS⁸ was officially launched. The response of corporates to the new mainframe version exceeded their most optimistic projections. Within thirty days, an additional seventeen Fortune 500 companies had signed on for a program involving one or more of their subsidiary companies with revenues in excess of thirty-one billion dollars, almost doubling MAI's client base in the very first month. In May, Choi's group informed MAI that they had signed contracts with five large Korean firms. Edna Lambton's personnel department had to dramatically accelerate the recruitment and training program for new marketing and technical personnel to cope with the expansion.

Meanwhile, progress on the new web-based engine proceeded apace, and on April 24 the beta version of *Accomplish* was ready for testing. Vinay had painstakingly assembled a group of thousand users to participate in the beta test. The primary criteria for selection was that these were all individuals involved with undertaking or managing difficult time-bound projects in which performance could be quantitatively measured. Feedback from beta-users came fast and furious. Along with a long list of complaints that poured in regarding problems and glitches, MAI help lines were inundated with questions from users about the basis for the program's recommendations. Many expressed skepticism or bewilderment at the type of recommendations the program generated. Some dropped out of the beta test within the first month because they did not understand the logical basis for the recommendations. A number expressed resentment at the probing nature of many of the questions it asked. In spite of the fact that the identity of users was strictly controlled by a double-blind technology, many expressed the concern that the company might be collecting information about users which could not possibly be relevant to their decision-making processes in work. Rumors also began to circulate among beta users that the software was based on some type of mystical knowledge. While the company did not respond to these rumors, some users cited this possibility as a negative factor, but a significantly larger number mentioned it as a reason for sticking with the test.

Those who actually completed the first month of testing reported mixed results. In 27 percent of the cases, users rated the performance of *Accomplish* at 9 or 10 on a 10 point scale, often supplementing the

numerical score with comments such as ‘Astonishing’, ‘Remarkable’, ‘Exceeding all expectations’, ‘Unbelievable’, and in one case, ‘Impossible!’ When interviewed, many in this group noted that unanticipated events had enabled them to achieve far more than they originally believed possible. Another 12 percent rated performance in the 7 to 8 point range, described as above average to excellent. Around 40 percent rated it in the 5 to 6 point range. Comments indicated that the program had definitely helped them improve their performance but not necessarily enough to justify the learning curve, time and effort involved in using it. The remainder was almost evenly distributed over the lower range of the scale. Comparison of these beta-test results with initial user response to a wide range of other applications indicated that *Accomplish* had been well received by the market.

Since feedback from users occurred on a daily basis, the development team was able to begin modifications of the software continuously during the beta-test period. During the last two weeks of the test, user ratings were 25 percent higher than they had been at the start. Meanwhile, a self-proclaimed community of avid beta-users constituted itself and began exchanging notes on the program. The continuous flow of data from this group provided additional feedback to the development team for refining the algorithms to further enhance performance. The user group even launched a campaign to change the name of the software to *Luck*.

Excitement among early users generated widespread publicity for *Accomplish*, even before the release of the first commercial version of *Accomplish* on July 1. Inundated with requests by industry journals, interviews with Vinay appeared in a more than a dozen magazines during the first month. Vinay also invited a delegation from the Berkeley users group to visit MAI to verify data storage criteria firsthand. Together with the interviews, this helped clear the air regarding confidentiality concerns of users. Although the software was designed to enhance accomplishment of any type of activity, the initial emphasis had been on the execution of complex and challenging professional projects, such as engineering design, construction, new product launches, new idea generation, management of conflict, reconciliation of disputes, etc. Soon users began experimenting with the application of *Accomplish* to address personal and family problems as well, but initial results in the personal sphere were less impressive.

The performance of *Accomplish* improved steadily with each passing week as the database of life experiences grew and new axioms were added to the software’s battery of principles. Word of mouth reports on blogs and user groups generated a groundswell of enthusiasm for the program and sales growth exceeded the company’s projections. But a deeper analysis of the performance turned up a perplexing pattern which no one at MAI was able to account for. Users who had previously reported high success rates applying *Accomplish* to solve problems and implement projects reported their performance over time steadily improved, until in many cases they were reporting near 100 percent levels of accomplishment. Any project submitted to *Accomplish* generated maximum results in minimum time. The problem was that not all users fit into this pattern. Groups of users that had reported poor initial performance with *Accomplish* continued to report low levels of satisfaction, in spite of improvements to the software and their own greater familiarity with the software. In order to take into account different skill levels, MAI offered special training courses for poor performers, but in most cases this did not result in any dramatic improvement. While overall satisfaction levels were quite high for a new product launch, these findings dampened the enthusiasm of the project team because no matter how many axioms they added to enhance *Accomplish* or how many life experiences it acquired, the benefits were perceived only by those who were already highly satisfied by its performance. Those who were unsatisfied by the performance of the launch version remained unsatisfied with subsequent upgrades. Frustration levels rose when a variety of strategies failed to address this basic issue.

While most industry media and users rated the launch a great ‘accomplishment’, a significant backwash of complaints and reactions soon arose. At first the company dismissed the reaction as typical of the skepticism and paranoia which accompanies most new products or technologies on the Internet, especially those that make significant performance claims and involve feedback and exchange of data. Therefore, the partners hoped that it would die down after an initial period based on positive feedback from users. In practice, as *Accomplish* gained in popularity, the variety and intensity of opposition seemed to grow disproportionately. The range of accusations, suspicions, faults and bugs attributed to the software was so great, that the company realized it would need to study the nature of the complaints very closely before it could address them. It was natural to assume that these complaints arose from the population of disappointed users, but initial examination did not confirm this view. Something other than performance-related issues seemed to be bothering users.

A number of research teams were constituted and the task was segmented to make it more manageable. A team headed by Vinay began probing user concerns regarding security and confidentiality. Ray’s team analyzed project success rates to identify the reasons for the wide disparities in performance reported by different users on different projects. Levin’s team started tracking the sources of complaints to

various users and groups to determine whether they resulted from spontaneous user response or sponsored instigation by the media, competitors or other sources. It was his idea to enlist the support of independent *Accomplish* user groups to augment the efforts of the teams. These groups were asked to examine the validity of serious user complaints and track rumors back to their source. More than thousand individuals, including three hundred from the beta-test group volunteered to work with the MAI teams. Dan and Anya concentrated on incorporating additional life axioms into the product to further enhance its performance under unusual life circumstances.

Almost unnoticed at first, *Accomplish* gave birth to a new occupational category on the web known as *Accomplish* consultants. These consultants were not of the common garden variety that appear to support popular software. They were not programmers offering to customize the software or trainers offering instruction on how to use the program. Rather they consisted of users claiming advanced knowledge of the logic or laws governing accomplishment that were incorporated in *Accomplish* and expertise on how to successfully apply *Accomplish* to enhance performance and solve problems. While the company looked favorably on the emergence of these self-proclaimed experts, untoward consequences soon made it apparent that the consultants were a double-edged sword. Many of them made greater claims for the efficacy of the software than MAI did—often near miraculous and occasionally bordering on the unbelievable. In some cases they cited specific examples, real or fictitious, to support their claims, which no one at MAI was in a position to either confirm or deny.

Confusion regarding both the capabilities and actual achievements of *Accomplish* added to the difficulty in clearing the air of rumors and accusations against the company. Other consultants claimed intimate knowledge of the theoretical basis for *Accomplish*. Such claims ranged from the mundane to the absurd. On the one hand, some asserted that *Accomplish* was based on statistical probability or chaos theory and the premise that all events and all accomplishment are fundamentally governed by chance. Advocates of this view frequently referred to the software by the pseudonym *Luck*. Some claimed *Accomplish* was highly effective for gambling. At the other end of the spectrum were groups that claimed *Accomplish* had been designed and created by advanced robotic computers, the result of direct access to the earth's racial memory or channeling, based on ancient spiritual scriptures from Egypt and Tibet, or derived from the mystical teachings of the Kabbalah or the Essenes. The fact that three persons of Jewish heritage were associated with development of *Accomplish* was taken as evidence in support of either or both of the last two assertions.

Since there was no way to prevent people from making wild claims about *Accomplish*, Vinay proposed instead to constitute a certification program for experienced users that would include training and testing on both the theoretical and practical basis of the software. Everyone approved of the idea and Vinay took charge of organizing the program. This raised further questions regarding precisely what MAI should say about the theoretical basis of *Accomplish*. Although the company was free to claim this knowledge was proprietary, Dan argued forcefully in favor of full disclosure. "This knowledge is not ours to possess and utilize as we wish. It does not belong to us at all." He proposed to identify a set of practical formulas and theorems that accurately represented the logical basis for key algorithms and publish it as supporting documentation. In response to concerns that the company might be giving away its technology, Dan argued that the heart of the software was not any or all of the individual theorems but rather the way they were related and integrated. Finally, Bill convinced the group to wait until they could deal with Oppenauer's motion for a restraining order against the company before doing anything that could be used by him as evidence of wrong intention or to undermine the company's legitimacy.

PART V: CONSCIOUSNESS

106. The Resistance

The first response of society to any pioneering evolutionary initiative is to ignore, denounce and ridicule it or even to present organized opposition to eradicate it at its source. When all opposition fails, the initiative of the pioneer is imitated by others, multiplied, extended, recognized, appreciated, organized by the society, assimilated and integrated with its existing activities. When the resistance is very strong, it is eventually overcome by social revolution.

Archives

Equality, non-reaction, is far more powerful than any action.

Messages

In mid-August, Levin's team submitted a detailed report on the sources of the negative publicity which was becoming increasingly prevalent and hostile at the very time when positive support for *Accomplish* was swelling and spreading around the world.

The team concluded that the negative reports originated from four major sources. The composition of the first group was not a surprise to anyone. It consisted of unsatisfied users who recorded poor performance utilizing *Accomplish*. The second consisted of individuals affiliated to religious organizations which espoused orthodox or fundamentalist viewpoints. The opposition of this group was not surprising either, but the number and range of groups that had become alarmed by the success of *Accomplish* seemed remarkable and the vehemence of their opposition was difficult to rationalize. Concern increased when Levin reported evidence that the activities of some of these groups seemed to be coordinated, a surprising finding in view of the fact that many of them normally spent most of their time and energy fighting each other. The third group consisted of faculty members of university and college departments, research institutions and journals in different academic fields, mostly related to business management and economics. A small number also originated from people in the fields of physics, biology, mathematics, philosophy and the history of science. The fourth group consisted of apparently isolated individuals whose attacks included a very broad spectrum of accusations. The tone of these complaints could best be described as hostile.

At first the team thought to dismiss this fourth group as fringe fanatics who enjoy spreading conspiracy theories and shooting down every new social innovation. But additional analysis proved that this view was naïve. The most noteworthy characteristic of this group was that although the individuals claimed to be angry users working in companies, universities, hospitals and many other reputable institutions around the country, about 70 percent of the messages lodged by them emanated from about a dozen IP addresses around the world. Two of those addresses could be easily traced back to large US-based software houses.¹ The rest were more difficult to identify. Apart from one originating in Atlanta, the others came from varied overseas locations including Iran, Israel, Italy, Pakistan and UK. Three others were proving very difficult to trace back to any specific physical location at all. Levin proposed to enlist aid from Howard and Mossad to track down the missing addresses.

Levin summarized his conclusions: "The Group One complaints can only be addressed by eliminating whatever flaws account for the failure of the poor performers. At least some of the attacks launched by Groups Two and Four may be centrally orchestrated or at least closely coordinated. It is disconcerting to discover that apparently disparate groups find *Accomplish* a rallying point for cooperation. The samples of negative reports included in the appendix should convince everyone here that the opposition of these groups is premeditated and intended to undermine our market position and public credibility before they get firmly established. Group Three, the academics, will require in-depth discipline-wise analysis. I recommend that a portion of the funds coming from Choi be redirected for this purpose. At the same time, I suggest we continue the university research projects already launched and try to build on our positive relationship with these institutions as a counter-weight to the resistance coming from elsewhere in academia."

At the end of the meeting Vinay mentioned that MAI was receiving a large number of invitations to speak at high-level conferences. He pointed out that this was an excellent means to clear the air on a number of issues, so he requested all senior staff to accept invitations to speak publicly. He had accepted speaking engagements at several national and international management conferences. Vinay suggested that Anya accept the invitation she recently received from the Association for the Advancement of Artificial Intelligence, as well as for meetings being organized by associations of engineers and mathematicians. As Chief Technology Officer, Ray agreed to accept at least three invitations a month to address national and international groups.

¹ The names of these firms cannot be disclosed at this time due to on-going litigation.

In spite of efforts such as these, controversy regarding *Accomplish* did not subside as they had hoped. Vinay's experience was indicative. At an international conference in London, he presented three well-documented case studies based on the application of AIS⁷ by MAI clients. The data demonstrated a remarkable 300-400 percent average rise in performance above historical levels for these companies. The presentation was vigorously attacked on purely conceptual grounds by several management consultants from leading international firms, who dismissed the findings without even contesting the facts. Vinay said it reminded him of the eminent physicist who, when confronted by evidence that the Wright Brothers had flown at Kitty Hawk, simply ignored the report and presented mathematical proof that manned-flight was a scientific impossibility. Vinay's efforts to present statistical data to demonstrate the success rates reported by some users of *Accomplish* were similarly dismissed with statements such as 'Management is an art, not a science, and can never be reduced to mathematical expressions.' Regardless of how much evidence he presented, even when it included written testimony by MAI's clients, it was rejected by both practicing management consultants as well as theorists. Facts were disputed or simply ignored unless they corresponded with the prevailing thought of the day. The only favorable response came from business practitioners, entrepreneurs, CEOs and other senior executives of corporations who seemed eager to learn more and test the software for themselves. As a result, demand for AIS⁸ grew rapidly, even while its reputation and theoretical basis were subject to scathing attack.

Anya and Ray did not fare much better than Vinay. After some initial enthusiasm among the AI community regarding the prospect of rendering human events and psychological variables mathematically, the very notion that there were laws of life other than the theorems of physics and biochemistry was disputed, belittled and summarily rejected. Here too, evidence that *Accomplish* users achieved far higher performance on a range of tasks under a wide variety of conditions was challenged as subjective or questioned on methodological grounds. No one seemed interested to engage in a straight-on discussion to consider theoretically if what MAI had done was possible. They operated on an *a priori* assumption that it was not and sought ways to explain away or discredit all the evidence the company presented.

The only redeeming factor in these experiences was that neither the AI experts nor the management theorists seemed to be engaged in any conspiracy to discredit MAI and its products. Most of them genuinely believed that what the company reported was impossible. They were unwilling to even examine the evidence. They were intellectually challenged and provoked to defend their established beliefs, but they were not actively campaigning to destroy a perceived enemy—not yet anyway.

A week later, Levin came back to the group with some additional fragments of information. Mossad had managed to identify the source of the attacks emanating from Israel and Iran. Both were generated by members of extreme religious fundamentalist groups. A careful analysis revealed that the content and timing of the attacks by both groups were very similar. In addition there was some evidence of actual email communication between the groups. Mossad was so puzzled by this remarkable finding that they assigned a team of their own to study the implications. The UK attacks were traced back to Ulster, but the source had not yet been identified. Meanwhile Bill had asked MAI's lawyers to contact the two US-based software companies to inform them that complaints originating from their IP addresses could make the companies legally responsible for the consequences. Almost immediately, the attacks from both sources ceased, though it was not clear whether they had simply been displaced to other locations.

For a while the subject of the attacks seemed to dominate the consciousness of senior management at MAI and interfere with efforts to develop the product and grow the company. Almost every management team meeting began with an update on the latest rumors or complaints, responses to the company's efforts to educate the public and speculation regarding the sources and motives of the attackers. It created an atmosphere of defensiveness, paranoia and depression which gradually eroded the confidence and enthusiasm of the whole team and slowed progress on all fronts. The psychological impact of the attacks was sufficient to stall the company's advance and might have succeeded in stopping it altogether, were it not for a passage in the *Archives* which Dan stumbled upon one morning.

Consciousness is power and attention is consciousness. Everything grows by attention, the negative as well as the positive. Giving attention to your problems and your enemies magnifies their power to destroy you.

When Dan read out the passage to the team, Vinay immediately recalled an incident from India's great epic *Ramayana* about Vali, a monkey warrior who had received a boon from the gods that enabled him to acquire half the strength of anyone who dared face him in battle. Together with his own formidable strength and prowess, this boon rendered him invulnerable to frontal attack. Vinay concluded that they would have to find other means than face-to-face combat to defeat the opposition. "Our attention is only

energizing the opposition. We have to find a way, as in the martial arts, of drawing upon the strength of our opponents and turning it in favor.”

As he spoke, Dan thought of a passage from *The Book* that seemed particularly relevant to their situation. He went to his desk and brought the *The Book* back to the dining table where they were sitting. Flipping through the pages, he quickly came to the passage he was looking for and read it out.

During the first phase of evolution, all progress is by conflict between forms. Contact of form with form releases force. Contact of force with force releases consciousness.

He looked up and said, “I agree with Vinay that we have to withdraw our attention from the attacks. But that is not enough. We cannot simply ignore the opposition and sit idly by while it grows. We have to turn the force it is generating to our advantage. We need to draw on the energy of that opposition to enhance our own progress. Instead of fighting the enemy on its grounds and by its rules, we need to take the fight to the real issues. And the real issues are theoretical. Without challenging the merits of established theory or revealing its inadequacies, the establishment will never accept the validity of our accomplishments. But before we can do that, we have to discover and eliminate the basic defects in *Accomplish*. That must become everyone’s first priority.” The team resolved to turn the opposition to their advantage. While there was no immediate impact on the intensity of the attacks, this resolution did change attitudes within MAI and gradually the preoccupation with the opposition receded. Ultimately, it was this change in perspective that led them to the greatest conceptual breakthrough of them all.

107. Nine Levels

Human personality is a complex mass of mental, nervous and physical habits held together by a few ruling ideas, desires and associations...

The Book

All action, no matter how simple or how small, carries the stamp of a person's consciousness. The whole personality is revealed in even the smallest act to those who have the knowledge to perceive it.

Archives

A sense of frustration continued to pervade the *Accomplish* project team over its inability to account for the wide disparities in user performance with the product. Then one morning Levin stumbled on a possible explanation. "Suppose the problem is not with the software at all," Levin postulated. "Suppose it is with the people who used it. Suppose *Accomplish* has been designed in a manner to make it usable by some people and not others. Unlike previous versions of the AIS, we have tried to fully integrate the software with the user, to design it as an extension and magnifier of human consciousness, rather than as an independent, stand-alone source of expertise. Perhaps in doing so we have designed *Accomplish* in a manner better suited to some users than others. Perhaps we have created a product suited to our own consciousness."

"If that is the case," Dan replied, "then instead of trying to explain the results in terms of differences in the type of work each user is doing with *Accomplish*, we should have been looking for differences in the types of users themselves. If you are right, we should be able to identify some characteristics of those who report high performance with *Accomplish* that distinguishes them from those who have not been able to use it effectively."

Anya analyzed the information they had on very high and very low performers. She analyzed the performance of one thousand users and found that the data naturally fell into three distinct groups. Regardless of the methodology she applied, she was unable to account for the differences in the performance of these three groups in terms of differences in age, sex, occupation, income level, education, IQ, nationality, religion, location, personal interests, beliefs, social grouping, Jungian or Myers-Briggs personality type.

Then she decided to use a larger sample. So she reran the tests with data generated by ten thousand users. Rather than clarifying the issue, it revealed a greater level of complexity. The larger sample broke up into nine statistically-distinct groups of users. Once again she could not find any correlation between performance and the standard variables applied to group users. Finally she repeated the test a third time, to be sure there was no methodological flaw. She ran the entire database, consisting of more than ninety thousand users. This time she ended up with eighteen distinct user groups. Totally baffled and frustrated, she spent the rest of the night on her office couch.

She did find some differences in performance that correlated with differences in personality, but they did not conform to any traditional typology. In particular, she noted that two distinctly different groups of users seemed to be very successful using *Accomplish*, though the two groups appeared to have relatively little in common. One group, which Anya referred to for convenience as the Engineers, consisted of people who had strong analytic backgrounds and worked in occupations that required a highly systematic approach to work and problem solving, such as mathematicians, physicists, logistics specialists, software programmers, corporate planners. The other high scoring group had a very different profile. Few had completed college. They tended to be working in diverse occupations that required a high level of physical skill, dexterity and precision, that included tool and die makers, nurses, pharmacologists, electronic technicians, pilots, martial arts specialists, gymnasts and, in one case, a race car driver. These results dramatically confirmed Levin's hunch that user personality was a major factor in explaining the differences in beta test scores, but it was not clear what these two groups had in common or what distinguished them from those users who were unsatisfied with *Accomplish*. Clearly much more work was required to decipher the significance of the results.

In order to isolate the critical factors, the research team submitted the user profiles for analysis according to the personality dimensions incorporated in AIS⁷. Simultaneously it sent the data to two psychological testing services for analysis by a battery of well-known psychological tests designed to categorize individuals according to one or more of classifications of psychological type. Inexplicably, each of the tests successfully isolated one of the groups from the others. One was useful for identifying highest achievers but could not distinguish the above average, average and low achievers from one another. Another test successfully isolated low performers, but could not distinguish any other grouping. These findings clashed with the prevailing theory regarding psychological types. None of the testing services or consulting psychologists could account for the results.

Frustrated with this approach, Dan and Levin retreated to the Cloister in search of a different approach. His eyes stinging and tearing from long hours staring at the small print, his mind too packed with ideas to concentrate on what he read, Dan blinked as he passed over the short simply-worded sentences and went back to reread the passage in an effort to register more of its meaning.

It is not energy, skill, opinion, attitude or character, either singly or in combination, that ultimately determines the results of action. It is consciousness. As is the consciousness, so is the result.

He read the words aloud so that Levin would hear. "As is the consciousness, so is the result," he repeated, then continued speaking his thoughts out loud, in the hope that his tired brain would comprehend more from its own spoken word than from the words on the page or silently passing through his mind. "It sounds simple enough, but what does it mean? What does *The Book* mean by consciousness? To be conscious is to be aware, attentive, alert, observant, perceptive, cognizant, and a long list of other synonyms. Those were all important attributes, but were they really the ultimate determinant? You know, Kurt, this word has been bothering me for a long time. Every time I read it in *The Book*, I have the feeling that I am missing something. The usage always makes sense, but it never seems to fully explain itself. Myriad references to consciousness flashed before his mind in quick succession. "Life evolves through consciousness... Consciousness is power... Nine levels of consciousness... All creation is by and out of consciousness... Consciousness is the creator..."

Suddenly Dan stopped in the middle of a thought and fell silent for a few moments. He raised his hand to his forehead and rubbed it, then he smiled and shook his head back and forth with a sense of disbelief. "D-6! The missing key we are looking for must be D-6. How could we have forgotten it?"

Levin sat watching Dan with a puzzled look on his face. "Forgotten what, Dan?"

Then Dan explained briefly about the six dimensions of personality they had incorporated in AIS⁷. "Actually, we incorporated only five. D-6 seemed so complex that we decided to omit it for the time being. Even the five dimensional model generated impressive results, enough to make AIS⁷ far more powerful and effective than AIS⁶ had been, so we did not miss it at the time. After that, quite frankly, I just forgot about it."

Six Dimensional Model

D1:Development -- Manners-Behavior-Character-Personality-Individuality
D2:Direction -- Positive vs. Negative
D3:Aspiration -- Energy level, will for achievement
D4:Values -- Quest for higher ideals & perfection
D5:Strength -- Power of personality
D6:Consciousness-- Nine Levels

"I'm familiar with the five dimensions in AIS⁷, Dan" Levin replied, "but what precisely is D-6?"

"That's just it, Kurt. We don't know. I have found only vague references to it in *The Book*—references to three levels of consciousness, each divided into three parts, making nine sub-planes. It also seems to say that each of the nine exists at two levels, which brings the total of eighteen. But it becomes more confusing, because in other places *The Book* speaks of four parts instead of three, each of which can be subdivided into four, and then further divided into two, which brings the total to thirty-two sub-planes. At the time, we were struggling hard to deal with the other dimensions. D-6 seemed to be more complex than the other five put together. It seemed to also be closely linked with the concept of individuality referred to in *The Book*, but the exact relationship was never clear to me. So we put it aside and forgot it. Now it has come back to haunt us!"

Dan and Levin spent the rest of the day reviewing the files of concept notes used for the development AIS⁷ and going back to passages in *The Book* and *Archives* from which the D-6 model had

been derived. The passages were clear in themselves, but they seemed to be incomplete. They identified the planes and sub-planes but said very little about what they were or what distinguished them.

Dan slept late the following morning. When he strolled out of the bedroom into the kitchen, he saw Levin sitting at his desk and concentrating intently on the computer monitor. Without looking up, he said, "I've found something, Dan. A paper on the nine levels and the subdivisions. It is exactly what we were discussing last night. It explains the theoretical basis for the division in detail. But what is even more interesting, it presents a psychological typology based on the model. It's a whole new way of understanding individual differences. And you were right, the whole key seems to be understanding what *The Book* means by the word consciousness."

Late in the evening, Anya walked into the Cloister looking for respite from another long, aggravating day trying to decipher the secret of the poor performers. She found Dan and Levin standing in one corner of the living room staring at a long sheet of paper that was taped on the wall. The paper was marked with squares in black marker pen forming a huge table, two column wide and nine rows long. There were nine squares in all, each filled in with a variety of words and names. As she glanced down the rows, she suddenly recognized her own name in one of the boxes in the fifth row. Her first response was a sense of flattery that they had been thinking of her in her absence. Then she began to look at the other names on the chart. She saw the names of Ray, Vinay, Bill and two dozen other people who worked at MAI, including even Limpia. In addition she read the names of many famous people, including Gorbachev, Churchill, Bill and Hillary Clinton, Jimmy Carter, Colin Powell, Albert Einstein, Bertrand Russell, Bill Gates, Warren Buffett, Ted Turner, Lee Iacocca, Michael Dell, Fred Smith, Sam Walton, General Montgomery, Alan Greenspan, several Nobel laureates in physics, some eminent mathematicians, some Hollywood actors, Tiger Woods and a few others whom she did not know but thought might be professional athletes. Each name was placed in one of the nine rows. A few names appeared in more than one row.

Anya frowned and then inquired in a petulant, suspicious tone, "Why, I'd like to know, am I in the fifth row of column two?" In spite of her best efforts to maintain a straight face, a smile escaped from the corners of her mouth. "How come I am not in row one along with Mr. Einstein? or row three with Greenspan? or even row four with Bill Clinton?"

Dan turned to her and assumed an innocent expression. "Where would you like to be?" he asked. "If you think we are wrong, we can move you."

"How can I answer that question before I understand the significance of the columns and rows?" she replied.

Dan laughed and said, "Then why didn't you ask that question in the first place." Anya and Levin laughed too.

As they were explaining the chart to Anya, Vinay came in and responded just as Anya had. "Row six doesn't sound very complimentary, you guys. How will Anya ever respect me when she knows she is higher on the chart?" Again laughter broke out. When Vinay started asking questions, Levin protested that he had just finished answering the very same points for Anya.

Dan began by explaining what they could surmise regarding *The Book's* use of the word "consciousness". "*The Book* refers to a whole hierarchy of planes of consciousness, which it calls the world stair, beginning with the physical and rising up to the vital, mental and spiritual planes. Although the spiritual is itself divided into many levels, a summary version considers four planes—physical, vital or life, mental and spiritual. For the purposes of normal human typology, only the first three are taken into account. The nine levels represent nine different planes—three mental planes, three vital or life planes, and three physical. Each level also represents a different center of human consciousness. Each plane or center emanates a different vibratory frequency. The lower the plane, the lower the frequency and more tangible the expression of consciousness. The higher the plane and the frequency, the more subtle and rarefied the expression. The lower frequencies are more real, concrete, and tangible because they are perceptible to our senses. The physical plane is dense, heavy, gross and unconscious, which means the consciousness there is submerged or involved rather than self-aware. It is locked into rigid forms and habits, inflexible and resistant to change. It is stubborn and insists on repeating the same thing over and over again, like the electrons rotating in fixed orbits around the nucleus of the atom. But the physical is a seat of great power, and if it can be made conscious, it is capable of the maximum accomplishment. Next is the vital plane, the plane of life. Its characteristic expression is energy, the energy we feel coursing through our nerves. It is the seat of desires, impulses, passions, feelings and emotions. While the physical is rigid, the vital is dynamic.

Anya interrupted. “I still don’t understand why, if I am so mentally brilliant, you did not place me in Level One?” she asked with a pouting expression that evoked a renewed burst of laughter.

Dan replied, “All of us have all nine centers of consciousness, but they are developed to a different extents in each. When we say Vinay is in Six, we only mean that this is the most dominant and characteristic center of his personality. He also has a developed capacity for rational thinking (One), planning (Three), leading people (Four), bold courageous initiative (Five), but his real forte is in effectively and harmoniously interacting with other people. Level One is the pure thinking mind, the mind of the mathematician, and you, Anya, are a mathematician par excellence. But those who know you well do not think of you solely or mainly in intellectual terms. The most characteristic aspect of your personality is the passionate emotion of the lover (Five). You are centrally motivated to act based on what your emotions endorse. Five is the pure center of emotions. To really develop a profile for a person, we would need to know their relative development in all the nine centers as well as the center that is most dominant over the rest.”

Level	Consciousness	Characteristics	Occupation	Person
1 Pure Mind	abstract ideas	thinking or conceptual mind, capacity for abstract thought, mathematics, philosophy, logic.	Mathematics Philosophy Theoretical Physics	Einstein Kant
2 Emotional Mind	human values	mind relating to life and relationships, sentiment, poetry, humanitarian idealism,	High poetry Social science Composer	Wordsworth Keats Nehru
3 Physical Mind	practical ideas mental skills	mind relating to material world and activities, science, technology, planning, organization.	Physical science Engineering Medicine Military general	Eisenhower Rommel Sherlock Holmes Dr. Moriarty
4 Mind of the Vital	insight into life & people	life directed by the mind, leadership of people,	Entrepreneur Novelist Politician	Gorbachev Martin L. King Henry V
5 Pure Vital	passion	emotional center, courage,	Lover King	
6 Physical of the Vital	social skills	life related to the material world and other people, interchange, transaction, negotiation	Salesman Tradesman	
7 Mind of the Physical	physical skills	mental control over physical movements of the body and handling of physical objects	Craftsman Technician Agriculture	
8 Vital of the Physical	cravings urges	physical passions and cravings, possessiveness, territoriality	Warrior	
9 Pure Physical	sensations	physical energy and movement	Laborer	

Sometime later Ray joined the discussion and they had to explain the model all over again. Ray asked the same questions Anya and Vinay had raised before him, evoking peals of laughter. “I still cannot understand how you can classify Sherlock Holmes and Professor Moriarty at the same level,” Ray said. “One is an arch criminal, the other a great upholder of law and justice.”

“As brilliant as they both are, they both deal in facts, not concepts. They are both masters of perceiving and understanding the significance of physical facts and possibilities,” Dan replied. “That’s why we place them both in Level 3. But remember, the Nine Levels only relate to the sixth dimension of human personality, consciousness. We have already incorporated the other five dimensions in AIS⁷. These two are well-formed characters with a marked element of individuality and originality (D1). They both have high levels of energy and aspiration (D3), similar levels of strength of personality (D5) and similar levels of consciousness (D6). But they are worlds apart in terms of positive vs. negative direction (D2) and values (D4). Holmes is honest, truthful and self-sacrificing. Moriarty is false, selfish, and evil. According to *The Book*, in order to accurately assess any personality, you have to look at all six dimensions.”

The discussion continued for several more hours. As they progressed they added additional elements to the chart until the character of each of the nine centers was well defined and they were able to agree upon the type of person who typified each of the levels.

They then reviewed the data on client users. It immediately became evident that the highest performing groups came from levels three and seven. Anya was the first to perceive the reason. “Level three is the physical mind, which expresses as the capacity to analyze and mentally organize physical activities as computer programmers do. Level seven is the mind in the physical, which represents the capacity to direct one’s physical energies skillfully under the direction of mind as skilled technicians do. It now seems obvious that the current design of *Accomplish* is biased toward these types because these are the centers of consciousness most developed in people working at MAI. If we want to make *Accomplish* as suitable for other types of users, we are going to have to find ways to modify it to suit their way of knowing and working.”

There was a sense of exhilaration in the room when the five of them realized they may finally have cracked the mystery of the poor performers. They set out an action plan to check their hypothesis against all the available user data and begin testing alternative user-interface models for *Accomplish*.

In early October Ray walked into the Cloister one morning at 8:30 am while Dan was reading from *The Book* and sank into one of the soft chairs. Pleasantly surprised, Dan looked up and smiled. It seemed like months since Ray had dropped in unannounced. Along with the bright, clear intelligence he admired so much, he read tension and exhaustion on Ray's face. Without a word, Dan went into the kitchen and came back with a cup of Indonesian milk tea, one of Ray's favorites. They sat quietly for several minutes. They used to confide in each other about everything. In recent months they never even seemed to meet, except over a conference table or a crisis.

Dan trusted Ray implicitly and he thought it was mutual. Ray did not have Levin's worldly wisdom, Anya's brilliance or Vinay's insight into character, but he possessed an extraordinary capacity for clear and objective judgment, which Dan had learned to trust implicitly, as long as it was not connected with Ray's own personal, family affairs.

They began to reflect back on the events of the year. In January it looked like they were threatened simultaneously by the US Attorney General's investigation and the take-over threat by Oppenhauer. Then suddenly, both had fallen silent. After the unannounced search of the MAI premises, there had been almost no initiative by the government to take the case further. Neither Bill nor Levin had been able to find out who was behind the initiative, but when the government appeared to lose interest in MAI, the company gradually put the entire frightening episode behind them. The head-on collision with Oppenhauer also had been averted, though the threat had not completely disappeared. Oppenhauer had eventually succeeded in increasing his stake in MAI to 38 percent, but could not make headway beyond that level.

Although their minds had been focused on business for the past six months, the disturbing events of January had never been far from mind. Dan had not returned to his apartment, except to pick up things he needed now and then. The threat or at least the fear of a threat was ever-present. Ray referred back to the last attempted break-in at Dan's apartment and began speculating again about who could have been behind the break-in. Dan then confided in Ray about the call from Thompson to Levin which he had inadvertently intercepted. Ray stared at Dan, as if expecting him to continue, but his narrative ended on that inexplicable note, like a train track ending in the middle of an incomplete suspension bridge hanging over a roaring river a thousand feet below. Dan saw Ray's mind at work and sat back to give him time to process the information. Slowly the implications sank in. Why would Levin be in contact with Thompson? What could he possibly have meant when he referred to 'the package', if it were not a reference to *The Book*? Ray searched the narrative for hidden meaning, for alternative pathways leading to different conclusions, but could think of none. Every path led to the same disastrous conclusion. Levin had not mentioned Thompson's name in months. According to what Levin had told them, Thompson had been taken completely off matters relating to MAI a year ago. Levin had led them to believe he himself was on leave from Mossad and no longer in official communication with the State Department. Why would he send Thompson an SMS? If he wanted to renew the contact, get some information or ask for some assistance, it would be far more natural to call or email. And from what Thompson said when Dan answered Levin's phone, it sounded as if the SMS were part of an on-going communication between the two. It was a clear message meant for someone who expected information and knew precisely what 'the package' referred to. What possible reason could Levin have for doing these things and keeping Dan and himself in the dark?

"It doesn't add up," Ray finally replied. "Actually, it does add up, but I don't like the results that it adds up to. I like Levin. I trust him. I believe he is really here to help us. But this information does not compute. The implications are too scary. It naturally leads to the question whether Levin has been honest with us from the very beginning about what brought him here and why he is staying. I don't want to let my mind even explore the possibilities in that direction. It's too frightening. But what is the alternative explanation?"

Dan saw the increasing anxiety on Ray's face. He felt sorry for having opened his mouth. Ray had only given expression to thoughts that were in his own mind, but which he had refused to examine. Now that they had been spoken, the whole atmosphere in the room seemed darker. A mild sense of depression seeped up unnoticed, sapping their energy and making even thought difficult.

Just then the door opened and Levin walked in. He looked surprised to find Ray sitting there and immediately perceived the worry written on his face. He saw Dan trying to unsuccessfully conceal his own anxiety with a welcoming smile that failed to warm. The very air seemed to be oppressed. Recalling why he had come, Levin brushed his impressions aside and told them of a phone call he had just received from Luis Gavoche. Gavoche informed him that his own company had just discovered a serious security breach the

night before. Despite state-of-the-art military level security protocols, Oxford's mainframe had been hacked. It was too early to determine how long ago the breach had occurred or to assess the extent of the damage, but it was quite possible that the hackers had gained access to security codes protecting the facilities of Gavoché's clients. In view of recent events, when Luis learned of the extraordinary breach, his first thought was that the real target might be MAI rather than his own company. That meant MAI could be vulnerable to either an electronic or physical intrusion. He offered to provide additional on-site security guards and advised that all electronic security codes be changed immediately. His last words to Levin were that very few organizations in the world had the technological capability to pierce through his company's security protocols. Whoever they were, the threat they posed had to be taken very seriously.

When Levin related the news, he was surprised to observe the degree of disturbance visible on Dan's face. He knew Ray was prone to worry, but he had become accustomed to seeing Dan accept each new crisis with a calm, quiet demeanor, occasionally even with a smile or laughter. Luis' news had deeply affected him very deeply. Dan studied Levin's face as if hunting for some hidden meaning. Then he said, "This thing never seems to end. Just one threat after another. And we still have no idea who is responsible. Already I am feeling like a prisoner in my own company, unable to even go home at night. Now even MAI is under siege. There must be some way to stop this, Kurt. After all these break-in attempts, we know nothing. We do not know who is after *The Book* or why. Until now I have simply accepted the fact that someone else values *The Book* as much or more than I do. But that is not good enough anymore. We've got to find out who and why. At first I assumed these people were after the algorithms for AIS. That is understandable. When it became clear that they were also after *The Book*, not just AIS, I assumed it was because they had correctly deduced that it was the source of the knowledge incorporated in AIS. Now I am not so sure. Perhaps they have another motive. Perhaps they know something about *The Book* that we don't. These people are not motivated by mere idle curiosity in metaphysics or the normal ambition of money-hungry business people. They seem to be almost desperate to get their hands on *The Book*. Why?"

An hour later, Anya called Dan from downstairs. She had rushed to MAI when Levin informed her of the news from Gavoché. She ran routine data integrity checks. She could not find any sign of data corruption or data theft. They all breathed a sigh of relief and hoped that further tests did not uncover any anomaly. Meanwhile Gavoché had sent over his top engineer to do a thorough check and change the security protocols to minimize further risk until the hackers' methods could be studied and permanent measures put in place to prevent a repetition.

Over the next few days the sense of alarm gradually diminished at MAI. The partners had become so accustomed to unexpected attacks of one type or another that the slightest rumor or hint of trouble made adrenalin levels peak and they found it difficult to wind down to normal levels even after the threat had passed, like the sudden near accident in Washington that kept replaying in the mind and nerves of those involved for weeks after it had been averted.

After a few moments, Ray spoke for the first time since Levin had entered the room. "Why don't we consult an expert? Why not show *The Book* to some one who may understand what it is and where it came from. Perhaps if we knew more about *The Book*, we would be in a better position to understand those who are in pursuit of it."

Dan sat quietly for some time and then suggested that they consult Joseph Stearne at Cal. It had been nearly seven years since they had seen Stearne at the millennium AI conference in Fort Lauderdale. His name had come up in their conversation on numerous occasions and they had read all his published books and papers. If anything, Stearne had become even more famous than he had been in 2000 and was billed as a top notch academic attraction wherever he agreed to speak. That was one of the reasons they had hesitated to approach him without serious justification. At least three times they had considered consulting him on a particularly difficult conceptual issue, but on each of these occasions Stearne had been away from Cal attending conferences, receiving international awards or delivering special lectures in Europe or North America. Levin was the only one of the five who had ever had a personal discussion with Stearne, so he volunteered to contact the professor and see if they could arrange a meeting.

109. Theon

That afternoon Dan, Ray, Levin and one of Gavoche's security guards drove up to Stearne's estate house perched on the side of a steep hill about a half mile from Tilden Park. A bulky Hispanic groundskeeper named Juan led them up to the door and rang the bell, then returned to his work. Stearne met them at the door and led them into a large living room with broad picture windows overlooking San Francisco Bay. Through the open door at the other end of the room, Dan glanced into a large private library with ceiling high oak shelves filled with thousands of volumes.

Stearne was a slim, energetic, gray-haired man in his early 70s with a large forehead and bright, curious eyes. "I've been watching you guys," he said as they settled into soft sofa chairs. "Not literally, of course, but from afar. I must admit, I never thought you would come so far in your work at MAI. From what I have read you are really at the leading edge. So naturally I could not pass up an opportunity to hear about it first hand. But frankly, I am surprised you think there is anything I can tell you. My knowledge of AI is strictly theoretical, whereas AIS is blazing a new trail in terms of practical implementation." As he spoke, a portly Hispanic woman who Stearne introduced as Rosa came in with a tray of hot and cold beverages and light refreshments.

"Actually, AIS is not exactly what brought us here," Dan said.

Stearne looked surprised and disappointed, but still curious. "Oh! Then what is?"

"This," Dan replied as he reached into his briefcase, removed *The Book* and handed it to Stearne.

"What is it?" Stearne asked as he turned over the volume in his hand, noticed the absence of a title and flipped through the first few pages. "No title, no author, no publisher, no date. I am afraid I do not understand." He looked up and around at his three visitors with a questioning expression on his face. Then he quickly glanced down at *The Book* again, as if he had forgotten something, and flipped through it again. He said nothing, but Dan had the distinct feeling that something had occurred to Stearne which he was not saying. "What can you tell me about this book?" Stearne asked.

Dan replied by asking Stearne whether he was willing to consider what they were going to tell him as strictly confidential. When he nodded his assent, Dan related the history of *The Book* from the time he found it at Moe's and the relationship between *The Book* and AIS. He then narrated the events of the past six months in which multiple attempts had been made to steal the book, including the most recent instances.

When Dan completed his narrative, Stearne remained quiet for several minutes contemplating what he had heard. "That is quite a remarkable story, Dan. It sounds like a spy thriller. From what you have said, this book has played a vital role in the work of MAI. Of course, I have heard rumors on the grapevine that AIS was inspired by some sort of mystical philosophy, but I must admit I never took them seriously. Is there anything else you can tell me?"

Dan told Stearne how they had discovered the *Archives* and the *Messages* on the Internet, which appeared to be written by someone very familiar with the contents of *The Book*. Reluctantly, he also described how the Internet pages which they located apparently vanished as soon as they were downloaded. Stearne began to laugh as if he dismissed the whole thing as a joke. He looked at each of them in turn to see if they were serious, then his smile vanished and he became very attentive. Dan saw disbelief writ large on Stearne's face. These revelations had awakened the skeptic in him. Dan thought it best not to mention the fact that the pages disappeared when he tried to photocopy them. Then Levin briefly spoke about the US government's interest in MAI and AIS, without mentioning any individual names or departments. Finally Dan asked Stearne if there was anything he could tell them about the book.

Stearne looked down again and leafed through the pages, then read several pages. About twenty minutes later, he looked up and replied. "The English is superb. It's obviously not written by an American and the idiom is too perfectly English to be a translation. Judging by the language, I would guess it is about hundred years old, probably written by an Englishman. As for the content, I will need more time to examine it in detail. If you leave *The Book* with me, I will be happy to study it and give you my personal opinion."

"I am afraid we cannot do that, professor," Dan replied. "We have already risked a lot by removing it from the security of our office. We could not subject you to the risks that we have been subjected to, even if you were willing to undergo them."

Stearne nodded, as if he had anticipated that would be the response. "Well, then gentlemen, if you would care to make yourselves comfortable, I will take an hour or so to examine the text more closely and tell you what I think. If you run out of refreshments, feel free to ask Rosa for anything you wish."

Stearne stood up, walked into his library and sat down at a large oak desk visible through the open door. As he read, he took notes. About an hour later, he put down the book, stood up and walked over to the far wall. Suddenly he began to rise into the air. It took Ray a moment to realize that Stearne was standing on a metal elevator platform which lifted him so that he could reach the topmost shelves in the library which appeared to be at least twelve feet off the ground. The platform then moved laterally to the right about four feet before stopping. Stearne reached out and grasped two volumes. Then he moved further right a few feet, stopped again and removed three more books. He returned to floor level and carried the books over to the desk, sat down and began searching through them one after the other. He read for another hour without once looking up or speaking a word to his guests. Finally, he stood up and returned to the living room with *The Book* and two other volumes under his arm.

“I apologize for leaving you so long without company. I confess that your story sounded so fantastic that I was almost ready to dismiss the book as a hoax without even examining it. But whatever this book is, it is certainly no hoax. It is a genuine article. The question remains, what article?”

“Don’t you have any idea?” Ray asked.

Stearne nodded his head. “Yes, I have several ideas, but I would not stake my reputation on any of them being correct. I am afraid this book lies outside my field of expertise. Many of the ideas in the book are consonant with ancient Vedic conceptions that precede Buddhism and Shankara’s illusionism in India. It depicts a relationship between spirit and matter that is fully integrated, whereas later they become juxtaposed in mutual opposition. But clearly this is a modern work by an original mind and not a rehash of any ancient teaching. Beyond that, all I can do is tell you what I have heard and perhaps refer you to some other people who are more qualified to pass judgment on this particular article.”

Stearne paused and looked around at his guests waiting for their permission to proceed. “Have any of you ever heard the name Max Theon?” All three shook their heads. “I’m not surprised,” Stearne continued. “Theon was a Polish Jew born in 1848, a year in which liberal reform and radical politics acquired a revolutionary fervor. It became known as the Year of Revolutions. In January of that year, the free African state of Liberia was founded as a refuge for freed black slaves returning from America; the California gold rush began and Henry Thoreau proclaimed his doctrine of Civil Disobedience. The following month, the Mexican-American war ended, by which America gained virtually the entire south-western part of the modern day USA; Mazzini launched the revolution in Rome that led to the founding of the Second Roman Republic; on February 21, Marx published *The Communist Manifesto*; and the next day Paris revolted against King Louis Philippe, leading to the founding of the Second Republic. In March, revolution broke out in Hungary and Sweden and the King of Bavaria was forced to abdicate. The Swiss adopted a revolutionary new constitution. Revolutions swept almost all the countries of Europe at that time and reached as far as Brazil. Well, I will spare you the history lesson. I think you get the idea. Theon was born at a time of radical revolution and that revolutionary spirit seemed to preside over all the events in his life.

“Little is known about Theon’s life. He dedicated himself to a study of the mysteries, published on occult cosmology and cosmic philosophy, and became an accomplished practical occultist. In 1870 he founded The Hermetic Brotherhood of Luxor in England, the first of a plethora to secret societies teaching practical occultism derived from the ancient mysteries of Egypt, Chaldea, Greek Gnosticism, the Jewish Kabbalah and Vedic India. He became an instructor to Madame Blavatsky, who founded the Theosophical Society five years later; to Mirra Alfassa, later known as The Mother; and to many others. In 1885 he married Alma Theon, who was known as a very powerful occultist in her own right. They lived in Paris for a while before acquiring a large estate in a suburb of Tlemcen, Algeria, where he remained until his death in 1927. There are many fascinating stories about the Theons, but I won’t digress.”

“And you think Theon may have been the author of *The Book*?” Ray asked.

Stearne shook his head back and forth vigorously. “Oh, no, certainly not. That is not what I am getting at. The English is far too good and the thought is significantly more evolved and sophisticated. I do believe that elements of Theon’s cosmology are reflected in this book, which helps us date its origin. But frankly, I am not sure I can tell you very much about the book’s actual authorship. What I might be able to do is indicate why there are people desperately in search of it and perhaps even who those people who may be.”

With these last words, Stearne succeeded in gaining the undivided attention of his three guests, and he continued. “As I said, Theon combined the characteristics of a brilliant cosmologist and a practical occultist. He supported all movements of human emancipation, national or social, reflecting his connection with the values of 1848. He believed in higher mystical truth, but his real interest was not in ideas. It was in power. He believed that mystical power, the power of higher knowledge, could acquire mastery in life; that

is, the power of mastery over all the ills that oppress humanity—ignorance, pain, suffering, even death. It is even said that he was in search for what he called the mantra of life, a sacred knowledge with ultimate power over death. But let us not go there. A central tenet of what you call *The Book*, which sets it apart from most of mainstream Eastern and Western mysticism, is the essential unity between the spiritual and material worlds. I do not mean it in the sense in which modern materialism tries to reduce everything to material processes, but in the sense that both matter and spirit are manifestations of a more ultimate and absolute reality in which they can be fully reconciled. There is a lot about Theon's teachings that does not really concern you. The important thing is that he believed in the power of this higher knowledge to accomplish anything in life, even to transform life as we know it into something more conscious, more perfect, more divine.

“But there is one point on which Theon and the author of *The Book* have markedly different views. Theon saw the power of knowledge as something that could be utilized by an individual for his own personal accomplishment, whereas *The Book* emphatically states that the power can only be effectively harnessed for universal good. Put succinctly, Theon's view was personal and even egoistic, *The Book's* impersonal and selfless. Theon was known to be intensely ambitious to acquire the power of that occult knowledge so that he could wield it personally. You could say he was an occult version of Napoleon. He believed in the divinization of the extraordinary individual. The author of *The Book* seems dedicated to widely disseminating that knowledge for the general evolution of humanity and the ultimate divinization of the human race. That is another reason I am quite positive that Theon is not the author.”

110. Short History of the Book

“Let me get back to the conspiracy theory. Now you need to understand that just as the middle of the nineteenth century was a period of radical revolution, the turn of the twentieth was a period in which fascination with the mystical and occult spawned the birth of myriad prophets, secret societies and teachings - prophets such as Aleister Crowley, Blavatsky and Gurdjieff, societies such as The Order of Thelema, the Ordo Templi Orientis, Argenteum Astrum - the Order of the Silver Star, Ecclesia Gnostica Catholica, the Thelemic Order of the Golden Dawn, the Holy Order Of Ra-Hoor-Khuit, The Open Source Order of the Golden Dawn, The Order of Thelemic Knights, the Illuminates of Thanateros, the Temple of Set, Fraternitas Saturni, Horus-Maat Lodge, The Hawk and Jackal Covens, and so on.

“Most of these organizations have since disappeared, but many of them in turn gave birth to new organizations, while others morphed into societies with a more respectable public face, still harboring their mystical aspirations and retaining allegiance to their core beliefs. A number of these organizations took root among various groups in the USA. There were Catholic offshoots, Christian fundamentalist offshoots, and also societies founded by wealthy conservative business people in New England who claimed to trace their beginnings back to the time before American Independence. It’s this latter category that I think is most worthy of your attention.

“Shortly after World War I interest in the works of Max Theon suddenly acquired a new intensity. Rumors spread that a book had been discovered in St. Petersburg in 1917, just before the outbreak of the Russian Revolution, which explained how higher, mystical knowledge could be used for accomplishment in any field of human pursuit—politics, economics, business, art, music, literature, science, medicine, etc. According to the rumor, the book carried no title, no authorship and only one copy had been printed. Many believed that Theon was the author. Some claimed that he wrote it in Tlemcen and it had been stolen from him by a visitor and carried from there to Russia. Gurdjieff was in St. Petersburg at that time and there are some references in his writings which are thought to originate from the same book.

“Myriad stories spread regarding the origin, contents and fate of the book. In the early 1920s, rumors surfaced that the book was in New York in the possession of a group of wealthy Wall Street financiers connected in some way with the US Federal Reserve. These people came to be known as the Round Table Group and purportedly included Rothschild, Morgan, Rockefeller, Warburg, Drexel, Lazard, Lehman, Harriman and others. Some of these rumors even attributed the economic boom of the 1920s to the book, saying that a few private investors utilized the knowledge of the book to multiply money and usher in an era of unprecedented prosperity in America. Eventually, their personal greed overtook them and their desire to retain control of disproportionate wealth precipitated the Great Crash of 1929 and the Great Depression. Rumors persist that the Group still exists.

“Much of this is probably speculation or conjecture, one of the hundreds of conspiracy theories that arise to explain every unpleasant occurrence. But there is some evidence to support the existence of the book itself. We have written testimony by a Russian émigré who says he saw an unbound set of twenty eight chapters carrying the title *Volume I* in St. Petersburg in 1917. Your copy of the book has three volumes of which the first has twenty eight chapters and the other two another twenty eight. He might have seen an unbound copy of those first twenty eight chapters. An English officer of the British Raj claimed he saw a leather-bound copy of the book in Calcutta in 1919, the first appearance of all three volumes. A French aristocrat claimed to have seen a similar volume in New York in 1921, but refused to disclose where or how he had seen it. There are also reports over the decades from as far afield as Hungary, Czechoslovakia, Argentina, and Shanghai.” Stearne paused and Dan noticed a sense of hesitation as if he were debating whether to hold something back. “As a matter of fact—get ready for this—the book was reported to have also surfaced in Berkeley about the time of the Free Speech Movement in 1964.”

“Excuse me, professor,” Dan interrupted. “How do we know that all these people were referring to the same book? How do we know it is not just a product of fancy or imagination?”

Stearne laughed mildly, “Well, the truth is that we do not. The only irrefutable evidence we have to go on is the fact that there is a real book sitting on this table in front of us at this very moment. All we can say is that what has been written or rumored about the book in the past appears to be consistent with the evidence we have before us. I can assure you that the contents of this book are no hoax or product of human fancy. It would have taken one of the greatest minds of all time to formulate the thoughts I read this afternoon and the linguistic beauty of the prose is beyond anything I have ever come across in more than fifty years of classical research. Philosophy is my profession, but linguistics is my first love; so I can tell you both as a lover of literature and a scholar of language, this author’s writing is elegant and expressive beyond compare.”

Levin intervened. "Sorry for interrupting you again, professor. But I still do not see any connection between what you have said and the people who might be pursuing the book or AIS."

"Let me be clear. What I am saying is simply a wild guess, a distant possibility, but one I do not think you should dismiss without consideration. Even today there are groups, descendants and offshoots of the secret societies of old, that seek a knowledge for mastery and control. Some of these groups with political aspirations were believed to be behind the rise of Nazism in Germany in the 1930s as well as the twentieth century revolutions in South America. Others are associated with the established Church or in opposition to it. Still others have long been associated with some of the wealthiest, most conservative families in America, which are sometimes referred to as the power behind the throne in American politics. These groups had diverse objectives—totalitarian domination, social revolution, political or money power, etc. But they all had one thing in common—they believed in the power of the knowledge in the book to achieve their ends. It may well be that one such group or even more than one has discovered that this book is in your possession. If so, they may be willing to go to almost any length to procure it."

"But how could they possibly know that?" Ray asked, more as a question to himself and his colleagues than to Stearne. He turned first to Dan and then to Levin. Dan also turned to study Levin's face. Perceiving the searching intensity in their gaze, Levin turned back to Stearne and asked whether there was anything else he could tell them that might give them a lead regarding which of these groups was in pursuit.

Stearne thought for a few minutes. "Give me some time and I will try to narrow the list. This is not my field of expertise, but I know a couple of professors on the East Coast who have made the modern western mysteries tradition and secret societies their specialization. Let me see what I can find out." He paused for another moment, turned to Dan and said, "You mentioned something about disappearing Internet pages. From the way you explained it, I got the impression that you regarded this as some type of mystical or occult phenomenon. Now, I am not an expert on the technology of the Internet, but isn't it just possible that someone has been monitoring your activities on the Internet and found some means to shut down sites after you located them? Perhaps they used you to locate the sites, copied the contents and then somehow broke the links or even erased the content from the server where it was hosted. Is that possible?"

Dan and Ray looked at each other in surprise. They realized that they have never even considered such an obvious possibility. But was it really possible technically? They both turned to Levin. Levin smiled slightly and nodded his head. "It would be very difficult, but theoretically it is possible. First, someone would have to have access to all the outgoing data from MAI. That would mean they had infiltrated the security protocols at SBC Communications. Second, they would have to have the capacity to decode that information almost instantaneously. Third, they would have to have similar access to web servers throughout the USA or in other countries where the *Archive* material was hosted. Even if it is technically possible, it would require extraordinary infrastructure. Off hand I cannot think of anyone in the world with that capability, except the US Government."

Dan shook his head vigorously in disagreement. "But Kurt, I saw pages disappearing off the web more than two years before our first contact with the US government. You told us that it was you who had brought AIS and *The Book* to the attention of the US Government, so how could they have been involved back in 2004?" Dan spoke softly and politely, but Levin could sense a probing tension and suspicion behind Dan's calm demeanor. He merely shook his head to signify that he had no answer to Dan's question.

Dan turned back to Stearne. "Professor, since you have raised a possibility that we completely overlooked, I would like to ask you one more thing. I hesitated to mention it before because it sounds so fantastic that I was afraid you might dismiss us at the very start. There is something else I have not told you. Soon after finding *The Book*, I tried to make photocopies of some of the pages for my partners. I found that each time I copied a page, the print on that page began to fade markedly and the more pages I copied, the more dramatically and rapidly the fading occurred. At first I was sure it must be my imagination, but I confirmed it several times and Anya saw the same thing. Once I stopped making copies, the full intensity of the printed impression gradually returned. From then on, I have desisted from all efforts to reproduce *The Book*. That is why I cannot even leave you a photocopy to study."

Dan had half expected Stearne to laugh at his claim or dismiss it as ridiculous. But he did not. Surprisingly, he nodded his head with a knowing smile as if he fully understood and believed what Dan had reported. "Now that is much easier for me to explain than the missing pages on the Internet. Many of the occult traditions we have been speaking of had the power to create the effect you report in order to protect their knowledge from the eyes of the uninitiated. I have heard many versions of it, though none precisely like this. The most common version is the sleep spell. An occult master places a spell on his works so that anyone who tries to read it without his sanction is instantly overcome with sleep and cannot remember anything he has read when he wakes up. I know it sounds incredible, but I have had that experience myself

on more than one occasion. Quite possibly this is another version of the same thing. I do not know whether the pages actually begin to fade when you copy them or whether they only appear to fade because of the occult power that presides over them. It could be either one. It only confirms my view that *The Book* was written by a true master, not just one with intellectual knowledge, but in any case I was already certain of that fact.”

Dan glanced down at his watch and realized that it was past 8 pm. They had been with Stearne for nearly six hours. He apologized for taking so much of the professor’s time and thanked him for the immense help he had provided. They walked toward the front door and just as Stearne came forward to open it, Dan turned to him and said, “Excuse me for asking, professor, but when I first showed you the book, I got the distinct impression that it reminded you of something, as if you may have seen it before. Was I just imagining?”

Stearne nodded. “You are very perceptive, young man. What you say is true. It did faintly remind me of a book which I saw once in Budapest back in 1956. I went there as a graduate student to meet László Kalmár, the distinguished Hungarian pioneer in computational mathematics and computer science. A brilliant man with an incredible mind. That man could solve Rubic’s cubes in his sleep. After the meeting, I walked down to the Danube and saw a huge crowd of people crossing the bridge to the other side and joining with thousands of others on the opposite side of the river. Curious about the cause of such a massive gathering, I followed the crowd. As I crossed the bridge, I could see an enormous swarm of people, mainly placard-carrying youth, encircling the Radio Budapest building. They numbered in the tens of thousands. Suddenly I stumbled over something on the road and fell to one knee. Looking down I saw a brown leather-covered book lying in the road. I picked it up, rose to my feet and searched the crowd around me wondering who might be its owner. But already the crowd had moved a dozen yards further on and I was being pressed relentlessly forward by those behind me. As I walked, I looked down at the book and noted that there was no title or marking of any kind on its cover. I opened it at random and was surprised to find it was written in English. I had just enough time to read the following sentence:

Freedom is the last law and the final consummation.

Suddenly the sound of shooting and gun fire could be heard in the distance. The crowd started to panic. Those at the other end of the bridge turned back and pressed against those who were still trying to cross over. Pandemonium broke out. Crushed from both sides, I was pushed to the ground and nearly trampled. Dropping the book, I managed to rise and retreat from the bridge as thousands of youth came pouring over the bridge. Stopping one youth who was flying past me, I asked in broken Hungarian what was happening. Without slowing his pace, the other youth shouted back, “Revolution!” I felt exhilarated and terrified at the same time, but I knew this was no place for an American. So I rushed back to my hotel, packed, got in the car I had rented in Vienna and followed the road signs back to Austria. It was past midnight when I crossed the border. The following morning, I turned on the radio to Radio Free Europe and heard the first reports of the Hungarian uprising and the entry of Soviet tanks into Budapest. Some twenty years later I first read about Theon and the book of accomplishment. When I read the descriptions, something reminded me of the book I had held momentarily in Budapest.”

“And you think this might be the same book?” Ray asked.

“I know it sounds very unlikely. I don’t clearly remember what that book even looked like. But if you ask my gut feeling, I would have to say it could be the same book.” Stearne accompanied them as they walked out the front door onto the veranda where they found Juan patiently waiting to lead them out the main gate. Then Stearne said, “Now I have a favor to ask. I would like your permission to come to MAI and to study *The Book* further.” Dan readily consented to Stearne’s request and then they left.

111. The Trap

When Dan and Levin returned to the Cloister that night, they found Anya and Vinay sitting on the carpeted floor with large paper diagrams and remnants of a Chinese take-out dinner sprawled all around them. Anya looked up and assumed a severe expression. "While you gentlemen have been gallivanting around town hobnobbing with the rich and famous, we have been hard at work unraveling the mysteries of the universe. I certainly hope you both appreciate the sacrifices we make on your behalf." As tired and confused as he was after six hours with Stearne, it felt very good to be back in the Cloister and subjected to Anya's playful taunting.

Seeing that they were carrying back a heavy load from their meeting, Vinay invited Levin to share with them whatever he thought relevant. Although Levin attempted to abridge their meeting with Stearne to the bare essentials, he found almost every word that they had exchanged too important to leave out. He finished his narrative two hours later. It was past 11 pm, but it felt more like 2 am to all of them. There was simply too much to digest. Anya curled up in Haydee's chair and promptly fell asleep. Vinay created a bed of pillows on the floor. Levin took the couch and Dan retired to the bedroom.

The next morning they rose, showered and gathered around breakfast to resume the discussion. Limpia, who had gradually taken charge of the Cloister kitchen and proved to be an able chef, somehow knew she would be needed early and was already cooking by the time everyone had bathed. She offered the added advantage of not speaking much English, though Dan had been convinced by her recent initiative to protect *The Book* that she understood a lot more than she let on. Twenty minutes later Ray joined them. Just as Levin began to summarize what they thought they had learned from Stearne, there was a call from MAI reception announcing that the professor was downstairs. Dan asked security to show him up to the Cloister, where he appeared a few moments later in a baseball cap and blue sweat suit. Dan introduced him to Anya and Vinay and asked him to join them for a meal.

"I hope I am not intruding," he said. "I went for a walk this morning and found myself heading in your direction, so I thought I might as well accept your invitation to drop by. Truth is I could not sleep last night thinking about *The Book*, Theon, the Round Table and related issues, so I got up this morning and tried an experiment. I thought the results were significant enough that you should know as soon as possible." All five of the partners listened intently.

"Of all the things you told me yesterday, there was one fact that was most jarring and difficult to reconcile. It was the story of the disappearing pages on the Internet. I did not doubt for a moment that what you said was true, but I found it very hard to conceive how it could be possible. As a philosopher I have been trained to consider all possible explanations for any phenomenon. So early this morning I called a close friend, Jim Craig, who owns an Internet Service Provider and asked him. He more or less confirmed what Levin had said about the technical difficulties involved in penetrating ISP security and eradicating web-pages on hosting services. But then he posed an alternative possibility. He said that it just might be possible to achieve the same effect through local tampering with Internet signals at the user end, which means here at MAI. I remembered you had said you had trouble with a disloyal employee. I began to wonder whether he could have introduced some device at this end which enabled someone externally to monitor your web movements and divert traffic to alternative destinations."

Dan shook his head and explained that he had first noticed the phenomenon of disappearing pages while working from home and that Anya and Ray had reported similar results when they searched from home as well. Then he conceded that whatever tampering was done at MAI could potentially have been done elsewhere too. But that would not explain how they had by-passed Gavoche's security measures.

"Anyway," Stearne continued, "what I wanted to tell you was something else. Based on this I decided to construct an experiment. I tried searching for some of the key concepts that I read in *The Book* yesterday and I believe I came upon several pages of authentic *Archive* material. I checked back an hour later and the pages were still there. When I arrived at MAI reception this morning, I asked the security guard to pull up the same pages and he readily found them. Just before coming upstairs, I asked him to check again and he reported they were missing. Think about that!"

The partners exchanged glances. They had been so convinced that the missing pages were a mystical phenomenon, they had never even considered the possibility that someone was actively monitoring and manipulating their Internet activity. Levin knew that it would have required state-of-the-art technological capabilities not available for sale in the private sector, except perhaps on the black market. Dan felt foolish for never having considered this possibility in the past.

“But that’s not all,” Stearne resumed. “I took one step further. I laid a trap. I created a new page of archival material. That is, I composed a page from memory based on what I had read yesterday and asked Jim Craig to host it on his ISP. I then accessed the page this morning and found it worked properly. Now I would like you to access the same page from here and let us see what happens to it.” He handed the web page address to Vinay who went over to his laptop and pulled up the page. Stearne showed them the code he had placed in the bottom left corner as a unique identifier. A few minutes later, he asked Ray to access the page from another computer. When he tried, Ray found the page was no longer available at that address. Stearne then pulled out his cell phone and called Craig at the ISP. His friend had been monitoring the site. The page was still there and displaying normally at their facility. He disconnected the phone and began speculating on what had occurred. Five minutes later Craig called back and reported that the page had suddenly and inexplicably disappeared from their server. Expressing great surprise, Craig said he would have to study the event carefully in order to determine how it had happened.

“Well, there you have it, friends,” Stearne exclaimed smiling proudly. “So much for magical or mystical stories of missing pages. Blame not the Gods for their mysterious ways. We have here a genuine case of cunning human intervention. I believe Mr. Sherlock Holmes would be quite impressed by my performance this morning, don’t you?” Everyone laughed and praised the professor’s perspicacity.

112. Infinite Money

“The mystery of things is their true truth; the intellectual presentation is, like cubist art, only a representation in abstract symbols.”

The Book

“Now this brings us back to the central question we discussed yesterday,” Stearne resumed. “Who could possibly be behind this extraordinary charade? Why would they go to so much trouble to eradicate pages from the web and, presumably, also try to steal *The Book*?”

The six of them spent the next two hours exploring the possible answers to this question based on the information provided by the professor the day before. Levin alone remained quiet and passive during the discussion, listening intently but offering no viewpoint of his own. Stearne asked many questions about AIS, particularly about the future potentials of the product and where the partners intended to take it. He followed their answers with careful attention. The group eventually fell into a deep, contemplative silence.

Ten minutes later, the professor broke the spell. “Infinite money. What you people are talking about is creating infinite money. That seems to be the answer. It seems to me that this is the implication of fully implementing your plan for AIS and *Accomplish*. Infinite money. Do you have any idea of the significance of what you are talking about? Ambitious individuals have dreamed of this for generations. That is nothing new. For all practical purposes the Rockefellers, Fords, Morgans, Carnegies, Duponts and their like realized that dream for themselves eighty to a hundred years ago or even earlier. Recently a handful of other individuals like Gates and Buffet have realized it. But what you are talking about is something very different. You are talking about a knowledge that can multiply money for everyone. I trust you see the difference, don’t you? A few people accumulating unconscionable wealth helps to elevate money to a premier position as a symbol and center of power in society; whereas, millions or hundreds of millions of people accumulating huge monetary surpluses would reduce and undermine the power of money until it carried no more status or prestige than a Chevrolet or a mobile phone. Money would still retain its utility value, of course, but utility value has never been the thing that made wealth accumulation so very appealing. Money has always had the power to differentiate one person from another socially, to motivate and compel those who did not have it to subordinate themselves to those who did. You are talking about radical social revolution—far more radical than Marx and Engels ever contemplated.”

Vinay seemed utterly bewildered by Stearne’s statements. “Excuse me, professor, but I think there is some confusion regarding the nature and magnitude of what we are doing. We certainly believe that AIS⁸ and *Accomplish* are powerful tools for making money, but no one here is talking about creating infinite money or anything like it.”

“That’s just it. You seem to have no conception of what you are doing,” Stearne replied looking at them in wonder. “It’s awesome! You know it occurred to me last night that there was something which did not make sense about Dan’s story of finding *The Book*. As I explained yesterday, every known sighting of *The Book* in the past—and I am now almost positive we are talking about the very same book—every instance is associated with the outbreak of revolutionary events. All except Dan’s discovery of the book at Moe’s in February 2004. There was absolutely nothing revolutionary about 2004, unless you call the re-election of a reactionary president revolutionary. No, it just did not make sense. Now I think I understand. Previously *The Book* appeared at a time when radical revolution was taking place. But this time it has come to create that revolution. You people are the source of that revolution in the making and you are not even conscious of it. AIS is an instrument for changing the world.”

Stearne’s voice had risen in volume as he spoke these words and acquired an eloquence that was exhilarating. For a few moments the aging scholar was transformed before their eyes into the young idealistic philosophy professor who had been the first tenured faculty member to join the Free Speech Movement in 1964, lending it courage, leadership, and legitimacy, while subjecting himself to intensive pressure and threats from the university administration.

Looking around the room, he saw the confusion wrought by his outburst, so he paused to modulate his voice and quiet his mind. “Forgive me, I suddenly felt forty years younger and got a little carried away. When you came to me yesterday, I was intrigued by your story and fascinated by the profound content in *The Book*, but I did not really understand the significance of what was happening until just now. Let me explain what I am saying in more philosophical terms using the methods I know best, the methods of a teacher. I hope you don’t conclude from what I am going to say that I am simply a lonely professor desperate for another group of students to lecture. I assure you there is no shortage of opportunities on that score. What I tell you now may appear far afield from artificial intelligence and an unnecessary digression. But if you are

to fully understand the significance of your own work, it is essential that you grasp the essential truth on which it is based. So I will start by asking you a very basic question: What is money?"

Vinay immediately responded, "Money is a medium of exchange, a measure and store of value..."

"Yes, yes," Stearne interrupted, "I know the economic function of money written in all the textbooks, but I want you to tell me what money actually *is*."

"It's a symbol," Dan replied. "It's a symbolic representation for material goods and services. Instead of bartering my cow or my house for something else, I use this symbol as an intermediary between what I want to buy and what I want to sell."

Stearne nodded approvingly. "Right, Dan, money is a symbol. Leave aside the rest for now. Money is a symbol in the same way language is a symbol. We create an infinite variety and sequence of sounds and by convention we assign to each a specific meaning. That's language. Now note three important things about it. First, language enables us to interact and relate with other human beings in a manner that would otherwise be impossible, both personally in the here and now and impersonally over vast distances in space and time. Second, language is entirely a human creation. Third, and this is the most important one for our purposes - because it is a human creation, there is no inherent limit to the number and variety of words, thoughts or meanings we can create. These three attributes all arise from the fact that language is composed of symbols. Do you see what I am getting at?"

Ray shook his head. "Frankly, no, professor. I do not. I understand that both money and language are symbols, but there is one essential difference. Language is a mental system of symbols that is limited only by the limits to our capacity for thought and imagination; whereas, money is a symbol for material realities and therefore inherently limited by the sum and value of material goods and services it represents."

The professor shook his head vehemently and smiled warmly. "Ray, I am surprised at you. This is just another example of how high levels of knowledge and utter ignorance can co-exist side by side. That is the trouble with all you brainy types. You concentrate so exclusively on knowledge in your own field of expertise that you become idiots in other fields. It reminds me of Sherlock Holmes, who admitted that he was ignorant of the fact that the earth rotated around the sun because it lay outside the field of his expertise. Moreover, he said he did not really care since it had no practical impact on his work." Seeing that Ray was offended by his jibe, Stearne patted him on the shoulder. "I am only baiting you, my friend. I would not be here if I did not think you people were extraordinary. I just could not resist the opportunity to rant about one of my favorite themes, the limitations of exclusive concentration. You should already be familiar with it. I found it running as a clear vein of ore through all the chapters of *The Book*."

"Anyway, let us get back to the point you made about money. You have only given expression to the widely held belief that the amount of money is inherently limited by the amount of goods and services. That may have been true at one time. But it is no longer valid. It is a vestige of our past, a modern myth perpetuated by central bankers. Have any of you read or studied about the goldsmith bankers of England?"

Stearne looked around the room and saw blank expressions on everyone's face. "They started out as just goldsmiths who made and sold jewelry. When European commerce began to expand rapidly after the discovery of the chronometer and the New World, wealthy traders and other rich people began to deposit their gold hoard with the richest and most respected goldsmiths for safekeeping. At the time of deposit, the goldsmith would issue to the depositor what became known as a goldsmith's receipt. Depositors found it a lot easier to safely store these receipts, which were not very different in appearance from modern currency notes, than to store their hoards of gold. They soon discovered the receipts were also a much safer, more convenient way to carry out buy and sell transactions in London. So pretty soon, the receipts became a *de facto* form of currency that was widely accepted as a medium for commercial exchange. Now it did not take long for some clever goldsmiths to realize that the receipts they issued need not be limited to the actual amount of gold they held in storage. It was only necessary that the general public, particularly the wealthy depositors, *believed* that each receipt represented an actual deposit of gold and *trusted* that they could always redeem their receipts for the precious metal whenever they wanted to. Note the words *belief* and *trust*, because they are the basis of the whole intellectual edifice I am trying to construct for you. In practice, the more widely the notes were circulated and the more people came to have confidence in their value, the less the tendency and necessity of reconverting them into gold, which meant that goldsmiths could safely issue a greater proportion of notes in excess of their actual gold stocks without running into trouble. I hope you see the significance of what I am telling you. They were not just creating paper notes to represent physical gold. They were creating money that was based on public belief and trust in their financial soundness and integrity. Five hundred years ago, money ceased to be a mere symbol for a physical commodity and it became a pure abstract symbol based on trust and public confidence. Of course, there were limits to that

trust. Confidence could easily be lost by foolish, greedy or excessive practices, so that forced the bankers to moderation. But the fact is they created money out of nothing, out of thin air.”

Stearne paused and asked for another cup of coffee. He saw his students were following the argument, so he proceeded to trace the further stages through which money had passed in its evolution from a physical commodity to a pure symbol of trust. He explained how the bills of exchange created by Venetian traders during the Renaissance were merely precursors of modern commercial credit. He showed how each time money changed hands in a commercial transaction, it increased the propensity for further transactions and increased the willingness of the parties to extend credit, which means to create money based on trust. He then traced the rise of modern commercial banking and related how banks began issuing banknotes or currency of their own based on public confidence in their strength and integrity as social organizations. His listeners were surprised to learn that one hundred twenty-five years earlier there were more than five thousand commercial banks in the USA issuing their own banknotes, creating money out of public trust. Then he quickly summarized the stages through which money creation came under the control of central governments through institutions such as the Bank of England and the Federal Reserve. “Contrary to common conception, the Fed is not actually owned by the US Government. It is privately owned by the banks, which has become the source of endless conspiracy theories. But let us not go there just yet.”

Finally, Stearne described the changes that had occurred in the process of money creation during the past few decades and summed up the situation this way. “Today we have come to a stage where the creation of money is no longer dependent on the physical production of goods and services, the volume and value of commercial transactions, or even the strength of our financial institutions.” Then he stopped and looked around the room like a magician who has just woven a spell and wants to be sure he has fully captivated his audience.

“If it does not depend on any of those things, then what does it depend on?” Ray asked. “It has to be based on something. Society cannot just create infinite money out of nothing. It would only generate hyperinflation and become worthless.”

Stearne smiled, as if he had only been waiting for that question. “Yes, I know the argument. It’s one of those atavistic economic superstitions that refuses to die. The idea that nothing can be created out of nothing has its roots in Newton’s law of the conservation of matter and energy. But physicists now understand that this is an overly simplistic assumption about the nature of the universe, based on what *The Book* refers to as the law of contradictions. We now know that tiny quanta of matter and energy emerge spontaneously out of the vacuum referred to as the zero point energy field. Actually matter and energy *are* created out of nothing - or at least out of something that appears to be nothing to our conception and sensory perception. The very same is true regarding money. Money too is created out of nothing or out of a zero energy field which may be termed the *social potential*. The total amount of money created depends only on one thing, on the social will, trust and confidence in its own total productive capacities, past, present and future.

“Taking the analogy a little further. Physicists now know that 96 percent of the total matter and energy in the universe is in the form of dark matter and energy, something we cannot observe and can only infer actually exists. Dark energy is described as a mysterious force that is accelerating the expansion of the universe. Dark energy helps us explain why the inner and outer parts of the universe rotate in unison. In other words, the current theory regarding dark matter and energy is only another way of saying, ‘We think there is something out there, but we do not know what it is.’ Well, the same thing is true of money. All money in circulation today in all its forms represents less than four percent of the total potential money that society can create out of its invisible social potential. I say less than four percent, because there really is no limit to that potential other than what human beings place on it. That is why I started with the analogy to language. As there is no inherent limit to the quantity of words and thoughts human beings can formulate, there is no limit to the value of money it can create.”

Ray shook his head back and forth rapidly several times, as if to clear the confusion in his mind by a violent physical gesture. “But the creation of money has to be based on something, limited by something,” he insisted.

“Yes, it does,” Stearne replied. “It is based on the willingness of human beings to relate to one another in productive ways and on our capacity for trust and trustworthiness. Look, I know I have thrown a lot of ideas at you in rapid succession. This is material for a full one year graduate seminar. I also know you already have a lot on your minds without me burdening you with the philosophy of money. Let me just state a few obvious facts and then let us leave it at that for the present moment. First, think about what would happen today if public confidence took a sudden nosedive, if trust in the strength and stability of the US Government declined drastically, if global confidence in the vitality of the US economy dried up, or if the

confidence of the American people in their own aspiration and capacity to generate wealth and prosperity suddenly vanished. I think it is self-evident that we would witness a catastrophe. Trillions of dollars of money would simply vanish into thin air overnight, just as hundreds of billions in shareholder value disappeared during the dot.com bust.

“Second, twenty years ago, Van Gogh’s famous Sunflowers sold to a Japanese collector for just under forty million dollars. Japanese investors looking to own a piece of America also paid fabulous prices for Rockefeller center in NY and Pebble beach golf course here in California. In the past decade suburban land values around major metropolitan areas in China and India have risen five to tenfold. I hope you see the significance of these facts. They demonstrate that as prosperity rises, the perceived value of existing material assets rises as well. This multiplication of value is not due to inflation. It is due to rising social aspirations. As long as social aspirations are expanding, the potential for money creation will continue to expand at an accelerating pace along with our expanding physical universe.”

Stearne stopped abruptly, looked at his watch, apologized for lecturing to a group of mature minds and stood up to leave the room. Ray and the others urged him to sit down again and continue the discussion. So many questions remained unanswered. It had not yet even become clear what all this had to do with them, with *The Book*, MAI and AIS. “Enough for today,” he replied. “I know when I am in danger of losing my audience to mental fatigue. But if you would like a second installment, how about breakfast tomorrow? Same time. Same place. Limpia’s coffee and omelet are excellent. You have a beautiful view of the Bay. And the company is exhilarating! Only, after our next meeting, I would like the cook’s tour of MAI.” They readily agreed, then Ray escorted the professor downstairs.

113. The Perpetual Money Machine

Society is power organized, of which money is one expression.

Archives

Stearne appeared thirty minutes earlier than on the day before, this time in a red 49ers sweat suit and cap. Obviously not a creature of habit, Dan observed. He explained that he had come a little early in order to have a few minutes to read *The Book* before the others arrived. Dan left him in his office where he would be undisturbed. When the others arrived and Limpia had prepared breakfast, they all gathered round the table and sat down. No one said a word, not even an informal social gesture to break the ice. They just waited for Stearne to begin, like freshman students attending their first day of class.

Stearne glanced at the eager faces sitting around the table with a glow of gratification that concealed unbridled enthusiasm. “Let me summarize where we left off. Money is not a thing. It is a human invention, a social resource, no more subject to inherent limits than our capacity to create words, concepts, laws, activities, systems, companies, and other types of social organizations and institutions. Money occupies the middle ground between mind and matter. It occupies what *The Book* terms the vital plane of life that is the link between the mental and physical planes. Mind is the plane of knowledge and will. Matter is the plane of form and substance. Life is the plane of energy and power of action. As words symbolize the power of ideas, money symbolizes the power for action in the plane of social life. With money you can accomplish anything. Without money you can also accomplish anything that people are willing to do out of compulsion or free will without the incentive of payment. So money represents the willingness of people to act, especially to act for productive purposes. When America was fighting for its independence, our forefathers fought and sacrificed their lives for an ideal of freedom, not for money. When Gandhi called on the subject people of British India to rise up en masse in non-violent protest demanding independence, tens of millions heeded his call, many sacrificing lucrative jobs under the British administration, none of them for money. Today we pay mercenaries to fight for us in Iraq. Money can do many things that can be done by other means for other reasons. Money represents the willingness of society to act. If I was a Tom Paine or a Gandhi, I could accomplish the work of billions of dollars without having a cent to my name. Money gives that same power to whoever possesses it. And that is why the lure of money is so great, even for those who possess a million times more than they can ever spend on their own personal lives. Money is social power.”

The professor paused for questions. His audience remained motionless and silent. He saw understanding where the day before he had read confusion, so he proceeded. “Now here is where it gets interesting. I said that human beings can create money, can multiply it. What I did not tell you yesterday was that money can also multiply itself, it can self-multiply. This is a crucial point. It will be clearer if we first consider what happens on the Internet. Apart from its many secondary functions, the Internet is essentially a system that facilitates the exchange of information and knowledge between human beings. It differs from earlier systems in both structure and capacity. Humanity began by developing a means for communication between two individual human beings, the spoken language. Later we developed writing, which enabled the same communication to be shared by many individuals or to be transported over space to people in distant lands or transported through time for transmission to posterity. Printing facilitated the mass distribution of information from one to many, through books and newspapers. Radio and television and cinema were only more rapid and efficient mechanisms to do for images and sounds what had already been done for the printed word.

“Now enters the Internet. A system which for the first time permits unlimited and instantaneous exchange of information from one to many, from many to one, or from many to many. It has infinitely multiplied the potential number and speed of transactions between individual human beings. I trust you see the point. Assuming everyone has access to the Internet, it makes possible six billion to the power of six billion different pathways of individual information exchange and countless more when you consider one to many or many to one combinations. I leave the precise mathematics to Anya. There is only one other system created by human beings which even distantly approaches the potential capacity of the Internet. Can you guess what it is? Money! Money does for transactions what the Internet does for information. It permits an infinite number of one to one, one to many and many to many transactions over time and space. Money is nothing other than a virtual network of human beings.

“Please note the important point. Each exchange of information by any individual or group of individuals on the Internet *creates* new information. It creates information about the nature, volume and content of their exchange. The exchange itself becomes a new piece of information. That is the truth that Google realized, which made it the first to build a financially viable money-making business out of what started as a free search engine. Every time someone searches for information on Google, they create new

information which is of value for someone else. They also had the insight to devise a strategy to convert that value into profit, by creating *Adwords*. They offered advertisers the opportunity to present their ads only to individuals who are searching for particular types of information. It is a very simple, but absolutely brilliant business strategy which enabled Google to become a twelve billion dollar business with 33 percent net income and one of the most valuable corporations in the world in less than a decade. In other words they converted the multiplication of information into a means to multiply money.

“The essential point is that on the Internet information begets more information each time it is accessed or processed in new ways by human beings. It self-multiplies. Precisely the same thing is true of money. Each time a money transaction occurs, additional money is created, at least in potential. Each completed transaction adds incrementally to the total propensity and willingness of human beings to transact with one another, just like each successful exchange on the Internet increases our willingness and propensity to exchange or transact through this virtual network. Money is also a virtual network that promotes transactions between human beings and each transaction begets new and more transactions, just like on the Internet. Note that currently about six billion searches are conducted every month on the Internet; whereas, the number of financial transactions between earth’s six billion people is probably ten times that number. Many of us conduct ten or hundred times that many personal, work and investment related transactions. NYSE Euronext’s North American and European operations alone involve an exchange of more than 2.5 billion shares daily!

“Now as Google figured out how to convert the exchange and multiplication of information on the Internet into money, there are a few people who have discovered how to convert the billions of monetary exchanges that occur around the world every day into a means to multiply and self-multiply money. In spite of my apparently unlimited store of knowledge in this esoteric field, I am not an expert. My expertise is limited to a theoretical understanding of the underlying principles, which is what I am trying to communicate here. If I had the practical knowledge that this small elite possesses, I would be out there self-multiplying money for myself and the world, especially the latter since I have more than enough as it is to meet my own meager wants.

“In sum, there are people out there who know the secret formula for the self-multiplication of money and exercise their knowledge to generate new wealth at an incredible velocity. They know how to do it. And equally or more important for our purposes, they do not want anyone else to know what they know. There are other people out there who believe in the possibility of self-multiplication but do not possess that knowledge and are desperate to acquire it.”

“So, professor, you believe that these people, whoever they are, may be out to stop us?” Ray asked.

“That is one possibility. The other is that the people pursuing you believe in the knowledge and want to acquire it. I cannot say which. But that is not my immediate point. There is something more important for you to understand. Both these groups of people understand what apparently none of you has yet grasped. *The Book* says it, but I do not think you have perceived its meaning. AIS creates new productive human relationships in multiple dimensions, just like the Internet creates multi-dimensional relationships for information exchange, one to many, many to one, many to many. AIS is not just a tool to make people more efficient and productive. It is not just an instrument for making money. It is, at least in potential, an instrument for the multiplication and self-multiplication of money on a scale and magnitude never conceived until now. I believe that AIS—I am speaking of the distributed, global network of independent *Accomplish* users which Dan described to me yesterday as his vision of the future—is to money what the Internet is to information, an instrument for infinite self-multiplication. Now can I get that tour?”

114. Conspiracy Theory

The next morning the same group convened over breakfast for the third successive day. Stearne, who came in a coat and tie, explained that he had to deliver a lecture to graduate students on the nature of consciousness right after lunch, so he had dressed for the occasion.

“Now let’s come back to the central question,” Stearne said. “Who would be prepared to take extreme measures to prevent the infinite multiplication of money in society? Who would have sufficient knowledge of the capacity of artificial intelligence to fear the possibility as real? Who would have the capability to make pages disappear from the Internet? Who would have the capacity and willingness to stage break-ins to steal *The Book* and possibly AIS as well?”

“You think it could be what you called the Round Table of international bankers and financiers that you spoke of two days ago at your home?” Ray asked.

Stearne shook his head. “I agree they have a motive and plenty of capability, but I doubt very much that they could bring themselves to believe the threat is very real. The Morgans, Rockefellers, and Rothschilds of the world have been on top for too long to doubt their staying power. No, I think we are talking about another center of money power, a newer, more ambitious center, particularly one that knows enough about the power of computer to take this threat seriously. I am talking about the hedge funds—groups of private investors who are not subject to regulation by the SEC and other regulatory bodies. Don’t be fooled by the respectable names of Wall Street investment banks under which some of them operate. These funds are controlled by fabulously wealthy and often very secretive people, with combined assets exceeding two trillion dollars, most of it in offshore accounts, a good part of which may be laundered money from illicit sources. Mind you, I am not just referring to the Western-based hedge funds targeting global investments. This group also includes extremely private funds clandestinely operated by other countries for the superrich, especially for money coming from Russia and the Far East, much of it generated by mafia activity, then multiplied by means of the funds. These funds exploit leveraging and arbitrage to move tens of billions of dollars around the world in an instant in search of any marginal gain in value. And the managers who operate these funds are not ordinary people. The best of them have been known to earn \$1.5-2.0 billion a year for their efforts. Much of this is not old wealth. Most of the funds are less than five years old. These are people who believe in playing the odds, who understand the power of information and who rely on the power of sophisticated computer programs to multiply their money. They believe in a mathematical formula for beating the market. Who could appreciate the value of AIS as much as they can?”

“I am no conspiracy theorist. But we know for a fact that hedge funds have been the force behind runs on the British pound and the Hong Kong dollar, as well as stock market runs. There are thousands of funds. Obviously they are not all working together is some grand conspiracy against the rest of humanity. But the speed and magnitude of recent hedge fund activity support the view that a number of the largest offshore funds may be controlled by less than a dozen people working in concert. In recent years there have been numerous claims of conspiracy against some large hedge funds reported in the Washington Post and other reputed newspapers. SEC investigations have been launched and law suits have been filed. But since most of the funds operate off-shore, very little is actually known about their investors or their activities. This may be just the tip of the iceberg. There are confirmed reports of cloak and dagger activities, spreading of slanderous reports about insurers, harassment of executives, corruption, embezzlement, racketeering, theft, fraud, psychological warfare, tax evasion, you name it. Compared with those things, the harassment you have undergone is next to nothing.”

“I still don’t see how this group or any other could be responsible for the disappearing pages,” Dan replied. “The first time I noticed the disappearance of *Archive* materials was nearly three years ago. It is extremely unlikely that anyone could have known that I had found *The Book* until at least a year later. During that initial period we had no staff and no interaction with the outside world regarding the ideas in *The Book*. We did not even conceive of AIS until six months later.

Stearne thought for a minute and then replied. “You have to keep in mind one thing. For all of you, except Levin, *The Book* is something that did not exist until three years ago. But there are people in the world who have known about *The Book* for eight decades or more. Some of them, or at least their predecessors, may have seen *The Book*, had it in their possession for a while, studied and applied its knowledge, and understood its extraordinary power. They may also believe that *The Book* cannot be physically reproduced. We don’t know who they are or how they lost contact with *The Book*. But it is very clear that they are people who do know its value and have known about it for a long time. We are assuming that whoever did this necessarily knew that you had *The Book* when they destroyed those *Archive* pages. But there is another possibility. If there prime objective is to obtain access to the knowledge, while preventing it

from becoming public, then they would be almost as much concerned about locating the *Archives* and preventing leakage of the *Archives* as they would be in locating *The Book* and preventing leakage of information about it.

“Suppose you wanted to locate possible excerpts from the *Archives* on the Internet and did not know where to find them because you did not know what information they contained. What would you do?” Stearne paused waiting for an answer, but no one seemed to have any idea what he was driving at. Shaking his head, he expressed his disappointment at their lack of resourcefulness. Then he explained the research strategy that he would have adopted himself in a situation like this. “Let us assume I had some tiny fragment of knowledge about the ideas that *The Book* and *Archives* contained, or at least I was in a position to hazard a good guess. For example, the concept of multiplying money and infinite money would be a good place to start. Now if I had the organizational connections, technological and financial capabilities that these people seem to possess, I would want to monitor all search engine activity related to terms like these to identify who was conducting searches on these topics. How would I do it? I would construct a fake *Archives* page similar to the one I constructed a few days ago with all the key words that I knew genuine seekers for *The Book* and *Archives* might be looking for. I would monitor the IP addresses of every user who came to the fake pages. Then I need only monitor other search activities emanating from that same IP address in the hope they would lead me to other pages of the *Archives*. Brilliant strategy, don’t you think?”

“Now let us suppose I did this and was fortunate enough to detect one of your early Internet searches for additional information about *The Book*. Perhaps you even searched for some significant phrases used in *The Book*, which our unknown adversaries were looking out for. They might have spotted your suspicious activity very early on. Of course, they might not have even suspected that you actually possessed *The Book* itself until many months after that. But certainly when they found out that you were repeatedly returning to the web for additional information on related concepts, they could have come to suspect that possibility. Remember, once they had located you, each time you found another *Archives* page, you led them to that page as well. That means each time you learned more about the knowledge you were looking for, they also learned more about the knowledge they were trying to obtain. Perhaps initially they only monitored your activities at work. Maybe they independently detected your search activities from your homes and later put two and two together. They would not require high tech apparatus to do any of this. All they would need to do is contract with leading search engines for all available information about IP addresses searching for these terms. It would all appear to be perfectly normal and legitimate data mining activity for commercial purposes, possibly done through a front company.

“At some point they took you seriously enough to directly infiltrate your own computer systems or Internet access lines here or at the ISP, assuming they have done so at all, so they would not miss a single search transaction. Perhaps they even tried breaking into your offices or homes one or more times, but never found what they were looking for. Surely these are people with the sophistication to do so without leaving a trail of evidence to alert you.”

Stearne completed his explanation with a broad smile and a flourishing bow. “How is that for an instant conspiracy theory? Sherlock Holmes at your service. Or, perhaps, I should say Dr. Moriarty!” This explanation left his audience utterly speechless. He then said that he had already ventured out too far on the proverbial limb by speculating this much without an iota of evidence to support his contentions. For further confirmation, he advised them to seek other sources of information. “I have a professional reputation to protect, so I hope you will respect my request for confidentiality as much as I respect yours. Now if you don’t mind, I would like to spend an hour or two studying *The Book* before leaving for my class.’

Dan offered Stearne a comfortable chair in his study. So many new possibilities had surfaced during the past few days that everyone wanted some time for reflection. Levin announced that he would be out of town for several days. He did not explain the nature of his engagement and Dan was hesitant to ask him. Then they adjourned.

115. Evolution

For the next two weeks, Stearne was an almost daily visitor to MAI. Hesitant at this point to even let *The Book* leave the room and travel to the next floor, Dan installed another desk and chair in the study and invited the professor to use it as often and as long as he liked for reading *The Book* and the *Archives* undisturbed. The professor took Dan at his word and showed up at all different times of day and often stayed till late into the night. One day he arrived at 6:30 am with two cups of Starbucks' coffee in his hands and woke Dan up to share with him an exciting revelation. On two occasions he spent the whole night on the couch where Levin usually slept, saying he was too tired to walk the three miles home at so late an hour and refusing to let Dan call a taxi because walking was such good exercise.

Stearne's preferred mode of study was through dialogue. He bombarded Dan with questions and comments on almost every occasion when they were alone in the Cloister. Gradually thoughts of the conspiracy faded into the background as they became more deeply engrossed in a joint study of *The Book*. Stearne generously appreciated the depth of understanding which Dan had acquired regarding the contents of *The Book*, *Archives* and *Messages*, and his capacity to cross-reference ideas from one source to the others. The professor richly supplemented Dan's knowledge from his own vast knowledge of similar and contrasting conceptions from around the world, which helped Dan comprehend the ideas and significance of *The Book* from a wider perspective. It was evident to Dan that Stearne not only believed *The Book* was the genuine article referred to in the rumors; the professor had a profound respect and admiration for the knowledge it contained and an insatiable curiosity to pursue different lines of its complex and integrated conceptions.

Their initial emphasis had been so much on the history of *The Book* and those who were after it, that it was several days before their conversations came to focus on how MAI was translating philosophical conceptions into operational algorithms in AIS. Here too, Dan was pleasantly surprised to discover the vast store of knowledge Stearne possessed regarding the various theories and applications of artificial intelligence. It was heartening to find out how close were their views on the subject. Stearne was thrilled by the concept of a global grid of *Accomplish* users networked in a manner that would multiply both the knowledge base and conscious power of everyone on the system. Like the MAI team, he believed that the source of consciousness at all times issued from the designers and users of the system. He too viewed the computer only as an instrument, a tool, to extend the power and reach of human consciousness, never as an independent source of consciousness in its own right. He scoffed at computer theorists and philosophers who tried to reduce human consciousness to chemical and electrical reactions in the brain. One day he stumbled upon a passage in *The Book* that sent him into thrills of ecstasy which would have puzzled any mortal who did not understand his thinking as well as Dan.

The force is anterior, not the physical instrument.

"Marvelous expression!" he exclaimed. "It sums up the whole problem of modern theories of consciousness. We mistake the instrument for the source of consciousness. Imagine how foolish we would think a primitive, who upon seeing a television for the first time, thinks the people on the screen actually live in the box. Yet we repeat the same error when it comes to the computer. We create it. We program it. And then we marvel that it does exactly what it was been programmed to do. However wondrous that might seem, it is not consciousness. I am afraid our biologists and neurologists are making the same mistake regarding the source of human consciousness. The brain is only an instrument. The source lies elsewhere."

A close, personal friendship gradually developed between the professor and the entrepreneur. In spare hours when they were not mulling over *The Book* or AIS, Stearne questioned Dan about his Irish grandfather who died fighting for freedom from British rule and his five sons who immigrated to New York in the 1930s. "I find traces of them all in you," Stearne quipped. He wanted to know everything Dan could tell him about his years at Caltech, his reading, his interests and his thoughts. Behind the passive countenance of a superb listener, Dan could sense a keen intelligence probing for understanding. Stearne later explained that he was trying to discern from the fragments of Dan's past what had led him to his present work and why *The Book* had come looking for him. The professor never told him whether he had found a satisfactory answer to that question.

"What I have heard about you is dead wrong, Dan. People say you are either a closet genius, an eccentric or a recluse. The truth is, you are a prisoner of your own success trying to make the best of a very difficult and dangerous situation. It reminds me of the Indian sage, Sri Aurobindo, who was the first Indian leader to demand total Independence from British rule at the turn of the century. The Brits placed him in isolated confinement for a year on trumped up conspiracy charges. During that time he had profound

spiritual experiences that transformed him. He later said that the British had placed him in jail and his cell turned out to be an ashram. Like him, you seem to have converted necessity into opportunity. Quite frankly, I like the feel of this place and wouldn't mind being confined here too."

When Stearne was not interrogating or intently listening to his host, he revealed himself to be an avid and fascinating story teller. The vivid stories he narrated were at once intensely personal and universal. Dan had never encountered a mind that had such an all-encompassing panorama of history. Everything that had occurred in the recent or distant past appeared to the professor's vision as waves of a grand evolutionary progression, an evolution of consciousness. He loved to reminisce about his earlier life, about his family's struggle to make ends meet during the Depression, the Communists who he listened to in Central Park as a teenager, and his years at Oxford. He sketched the progress of humanity following the end of WWII to the present with the subtlety and grace of an accomplished artist. First, peace. Then a democratic revolution that spread all over the world, starting with the collapse of the colonial empires in India and fifty other nations, and continuing until it finally toppled the Soviet empire forty years later. Then unprecedented economic security and prosperity, the likes of which humanity had never seen before, began in America and gradually spread from there to pockets around the world, until it has even penetrated the culturally-rich reservoirs of humanity in China and India.

But most often he came back to the exciting, turbulent years of the 1960s when he first became a member of the faculty at Cal. He spoke with modest eloquence of the aspirations and dreams of the marvelously rebellious generation that emerged following the post-war boom in America, the sudden explosion of well-intentioned, though often misdirected, energy and creativity, the first wave of baby-boomers who became the hippy generation. The quest for freedom which he and his parents' generation had sought in political liberation and economic security took a profound turn in the 60s when the first post-war generation raised in peace and prosperity reached beyond these remarkable achievements in quest of freedom from social convention and freedom for the emergence of true individuality.

Stearne believed that the amazing technological revolution of the 70s that led to the development of the personal computer had its seed and origin in that quest for individual freedom. The PC, he said, was the embodiment of the human aspiration to create a technology that extended and subserved the individual, rather than lording over him and making him its slave. Early PC makers such as Apple were inspired by a missionary zeal to create a machine that would empower the individual. By that time, others of the 60s generation—the vast majority who had abandoned their dreams of dropping out or creating a utopian world—had infiltrated corporate America and risen into the ranks of middle management. New prophets such as Tom Peters emerged to carry the battle-cry of freedom into huge, bureaucratic organizations and tear down the walls of formality and impersonality that suffocated individual initiative and creativity. It was America's version of a revolution from within, like the revolution from within that brought down the USSR.

Stearne spoke of the Internet and the World Wide Web as the next stage in a grand revolutionary drama that was still unfolding, a drama that would alter human civilization as profoundly as feudal agrarian Europe was transformed after the advent of the Renaissance, the Reformation, the commercial, democratic scientific and industrial revolutions. "Peace, democratic prosperity, social freedom, the end of the Cold War, and the emergence of the web are mere stepping stones. We are entering a new age, Dan, or at least we are on at the doorstep. I see AIS as a portent of things to come."

For ten days Dan had no word from Levin. Levin never called and Dan thought best not to take initiative to break the silence created by Levin's unexplained absence. At first he had felt it odd and even a little suspicious that Levin would go away without offering any explanation. Later he wondered whether his own unexpressed suspicions had been perceived and driven Levin to distance himself from MAI. Neither explanation felt true. As the days passed, he realized how much he had come to rely on Levin's calm strength and clear judgment. Though his partners rarely mentioned Levin's name, he saw that his absence had been felt by them as well. Anya became subdued and moody, a behavior he had not observed in her for so long. Each time she came to the Cloister she would ask if there were any news. She never mentioned Levin by name, but Dan knew what she meant. It made him reflect how much they had all changed or been changed by the events of the past few years.

Finally, in spite of his hesitation, Dan could not wait any longer. He called Levin's cell phone, but there was no response.

116. Thompson & Co.

Levin glanced down at the face of his cell phone which was silently vibrating and saw the caller's name appear on the dial. He placed the phone back in his pocket and returned to his conversation with Gregory Thompson at his office in Washington.

"It is a real pleasure to see you again, Kurt, after such a long time. It must be a year since our last contact. I heard you had left Mossad and joined MAI full-time. I'm not surprised. I always thought that the espionage business was a little out of your line." Then he laughed as if he had said something clever.

"Actually, it is almost ten months to the day since our last communication," Levin replied. "That was the day I sent you the SMS about the package. I assumed when you did not reply that you had received and understood my message perfectly."

A look of doubt and confusion came upon Thompson's face, which appeared genuine. But Levin knew better than to trust appearances when dealing with an experienced diplomat like Thompson. "SMS? Oh, yes. I recall receiving an enigmatic message about some package from you. Quite frankly, I had not the faintest idea what it meant. I make it a practice to always reply to calls from my friends. As a matter of fact I did try calling you back a couple of days later. You answered the phone but when I said hello, you disconnected."

Now it was Levin's turn to look confused. He knew Thompson was capable of any fabrication, but his reply sounded genuine enough. "In any case," Levin continued, "things quieted down after that and returned to a normal routine, so I assumed you had received and understood my message and thought there was no further need for communication from my side."

Thompson stared at him with a steely grin on his face. Levin was sure he had understood the implications behind his last statement. Quickly changing the subject, Thompson asked, "So what type of work are you doing at MAI, Kurt? I hope it is as interesting and challenging as your earlier assignments."

"As a matter of fact," Levin replied, intently concentrating on Thompson's face, "I am finding my present assignment absolutely fascinating. It is a form of historical research of sorts. My subject is hedge funds."

Thompson suppressed but could not control the reflex reaction that coursed through his body and appeared on his tranquil surface as an imperceptible shake of the head and two rapid blinks of his eyes. Levin had been trained to note such symptoms and understood that subtle response as clearly as if Thompson had stood up and shouted. Feigning surprise, Thompson responded, "Hedge funds? So I see you have made a complete shift from international security to personal economics! Well, I suppose a time comes when even dedicated public servants like us have to start thinking of their own personal welfare."

Levin smiled and shook his head. "Oh, please don't misunderstand me. I am not studying this for personal profit. My interest is more historical. I have been researching the collapse of a very large hedge fund called LTCM in the late 1990s and the unusual initiative taken by the Federal Reserve to save it. Are you familiar with it?"

Thompson paused as if to recollect the name. "That name sounds familiar. Yes, I believe I recall some media reports about it." Then he again changed the subject. "Well, what brings you to Washington, Kurt? Is there anything particular I can do for you or is this visit just a courtesy call?"

"Oh, it's strictly a courtesy call," Levin replied, "for old times' sake; unless, of course, you happen to know anything that can help me in my research on LTCM?"

"You know I am strictly a political person, Kurt. I never could understand all that stuff about leveraged buy-outs and arbitrage," he said with an expression of dull-witted humor.

"That's odd," Levin retorted. "I thought I recalled that you come from a Wall Street business family with a long tradition of expertise in such matters. That's particularly why I thought you might be of help."

Thompson's eyes searched Levin's face for a sign of his real meaning and just how much he really knew. "Afraid I cannot help you much there, Kurt. I left all that to my father and brother. My heart and soul is given completely to public service." Then glancing down at his watch, "Now I am afraid you will have to excuse me. I am already running late for another meeting. Very nice of you to drop in."

Kurt stood up and smiled. "Yes, I do apologize for this unscheduled visit. Next time I am in Washington, I will give you advance notice. This visit came up quite suddenly because of unexpected developments in California. I do hate surprises and I am sure you do too, so I'll try to avoid them in future."

As Levin left the room, Thompson's smile turned to an expression of icy rage. He pounded his fist on the table and picked up the phone.

An hour later Dan received a call from Levin. Levin spoke before Dan could formulate a question or an explanation for why he was calling. "I am on my way home, Dan. I'll see you tomorrow and explain everything then. Is everything OK there?" he asked. Dan said it was and spoke briefly of his discussions with Stearne and progress on the nine levels, then ended the call. Although there had been no exchange of information, no explanations, Dan suddenly felt a wave of relief untying knots in his nerves which he did not even know had been tied. He sent word to his partners and then waited patiently for Levin to arrive.

Levin arrived at the office at 11 am the next morning and went directly to the Cloister where he found Stearne in the middle of a long explanation to Dan regarding fallacies in neo-Darwinian evolutionary theory. "You were probably taught in high school or college that in his *The Origin of Species* Charles Darwin disproved the Lamarckian theory of acquired characteristics. As a matter of fact, Darwin was himself a strong believer in the notion that individuals could pass on characteristics acquired during their lifetime, like the proverbial giraffe that stretched his neck to reach branches high on the trees to find its dinner. This just goes to show that scientists as well as communists know how to rewrite history to make it read in support of their thesis."

Dan immediately saw from Levin's face that he had something important to say and offered to join Levin in the other room so they would not disturb the professor. But Levin said he thought it would be useful if Stearne also heard his report, since it arose directly from leads generated by the professor's insights. "I've just returned from Washington, where I met Thompson. I did not tell you earlier, but after the last break-in attempt at your apartment, I came to the conclusion that he might have been behind it. So just as a wild gamble, I sent him an SMS saying that his effort to get the package, meaning *The Book*, had failed. I thought if he were really behind it, he might call to find out how I had known or how much I knew. But at the time, he did not respond to my bait."

Dan now understood the reason for Thompson's call, the call he received while Levin was taking a shower, and suddenly was filled with regret for the suspicions he had harbored after that about Levin's loyalty. He would have loved to let the whole thing pass without mention, but his conscience would not permit it, so he interrupted Levin to say, "As a matter of fact, he did take the bait, Kurt. Thompson called your cell phone two days after the break-in while you were in the bathroom. Thinking it might be one of our partners, I answered the phone. Thompson must have thought it was you. He told me that he had received your SMS about the package. When I recognized it was Thompson, I immediately hung up. I know I should have told you at the time, but I was so surprised to learn that you were in contact with Thompson and the mention of a package sounded so much like a reference to *The Book*, that ... well, frankly..."

"Don't say anything more, Dan. It is my fault, not yours. I should have confided in you about my suspicions and my initiative. It was foolish and wrong on my part. If I had received Thompson's call as you did, I would have been suspicious too."

"Excuse me, gentlemen," Stearne said, "I hate to interrupt your mutual apologies, but I fail to grasp what this has to do with our unsolved mystery."

Levin resumed his narrative. Based on Stearne's leads, he had asked a colleague of his at Mossad to research the largest hedge funds and send him all available information on their founders, managers and major investors - information that was not publicly available but which Mossad might have access to. The initial batch of information did not provide much help. But a second installment turned up something significant. It revealed that Gregory Thompson's father, Leonard, had been one of the principal investors in Long Term Capital Management, at one time the world's largest hedge fund known for its speculative trading in derivatives with two Nobel Prize winning economists on its advisory board. In 1998, the fund was able to borrow one hundred thirty billion based on equity of only five billion dollars and invested in off-balance sheet derivative positions amounting to \$1.5 trillion, a leveraging of over 300 to 1. The East Asia financial crisis and a default on bond payments by the Russian Government resulted in collapse of the fund's value and threatened to wipe it out. Since so much of its money was borrowed from leading international banks, the Federal Reserve jumped in with an unprecedented bail-out package. The fund closed two years later. Now at the time of the bail-out, Gregory Thompson was working as a high level political consultant for one of Washington's most powerful lobbyists. There were rumors at the time of pressure from Republicans in the US Senate Appropriations Committee for extension of support to the fund. It seems that Thompson also was known to be closely associated with one of the directors of the NY Federal Reserve Bank that granted the bail out.

“This is what I could learn during ten days in New York. Before leaving for Washington, I set in place some further inquiries to find out about other people connected with the fund, Leonard Thompson’s association with other funds, financial institutions and politicians, as well as further background on Gregory Thompson. So far I have been able to gather information on Leonard’s connections with five of the largest hedge funds presently in operation. I am working through a Mossad contact at the Treasury on correlating his associations with those of other key investors to see whether we can identify a consistent pattern of association between groups of individuals or institutions. Once we know who some of the others are, we can try to trace back their roots into the past to see if any of these families were associated with the Round Table Group professor referred to earlier.”

“Then you went to meet Thompson?” Dan said, eager to bring Levin to the subject of that meeting.

“I saw him yesterday. I did not call in advance. I just showed up at State and asked for him. I was admitted to his office almost immediately. Thompson was still very cordial but with a penetrating look that sought to figure out precisely why I had come. Before I could even sit down. I returned his hard glance without speaking a word, trying to practice what the *Archives* refer to as silent will.” A look of curiosity sprang to Stearne’s face at the use of that term, but he refrained from interrupting.

Levin narrated the previous day’s conversation with Thompson and his purpose in calling on Thompson. “I was almost positive that Thompson was behind the last break-in attempt at Dan’s apartment, but I could not be sure about the attack on Gavoché’s facilities. One way or the other, I knew I had enough information to discourage Thompson from further attacks. I wanted to let him know that, without making any claims which he could deny or threats which might alarm him.”

Stearne had been listening intently to Levin’s narrative. He began asking questions regarding Thompson, his family, upbringing, education, prior work, the lobbying organization, his father, and the hedge fund. After assimilating all that Levin could tell him, he said. “You have done a remarkable job, Kurt, of unearthing relevant information. No doubt the circumstantial evidence pointing to Thompson is compelling. But I am not sure you have been very wise in confronting him as you did.”

“I have been thinking the same thing,” Levin responded. “I had initially hoped that the hint of our suspicions would slow him down and temper his aggressiveness against us. But am not at all sure it will have that effect. This man is very aware of the power he wields and seems to think he is invulnerable. As far as we are concerned, he may be right.”

117. Numbers

The Infinite is not a sum of things, it is That which is all things and more.

Indeed whatever appears to us as a zero is packed with force, teeming with power of existence, full of actual or potential contents. It is a zero which is All or an indefinable Infinite which appears to the mind a blank, because mind grasps only finite constructions, but is in fact the only true Existence.

This is the complete and That is the complete; subtract the complete from the complete, the complete is the remainder.

All things are the symbols through which we draw nearer to That. The Infinity of unity is one symbol, the infinity of multiplicity is another. What we call finite is a representative figure of something of the Infinite.

The Book

Often when Stearne was not up in the Cloister reading and talking with Dan, he could be found wandering the halls of MAI or sitting in the cafeteria chatting with employees about various aspects of the business. The professor's reputation as a political revolutionary and one of the foremost philosophers on artificial intelligence earned him celebrity status within the company. People were eager to interact with him and ask his views on a wide range of issues. Stearne could be as charming and entertaining as he was insightful and provocative, so it was not uncommon to hear peals of laughter emanating from conversations in which he partook. He sometimes poked fun at his own lack of qualifications to be interacting with mathematicians and computational engineers. At others he poked fun at the apparently narrow focus and limited range of knowledge which MAI staff and youth in general possessed compared to his own wide-ranging, historical perspective. One day he could be found listening to a presentation by Vinay and Eric Green to a group of Chinese corporate leaders on the application of AIS⁸ by leading American and European companies. The next he could be found with Edna Lambton welcoming a group of new recruits or Jean La Brec addressing representatives of BAG, the Berkeley *Accomplish* users group. He often stopped in at MRL, abbreviation for Mathematical Research Laboratory, where Anya was testing new algorithms for conversion of theoretical principles into software, sometimes to listen, sometimes to tease and occasionally to explore a serious question he had about Anya's work.

Anya, too, had questions for the professor. One day when he stuck his head in the door at a little past 5 pm, she appeared particularly delighted by his appearance and eager to discuss something she had on her mind. "Professor, I have something I have been meaning to ask you but never found the right opportunity."

"Anya, I am at your service, but on one condition. Drop the professor tag, if you don't mind. I know I am nearly twice your age, but I like to think of myself as an eternal youth. The name is Joe, if you please."

Anya smiled broadly, nodded and resumed, "The truth is I prefer calling you professor, I like it, but if you insist, then Joe it is. I have been thinking a lot about these people you refer to as the Roundtable Group or whoever they are. You say that they are in quest of a formula for infinite wealth and believe that *The Book* holds the key for them. I don't get it," she said shaking her head. "How could they possibly expect to derive practically useful knowledge about hedge fund or stock market investments from a book of metaphysics? As I understand you, these people are wealthy and accomplished, not some fringe mystical cult. Surely they should know better."

"Anya, I see that your remarkable knowledge of mathematical theory does not include an appreciation of the history of your discipline. Otherwise, you would know that mathematics and mysticism have common roots. Long before modern science discovered the equations for electrical energy, conversion of energy into matter and the like, great mystics were aware of the mathematical order and precision governing the universe and the power of numbers. The ancient mystical traditions in Egypt, Chaldea, India and Greece, the Kabbalah, the Tarot, Vedic astrology, alchemy are all based on the power of numbers. Two is the number of duality. Three is the number of creation. Eight is the infinite. Nine is birth. Twelve is perfect creation. Forty-eight is manifestation of the infinite. And so forth.

"It may surprise you to know that the Fibonacci numbers first appeared in Sanskrit works dating from the Fifth century BC. Pythagoras, who developed his famous theorem for the triangle based on irrational numbers at about the same time, was a mystical philosopher, not a mathematician. Haven't you heard about Descartes' secret notebook? He was almost certainly a member of the Rosicrucians. After Descartes' death, Leibnitz went in search of the notebook and found it in the possession of Claude Clerselier. It contained sixteen pages of coded matter. Clerselier allowed him to copy only a couple of pages. Leibnitz was such a brilliant mathematician that he was able to decode it on the spot. His scribbled notes are all the

record that remains. What he discovered in that notebook transformed mathematics. Descartes' mathematical theories were paths to understanding the order and mystery of the cosmos. He kept the notebook hidden because it contained a formula that supported Copernicus' model of the solar system, which would have led to his persecution by the Inquisition.

“Kurt Gödel, one of the greatest philosophers of the twentieth century, dedicated considerable thought to exploring the linkages between mathematics and mysticism. These are only a few examples. I could go on and on. Didn't they teach you anything in Moscow? I know that religion and mysticism were frowned upon in Communist Russia, but an understanding of the relationship between numbers and ultimate concepts of reality is essential for a full knowledge of mathematics. Take the zero, for instance. Pardon me for saying so, but I am yet to meet a mathematician—a living one that is—who understands Srinivasa Ramanujan's explanation. He said, “Zero is God, Infinity is Manifestation.” The greatest mathematician of the twentieth century, if not of all time, understood that the zero does not represent nothingness. It is a symbol for the Absolute Reality that contains all possibilities, the unmanifest infinite. And his conception of infinity was far different from our modern concept of a string of unending numbers spreading out in one or two directions. For him, infinity was multidimensional. It represents a unlimited extension and multiplication in all possible directions or dimensions, which may be best expressed to the modern mind as infinity to the power of infinity.”

Anya listened avidly but impatiently for an answer to her question, and finally interrupted Stearne's lecture to say, “Professor, Joe, this is fascinating. But I don't see what it has to do with creating infinite money on Wall Street. I have heard stories of investors consulting astrologers and numerologists to pick lucky numbers and days for buying and selling, but I cannot imagine hedge fund managers risking billions of dollars on that kind of superstition.”

“Ah, my Romanoff princess, how do you expect knowledge to ever enter an agitated mind? Patience is the first virtue of the both the mystic and the mathematician. With this background, I will come to your question, directly. It's ironic that you of all people are asking it. I would have expected it from Ray or Vinay, but not you. Anyway, let me proceed by asking you a question. What is the basis for CATS, the computer-aided trading models currently employed on the Street?”

Anya paused to consider, then replied. “I have not studied them, but I presume they are based on double auction algorithms that analyze past trends in prices, complex relationships between variables and feedback loops to minimize risks and maximize probable returns.”

“Not a bad guess for a novice, actually,” Stearne said with a smile. “CATS mine past data for hidden relationships and models their behavior on the past. That is why they can never be infallible. They are always limited to what has occurred in the past. They can only react. They can never anticipate. They give the illusory appearance of knowledge. Actually they are just very quick imitators. They watch what other people do and anticipate the outcome. That is not knowledge.

“Now *The Book* on the other hand is based on universal laws, not past trends. It bases itself on knowledge, not data. Its algorithms relate any specific activity to the whole of which everything is a part. Applied to the stock market, it would relate changes in prices to universal or at least global movements and underlying social processes. CATS could never have anticipated the dot.com boom or the dot.com bust. *The Book* could and would. It would distinguish sound fundamentals from speculative fervor every time. If I am correct, the people who are after *The Book* fully understand the value of that knowledge. Their predecessors took a bath in 1929 and many of them were wiped out. I believe they have been looking to correct that deficiency in knowledge ever since. To them, *The Book* is the Holy Grail.”

Stearne was so caught up in what he was saying, he had not noticed the door to the lab opening several times. When he suddenly mentioned *The Book*, Anya signalled to him that other people had entered the room. He was surprised when he glanced behind him to find five senior MRL staff sitting and listening attentively. Encouraged by the swelling audience, he turned full around and addressed the group. “Some of the greatest minds of the past have sought to discover the ultimate meaning of the universe in numbers. You people are engaged in an equally remarkable effort in the other direction—to convert ultimate knowledge into numerical sequences. We know it is possible because we do it all the time. The digitization of speech, sound, image and text is a standing testament to the fact that any sensory perception can be converted into numbers and converted back again. But so far the effort has been confined to physical phenomena—sound, light, form, temperature, pressure, quantity, distance, duration. Now you are trying to repeat the conquest at the level of life events—sequences of events, actions, attitudes, intentions—not based on statistical analysis of past events but based on fundamental laws of life. It's an incredible enterprise. You have already shown that it is possible to an extent never before imagined. Although you may have heard me poking fun at Anya's ignorance, I stand in awe of your accomplishment.”

Anya went up and hugged the professor and whispered in his ear not to speak about *The Book* in the presence of MAI staff. Thinking she was congratulating him, everyone else in the room burst into applause. He blushed and looked embarrassed at his own indiscretion and took the first opportunity to apologize to her when they were once again by themselves. They both realized it was too late to do anything but hope the others thought they were referring to some reference book under discussion before they had entered the room.

Anya then came back to the subject. “I still don’t fully understand, Joe. It is all very fine to talk of infinity theoretically. That’s all it is in mathematics. In actuality, there is no such thing as infinity. We have only very large quantities beyond our capacity to count or measure, boundless magnitudes without apparent end. But you are talking about infinity as if it were a practical concept.”

“Not me,” Anya, “*The Book*. That is the whole point I was trying to come to. The breakthrough concept in *The Book* is just that—the *concept of infinity*. That is where *The Book* departs from all known philosophies. That is the source of its enormous power. According to *The Book*, zero and infinity are practically related to one another, the one gives rise to the other. Or to put it another way, zero represents the unmanifest infinite and infinity represents the manifest zero. According to this view, it is both theoretically and practically possible to manifest anything infinitely, including money.

“The central purpose of *The Book* is not to present a philosophy. It is to present a practical knowledge, a formula, by which the Infinite can be made to emerge out of the finite. I understood it clearly only from reading the *Archives*, when I came across the phrase *practical concept of infinity*. That is what *The Book* means by the process of self-multiplication. The challenge you have undertaken is to understand that process and find a way to express it in mathematical terms.”

118. Pollution

During the first five months after its launch, demand for *Accomplish* grew rapidly and crossed a half million users, bringing in a revenue of fifty million dollars during the period. It was particularly popular among the younger generation, self-employed entrepreneurs and small businesses. Every day a user discovered another innovative way to adapt the product to a new application, a new type of service, a new way of making money. Reports began appearing in the press about sixteen and seventeen year olds who were earning more than their parents. There was even a report of a twelve year old boy who responded to a call for proposals from a gold mining company on how to raise its productivity and earned \$2.5 million based on recommendations generated by *Accomplish*. Countless new business models emerged. Myriad types of consultants and self-proclaimed experts arose. New businesses were established offering training and accreditation on application of *Accomplish* in a variety of new fields, ranging from investment advisors, business consultants and investment bankers to executive recruiters, marriage counselors and psychotherapists.

Users were not the only beneficiaries. The program benefitted equally from being used. Each individual innovation created a new web of linkages between the software's knowledge-based algorithms and various activities of life. Each result fed back into the central database resulted in a self-adjusting refinement and modification of the algorithms to fine-tune the formulas linking principle with practice.

Many users experienced a steep learning curve with the software, not because it was difficult, but because they did not know how it arrived at its decisions and were not sure they could trust in them. Those who were more intuitive or more trusting found they could master the program quickly and achieve what were often astonishing results. *Accomplish* also had a learning curve for adapting to various usages and applications, but that curve became shorter as it gained experience working with users.

Many users continued to encounter problems with the software, because of the software's in-built bias toward certain types of users. MAI hoped to eliminate this bias with the launch of *Accomplish*² on January 1, 2008. Meanwhile, the company intensified its support to slow-learners and introduced a number of tools to help them adapt. It also introduced a thirty-day money back guarantee and a free upgrade policy.

But all that was not enough to stem a rising tide of dissatisfaction. At first the company thought that the increasing customer complaints arose merely from the fact that more people and different types of people were using the product. But it soon became apparent that even advanced users were beginning to report difficulties and problems that had not surfaced in the past.

It was only during the first week of December that the true nature of the problem became apparent. Late one evening, Anya walked into the Cloister with a look of deep distress on her face. Dan, Levin, Ray and Vinay were busy planning for the launch of *Accomplish*². A further upgrade to the data security system had been installed three days earlier. Anya's team was in the process of running data integrity checks and protocols to test it against a variety of intrusions. Everything seemed to check out. Meanwhile a member of her team researching some data anomalies reported by the *Accomplish* customer service staff had uncovered what appeared to be a serious error. Further investigation revealed that *Accomplish* was working flawlessly, but the data on which it was basing its recommendations had become polluted. She insisted on the word 'polluted'. This was not data corruption. It appeared to be an intentional pollution of the database with erroneous and fictitious information. Had it come from one or two or even a dozen users, the effects would have been negligible. But preliminary tests indicated that it was being generated by hundreds and possibility thousands of users.

Anya immediately contacted Boris Nazenko, one of her old colleagues from Moscow, who now worked for the top companies in Silicon Valley and was reputed to be among the foremost computer security experts in the world. She knew Boris had spent years as a black hatter, illegally hacking systems for personal profit, the Russian Government and on occasion the Russian mafia, before discovering that working for corporates to stop illegal hacking could be even more lucrative and much safer. Boris drove over that afternoon from Palo Alto. After spending three hours examining the system, he concluded that MAI was under attack from a black hatter with extraordinary knowledge and skill supported by the latest intrusion technology available on the market and a team of at least hundred full time staff exploiting the loopholes he was creating in the system. Anya was surprised to learn that there was no evidence that information was being stolen from MAI's mainframes. "There has been virtually no outflow of data at all, which is one of the reasons it took us so long to notice the problem. On the contrary, we are experiencing a massive inflow of data from a group of our own users, data which is apparently fictitious and designed to skew recommendations by *Accomplish* to such an extent that they generate opposite results. At first we could not detect the problem, because the corruption was on a small scale and apparently occurred in innocuous areas.

But it has been done with such intimate knowledge of the structure of the algorithms on which *Accomplish* is based that those small distortions have had disproportionately large consequences—the way the report of an event orally transmitted and retransmitted thousands of times from one person to another undergoes minor modification with each transfer until it becomes totally unrecognizable, and therefore, false.”

“How serious is the damage?” Ray asked. “Boris is not sure yet, but it appears that the process has been going on for several months, probably from the time Luis Gavoché’s own security was breached. Boris says they must have penetrated our system the very same day and obtained access to the algorithms. After that they did not need to intrude further. They only needed to develop data that would fool the algorithms into false conclusions. The rest was done working with *Accomplish* like any normal user but feeding in false results, which were then used by *Accomplish* to modify recommendations to other users. Over time the system became more and more corrupted.” Anya said she would come back with a full report as soon as Boris had completed his investigation.

Two days later, the partners met with Boris in the executive conference room to hear his report. He confirmed that the work had been done by people with the highest level of expertise, not only in hacking into the system, but in comprehending the nature of the algorithms incorporated in *Accomplish*. He confessed that he himself was incapable of reproducing the distortions they had brought about. Nor did he know a way to stop them from polluting the system further, since they were relying only on the standard protocols applied by all users.

Stearne happened to be present at the time of the meeting and Dan invited him to sit in. After quietly listening to the partners discuss various options for two hours, the professor offered a comment. “Two things are evident. First, it may seem like a small consolation, but these people have done you a great favor. You are extremely fortunate that the problem has surfaced at this stage and not later, when millions of people would be using the system. Second, and more seriously, it points to a fundamental defect in program design. While *Accomplish* has the capacity to formulate correct answers, it has not yet acquired the capacity to discriminate against false information. You have been so focused on translating knowledge into algorithms that you have ignored the equally important challenge of discovering principles on which falsehood is based. You need to go back to *The Book* to look for an answer.”

After further discussion, the team decided to postpone the launch of *Accomplish*² indefinitely, until this issue could be resolved. Meanwhile, marketing of *Accomplish* would be suspended and users would be advised that a critical defect had been consciously introduced by hackers which undermined the integrity of its functioning.

Immediately following the company’s press release, MAI was inundated by phone calls and emails demanding further information and advice. The company adopted a policy of full disclosure and full responsibility. It published detailed information on the nature and source of the problem and offered a refund to all users who requested it. The same day the company suspended network support for the product. It could still be used as a stand-alone desktop application by individuals without danger of data pollution, but could not be networked to draw upon the experience of other users.

In the first two weeks, approximately 50 percent of existing customers applied for full refunds and by the end of December more than 80 percent had done so. At this rate *Accomplish* would be a dead product within a few months and *Accomplish*² would be stillborn before it even reached the beta test phase.

Several class-action lawsuits for total damages valued at more than five hundred million dollars were filed against MAI imputing negligence and responsibility for losses and damages, real or imaginary, that had been incurred by users. Daily, more users signed up as plaintiffs and the company’s potential liability soared higher. There was no way of knowing at this stage how the courts would decide on these claims, but considering that the company had fully acknowledged its responsibility for the defects, lawyers estimated MAI’s liability may range between two hundred fifty million dollars and one billion dollars. MAI’s own insurer filed a case of negligence against the company in order to escape liability in the class-action suits. In spite of the spiraling revenues and income from AIS⁸, if the insurer’s case was successful and actual damages by customers were anything close to this range, the company would be pushed to the brink of bankruptcy.

As a self-defensive legal measure, the company approached the US District Attorney’s office with a complaint of criminal acts by unknown parties intended to destroy the product and the company. A criminal investigation was launched, but it soon became apparent that there was little or no evidence to prove either than a crime had been committed or who was responsible.

The threat to MAI had assumed such great magnitude that it was difficult for the partners to think or talk of anything else during this period. Disappointed, disillusioned and irate customers became more and more vocal, aggressive and demanding. As a consequence, progress on *Accomplish*² ground to a halt and morale at all levels sank to the lowest ebb anyone could remember since the initial conception of AIS¹. When Anya recalled Stearne's comment about the company's good fortune in being attacked, a sense of anger or despair surged up from her gut. She knew the professor meant well, but it was difficult for her to see or feel anything but disaster in the crisis brought on by this attack.

119. The Offer

During the last week of January, Bill received a call from Oppenhauer's lawyers, a top New York firm, demanding on behalf of their shareholder complete disclosure regarding the company's financial position and liabilities arising from law suits on file. A week after receiving Bill's written response, the lawyers asked for a meeting in Berkeley. Bill met three representatives of the firm in his office together with Randy Stephens, CFO. Bill expected the lawyers to focus on the company's financial performance and its capacity to handle the threat. Instead they came with a very different purpose—an offer from Oppenhauer's group to buy MAI.

Rolf Herder, who headed the team from New York, explained what Oppenhauer had in mind. "From the looks of it, MAI could well be out of business before the end of the year and all of the shareholders would lose everything they have in the company. Mr. Oppenhauer and his group can absorb their own loses without too much trouble, but he is concerned about the impact it would have on all of you and on those employees who own shares. It would be a great pity after all the wonderful work you have done to walk away from this work with absolutely nothing to show for it but a scandal and financial disaster. I don't believe that any of the major shareholders have managed to take much out of the company thus far. You, Bill, of course managed to pay off a large family debt to Mr. Oppenhauer, but I doubt you have much to show for your work here either."

Bill listened without responding, but with a rising sense of anger and tension. He refused to even encourage Herder by asking what offer Oppenhauer intended to make. After waiting a few minutes, Herder continued without invitation. "I am instructed by my client to offer to assume the complete financial liability for the pending lawsuits and to pay you in addition to that amount a sum of twenty-five million dollars to be divided among the existing shareholders proportionate to their holding. I am sure that under the circumstances you will agree, this offer is most generous."

Bill said, "And in return?"

"Why I assumed that was self-evident," Herder replied. "In return for all the outstanding shares in the company."

Bill thanked Herder and his associated for coming all the way to California with Oppenhauer's offer and then he indicated that he considered the meeting over. Herder looked surprised that Bill was adjourning the meeting without discussing Oppenhauer's offer more fully. When he inquired whether Bill needed any further details on the offer, Bill replied, "I will inform the partners of your offer. Good day."

When Bill reported Oppenhauer's proposal to the partners later in the afternoon, there was an expression of guilt on his face as he did so, as if he considered himself responsible for the whole difficulty because it was he who had introduced Oppenhauer in the first place. Anya was simply furious. Vinay couldn't remember ever seeing her so angry about anything before. He had an impulse to try to assuage her feelings, but it occurred to him that anger was a healthier response than depression or despair, his own first reaction to their situation, which he was struggling to overcome. He saw Ray deeply disturbed, as if the proposal had finally brought home to him the magnitude of their predicament for the first time. Levin sat quietly without speaking. He had only a modest financial stake in the company, in spite of the key role he had played over the past one year. But he exuded a feeling of calm strength and quiet resolve, like a block of granite, which had a stabilizing and reassuring influence on the whole group. Dan's response remained a mystery to Vinay. He sensed that Dan was struggling with all the anxieties which oppressed the others, but he was trying to keep his mind above the dizzying whirlwind of the conflict, trying to see something on a distant horizon that might give him a clue how he should respond. What that something might be, Vinay had not the faintest idea. The very idea of looking for an answer outside the perplexing array of contradictory facts that besieged them was more than his mind was presently capable of attempting.

The discussion of Oppenhauer's proposal went on for hours, but it rarely came to the central issue. It focused more on options and alternatives, maybes and possibilities that might make the problem disappear so they did not have to deal with the decision at all. Dan sat back and listened without comment. Levin spoke only when a question was put to him. Anya, when her anger subsided, analyzed each of the options on behalf of the group. Ray raised possible problems that they needed to overcome. Bill enumerated possible strategies for containing and minimizing the legal threat. He explained the current status of the product liability lawsuits, the case for and against their insurer, the motives and legitimacy of the user claims, the main steps in the litigation process and the likely timeframe. He emphasized the point that the one thing going in their favor was time. They had at least a few years before any case could be brought to judgment

and longer if there was an appeal. The most important thing as he saw it was to demonstrate absolute integrity and transparency in alerting users to the defect, a policy which they had followed from the moment they learned of the attack. He also recommended engaging a team of researchers to investigate the largest individual claims, so that they could challenge those that were frivolous.

When the momentum of the discussion subsided, Dan turned to Bill and said, “Double Oppenhauer’s offer and send it back to him.”

Bill looked confused and asked Dan for clarification. “Oppenhauer has offered us twenty five million dollars for the 65 percent of shares which are not already his. Offer him fifty million dollars for his 35 percent share. That means we value his shares at four times the amount he has offered us.”

“Why should we offer him four times?” Bill asked. “Why not offer him \$12.5 million for his share, that’s the same rate he has offered us? Or twenty five million dollars, which is double that rate?”

“Because he will not accept either of those offers or even take them seriously. I don’t want to play games with Oppenhauer even if he tries to taunt us in the way he has,” Dan said. “He must know we would not consider giving up MAI for what he is offering. He only wants to make us feel that he regards our situation as desperate. I don’t want to play his game. I want him to believe that our offer is genuine. I want him to understand that if he really intends to make an offer for MAI, he has to make a serious offer or stop wasting his and our time.”

“So you mean you would seriously consider selling for four times his current offer?” Ray asked.

Dan shook his head vigorously and smiled broadly for the first time in days. “As long as we are all together on this, I have no intention of selling for any price at all, even forty times that much. I hope he takes up our offer or asks for twice or four times that much. I am still prepared to pay.”

The strained expression on Ray’s face seemed to melt away when he heard those reassuring words. Dan’s confidence and determination were infectious. Vinay felt it also and began to joke about the expression on Oppenhauer’s face when he received their reply. Anya’s self-righteous aggressiveness settled down into a feeling of controlled energy. An intensity of silent strength seemed to fill the conference room.

Then Dan turned to other matters. His partners were almost surprised when he wanted to discuss the plan and timeframe for completing *Accomplish*⁷. The first version of *Accomplish* had taken such a beating in the marketplace that most people within the company had come to believe it was beyond redemption or resurrection. Obviously, Dan thought differently. Ray and Anya set out a strategy to resume work on the new version. Dan suggested that this time they consult AIS⁸ regarding every aspect of the strategy and present its recommendations at the next meeting. Vinay raised the issue of layoffs in the marketing department. Since all marketing of *Accomplish* had been suspended, he suggested that they consider downsizing until a new version was ready.

Dan seemed to ignore Vinay’s suggestion, as if he had not heard it. Instead he asked Bill and Vinay about their plans to accelerate growth of AIS⁸. Bill reported that the calamity with *Accomplish* had definitely slowed growth of AIS⁸ as well, but so far the impact had been minimal. Their corporate users were still achieving record results using the software and were not likely to abandon a product that was performing so strongly. The problem was more likely to impact new corporate clients who heard about the controversy with *Accomplish* and were confused about the similarities and differences between the products. Dan suggested that Vinay redirect 75 percent of the marketing people he had on *Accomplish* to AIS⁸ instead, and utilize the remainder to strengthen customer service for those few *Accomplish* users that remained loyal to the product. He also asked Vinay to identify and explore some new markets that they had not yet penetrated with AIS⁸. “We have only barely begun to tap the corporate market in the USA and internationally and that must remain our focus. But let’s not limit ourselves to that. You have extra people now. Set up a task force to come up with some totally new ideas, new applications, new customers. And don’t forget to consult AIS⁸ itself for recommendations.”

By the end of the meeting, the sense of desolation and catastrophe hanging over the team had disappeared. Levin witnessed the transformation in silent admiration. At that moment he knew that MAI would somehow find a way out of the situation. He even felt some inexplicable sense of exhilaration that he could not describe. This, he thought, is why he was at MAI and not back working with Mossad or lecturing in Jerusalem.

120. Falsehood

The subjective and objective truth of things are both real, they are two sides of the same Reality.

The Book

When Dan got back to the Cloister that evening, he found Stearne sitting in the study in deep concentration. He remained in that position, almost motionless, until Limpia put dinner on the table and coaxed him to join Dan in the outer room. Over the meal, the professor narrated to Dan what he had just discovered in *The Book*.

“The answer is there, I am sure of it, Dan. *The Book* contains a whole chapter on the origin and nature of falsehood. It makes difficult reading, but the basic underlying principles are clear. Falsehood arises from two factors—mind and ego. Mind knows by division and divides reality into an infinite number of infinitesimal parts and aspects. In the process of dividing, it discovers greater knowledge of the distinguishing aspects of the parts, but simultaneously loses sight of the greater whole of which each aspect is an integral part. That division leads to specialized, fragmented and partial knowledge, which is the essential characteristic of ignorance in all the various manifestations that we see in the world around us—fragmentation of the sciences and other academic disciplines and of the specialties within disciplines, fragmentation of functions in governments, companies and other organizations, and so forth. Each specialization acquires a partial mastery of one aspect but loses the wider, integral perspective that is the basis for all true Knowledge. The expert is by definition ignorant. It is what *The Book* refers to as exclusive concentration.

“The Mind’s capacity to divide introduces another more fatal error as well. It not only divides reality into many pieces. It also divides the subject from the object, the observer from the object of observation, human being from the world he lives in. It is the old Cartesian dilemma. Mind thinks of itself as a detached impartial witness of life, as if it can exist independently of the world around it. Quantum mechanics debunked this illusion almost a century ago, but the myth still persists even today. Ironically, it is especially pronounced among the social sciences where you would least expect to find it. Most physicists have long ago come to accept that the observer and the act of observation are inseparable from the object or event observed.

“This tendency has been taken so far that we now use the word knowledge only with reference to what can be known objectively, that is externally, through the senses, rather than subjectively by identification in consciousness with it. It is a complete inversion of truth. We separate and divorce ourselves from things in an effort to know them better, whereas in fact we can only know anything by identifying with it in consciousness. This leads to the absurd position that we regard objective knowledge as truth and subjective experience as irrational and biased perception. The irrationality of this position has penetrated into the depths of our language and blinded us to the truth.

“This divorce of subject from object has led to the flawed logic and fatal tendency of modern science to claim that it is not responsible for the results of its own application. A physicist who creates a nuclear weapon says he cannot be held responsible if some foolish politician decides to actually build it or some mad general decides to use it. Chemists who produce chemicals that pollute claim their innocence, but actually it is ignorance that they exhibit. They are ignorant of the whole of life in which they act and therefore unable to anticipate the consequences of their action.

“That is the source of ignorance. But it is not sufficient to explain falsehood. That is where ego comes in. Falsehood is conscious, willful distortion of the truth in order to serve the selfish, narrow purposes of a separate and isolated individual. Ego is the false sense of living a separate and independent existence. Falsehood arises from the illusion that is the intentional application of ignorance or half-truths for personal gain or harm against others. That is what has happened to MAI. You have become victims of intentional falsehood consciously applied to destroy the product and the company.”

Dan listened patiently without interruption to Stearne’s dissertation on one of the greatest unresolved mysteries of existence. Not everything he said was clear, but the essence of the problem came out clearly—division of reality by mind generates ignorance, and willful misapplication of that ignorance generates falsehood. “Your explanation is extremely lucid, professor. But do you have any idea how that explanation can help us formulate a means to eliminate vulnerability to falsehood in the product?”

Stearne nodded. “I believe I do, but I may need some more time to formulate it. Limpia interrupted my thought pattern just at that point in order to call me in to partake of this delicious lasagna. I am thinking of sending my Rosa over here for lessons. I would even suggest we swap cooks for a while, but Juan would

never pardon me for sending his wife away. Anyway, as I was saying, I believe there is a way. But I am not sure the patient will feel up to applying the remedy.”

“What makes you say that, professor?”

“Dan, I have even succeeded in getting Anya to call me Joe and you know how traditional Russian girls are. I think its time you dropped the formality as well. It makes me feel old and detached when I am eager to affirm my youthfulness and sense of involvement.”

After Dan nodded his consent, Stearne continued. “Our objective is to become invulnerable to falsehood. First we have to be able to detect it. Second we have to be able to reject it. The first part is relatively simple. Cut it out at the roots, which means, in the tendency of the mind to divide. That can be done by ensuring that every algorithm built into *Accomplish*² is properly integrated with the whole of which it is a part and that each whole is integrated with greater wholes and so forth. Now in AIS⁸ that would be impossible, because it functions as an isolated, closed system. But *Accomplish*² will be an open, universal system. In principle it is boundless, if not infinite, provided you do not program in limitations and superimpose boundaries on its knowledge. I am not a mathematician, but I am fairly sure that when Anya views the problem in this way, she will be able to identify formulas to circumvent the difficulty. I have a faint recollection that Srinivasa Ramanujan was working on just such a paradigm for boundless manifestation. If necessary she can look at his notebooks for a clue.

“So much for ignorance. Solution to the second problem—falsehood—is practical not mathematical. Here is where I anticipate problems. If I have understood *The Book* properly, the only way to avoid vulnerability to the attack of falsehood is to rid oneself completely of that same vibration in one’s own consciousness, which means transcending the limitations of ego. Now that seems to me an extremely difficult proposition. Personally, I have been trying to rid myself of that personal perspective, sense of pride, prestige, self-importance, self-preservation and selfishness for decades and I find myself more self-centered, narrow-minded, conceited, arrogant and utterly selfish with each passing year. So you see I am hardly in a position to advise others on that score.” Stearne suppressed a mischievous smile as he spoke, that made it obvious to Dan how much he enjoyed this self-deprecating banter. Dan warmed to him for his sincerity and wished he might one day become half as self-effacing as this outwardly pompous professor.

Handing a few pieces of paper to Dan, Stearne continued, “However, if you are still interested in a philosopher’s remedy for ego, I believe you will find all the guidance you need in the *Archives*, particularly this one. It sets forth operational principles that could be incorporated in *Accomplish*². I suggest you study it and we can discuss it further tomorrow. Just now I am afraid that Limpia’s lasagna has gotten the better of my mental powers, and I had better retire while I still am able to. Goodnight.”

121. Litigants

A few days later, MAI's management team met to examine their options to recover from the collapse of *Accomplish* and the pending law suits. Levin began by reporting on the preliminary analysis of product litigation cases filed. "On the face of it, the size of the claims is particularly surprising when you consider that *Accomplish* was only on the market for six months before being withdrawn. When we examine the claims in detail, it turns out that 70 percent of the total value of the claims were filed by less than one thousand users, representing only 0.2 percent of the total users at the time we withdrew the product. That works out to an average claim of one hundred seventy thousand dollars per user among this group. Even if we assume that all of those who claim heavy losses purchased *Accomplish* within the first month it was released, it would mean that they are claiming average losses of thirty thousand dollars per user per month.

"This data raises two interesting issues. First, it makes you wonder what type of users could justify losses of this magnitude. The list of one thousand does not include a single corporation with revenues in excess of five million dollars. In fact, 75 percent of these users are individuals, not businesses. Barring investment bankers (who rarely work alone), stock brokers and successful business consultants, how many are likely to have large enough businesses to justify claims of this magnitude? Very few. We have analyzed a random sample of one hundred of those filing the highest claims. In more than 90 percent of the cases, we were unable to substantiate that these individuals were even engaged in the type of activities for which they have filed claims. In 10 percent of the cases, we already have conclusive evidence that they were not.

"By the way, the thirty thousand dollar figure is significant in another way also. When I first saw it, I began to wonder what successful users of *Accomplish* are earning by means of the software. So we ran a random sample of thousand users from the group of high achievers and found that they actually do estimate the benefit of using *Accomplish* at about thirty thousand dollars per month. The only difference is that they are still enjoying that benefit in spite of the data pollution, while the group of plaintiffs claims to have lost it.

"Now add to that the second interesting observation. The number of those filing large claims—one thousand—corresponds precisely with the estimate made by the security expert, Boris Nazenko, of the number of people who most likely engaged in the scheme to pollute *Accomplish*'s database. Coincidence? Very unlikely."

"Kurt, are you saying that you think the major claimants are the same people who attacked *Accomplish* in the first place?" Vinay asked. Kurt nodded agreement. "So you think they staged this attack in order to later file product liability claims against MAI?"

This time Levin shook his head. "That is very unlikely. I doubt very much that many of their claims can stand up to close scrutiny in court. Also I find it very difficult to believe that one thousand independent individuals joined together in a coordinated attack of this kind. If they did, we would be able to find traces of their collaboration on the web or in their email. In ten instances, we hired hackers to search for traces of such collaboration on the users' own computer systems. Not a single trace could be found."

"I don't understand," Ray said. "If you did not find traces of collaboration than it sounds like they must have each been acting independently, doesn't it?"

"On the contrary," Levin replied, "I think it means that they were acting in collusion but took extreme measures to make sure that no traces could ever be found. Assuming that they had been acting independently, the chances are very high that small groups of collaborators would have emerged among friends and co-workers who joined together to precipitate the scam. No, these thousand people are too clean to be honest."

"But, Kurt," Anya said, "what possible motive could someone have for launching such a massive campaign, unless they believed that their claims had a good chance of being upheld by a court? Why go to all that bother?"

Bill caught the drift of what Kurt had in mind, "I think I know the answer or, perhaps, several plausible answers to that question. The most likely is that they never intended to go to court at all - only to make us think they would. Oppenauer could have masterminded the whole scheme to drive us into a corner so that he could buy MAI at a give-a-way price. Even if *Accomplish* was destroyed in the process, he would still have AIS⁸, which is worth hundred times what he offered for a controlling interest in the company."

Kurt interrupted. "Bill's is a plausible explanation, but I doubt very much that it is true. If Oppenauer were really serious about such a scheme, he would have offered the shareholders a price sufficiently high to compel serious consideration. Actually, his offer was a joke that he must have known you would spurn. Seeing his own investment endangered by the attack, he looked for a way to recoup some

of his losses by buying the company for a song. Perhaps, he thought that the calamity over *Accomplish* would have sapped the owners of the strength and resolve to hold onto the business any longer. Furthermore, I doubt he has the organization to launch an operation of this type in a manner that it cannot be traced back to him.”

“There is, however, another possibility,” Kurt continued. “It is possible that this attack was conceived and coordinated by someone whose primary interest was neither claiming damages nor stealing the company. Their objective may simply have been to destroy *Accomplish*, which is, in fact, what they have done.”

Anya asked, “But why *Accomplish* and not AIS⁸, Kurt? That is where we make our money.”

Levin replied, “Perhaps they see *Accomplish* as the greater long term threat, rather than AIS⁸. And that suggests two possible answers to the question of ‘who?’ One possibility is another software company that views *Accomplish* as a future competitive threat. The other is someone who views the very existence of *Accomplish* and the knowledge on which it is based as a threat to their own principles and beliefs.”

122. Inversions

Late the following afternoon Vinay and Anya both took an hour off to visit the company fitness center on the basement level. Running in tandem at six miles an hour on adjacent treadmills, they were surprised to see Professor Stearne walk in the room with an expressive smile and approach them. “Just the people I was looking for. I thought I might find you both down here. With the kind of work schedule you people maintain, this is probably one of the few opportunities you have to spend some time together. And now the old professor has come to intrude on your privacy. But don’t let me interfere with your exercise. Please continue. I already had a three mile walk downhill coming over here this morning and have another three miles to go uphill this evening—that’s like climbing a mountain at my age—so forgive me for remaining on the sidelines during our chat.”

They were both pleased to see Stearne, though they could not imagine why the professor would look for them here. “What can we do for you, Joe?” Vinay asked.

“Well, actually I was hoping that I could do something for both of you. Dan told me about the assignment he gave you to identify new market opportunities and new applications for AIS⁸. I’ve been thinking about it and it occurs to me that you might be overlooking a big opportunity which no one has exploited until now.”

“Coming from you, that’s very encouraging. What is the opportunity you have in mind?” Vinay asked.

“*Inversions*,” Stearne replied. “Inversions. Or if you prefer you could call them *reversals*, though technically that is something slightly different. A reversal is what you do to create or overcome the effects of an inversion.”

“I’m afraid you have lost me already, Joe,” Vinay responded. “Maybe my mathematical friend over here knows what you are talking about, but I haven’t the faintest idea.” Glancing over at Anya, he saw from her face that she did not seem to either.

“It’s an idea I got from reading *The Book* yesterday. Actually the theme of inversions and reversals runs through it from start to finish, but I did not really understand their significance until yesterday. Let me see if I can put in simple layman’s terms. I am sure you must have observed the phenomenon of inversion in life. It’s self-evident. It’s all around us.” Looking at their faces, he realized what was obvious to him may not be to them. “Look in that mirror,” he said, pointing to a large wall mirror directly in front of the treadmills they were running on.

“Of course, you immediately notice the obvious that Anya is standing on your right side when I look at you in the mirror where as she is on your left side when I look at you directly. That’s an inversion I am reminded of every morning when I try to trim my sideburns and find the razor rising up on the wrong side of my face in the mirror. That’s why if I take a piece of printed matter and hold it up to the mirror, the letters become unreadable. On the way over here this morning, I stopped in at Kinkos to use a Xerox machine—did you know that they are serving free coffee there these days? I wanted to copy thirty-two pages of new *Archive* material which I found last night on this very subject of inversions, so I could pass out copies to each of you. Being a lover of conciseness, I thought I could get two pages on each side by reducing the print size and print double-sided to cut down the thirty-two pages to just sixteen sheets of paper folded like a book. I approached one of the do-it-yourself printers, selected reduction and laid out two sheets on top of the glass pane. I selected 50 percent reduction and pushed the print button. To my surprise, the sheet came out with two errors. First, page 1 and 2 were on the wrong sides of the printed page, because I had forgotten about the principle of inversion. Second, the print was far smaller than necessary and only occupied half the available space on the page. I soon realized it was because print reduction was calculated in terms of length and width of the page, whereas what I needed was reduction in total print area. My mind found it difficult to reverse its way of conceiving the task in order to arrive at the right level of reduction. I finally discovered by trial and error that a 90 percent setting gave the result I needed.

“Now I thought I was ready to roll, but I soon found my problems were only beginning.” Stearne paused to study their faces and then resumed. “I hope I am not boring you two with something that sounds trivial. You see this morning I made a great discovery and it had nothing to do with printing. As far as that goes, I learned never to do by mental ingenuity what a computerized machine can do for you without thinking. But, with your permission, I will go back to my narrative. OK, I had worked out the inversion in print area and the inversion resulting from lateral inversion—that’s the mirror effect. Then things got complicated. I wanted to create a booklet of thirty-two pages which reads like a book when folded in half. I soon realized that I could not place page 1 and 2 on the first page as I had done originally. I would have to

place page 1 and 32 on the front side of the first page, with page 1 on the right, so when that page was folded, they represented the first and last page of my booklet. Then I needed to print page 2 on the reverse side of page 1 and what should be printed next to page 2? Page 31, obviously. Now the problem is that when I tried testing this out, I found that page 2 was printed on the reverse side of page 32 and page 31 was printed on the reverse of page 1. Why? You guessed it, another inversion! I forgot to reverse my adjustment for lateral inversion for the reverse side printing! Follow me?"

Suddenly, Anya and Vinay simultaneously burst out into peals of laughter as they could no longer contain the humor of the ludicrous situation the professor was portraying so artfully. Here was one of the most brilliant minds in America confessing that he was defeated by the apparently simple task of photocopying thirty-two pages on a Xerox machine. "A little respect for old age," Stearne said with a kindly smile. "Bear with me for just one more step. But this one is a killer. I printed the first side of all sixteen sheets with odd numbered pages starting from the beginning on the right and even numbered pages starting from the end on the left as I described." Laughter again. "Then I fed the sheets back in the printer in the same order to print the back sides. When I pulled out the finished sheets, low and behold, I found pages 17 and 18 printed on the back of pages 1 and 32! I had forgotten another inversion, the inversion in the order in which pages were collated by the printer!"

At this point Vinay fell off the treadmill and rolled on the floor laughing uncontrollably. Stearne pretended not to notice, "Anyway, to make a long story slightly shorter than it actually was, I then went up to the counter and asked the sales clerk whether there was any genius in the store who could make this job come out right. I described my objective in two sentences. He picked up the thirty two pages, went over to the same printer I had been working on, pushed three buttons, asked me how many copies I wanted, and five minutes later they were printed, collated and stapled to my utter amazement and satisfaction!"

Anya got off the treadmill and went up to the professor saying, "Joe, if your philosophy classes are half as entertaining as this, it's a wonder that anyone at Cal enrolls in any other subject."

"Thanks, Anya, but I hope you won't miss the message concealed in my narrative. My point is the life is filled with inversions, all kinds of them. The ones I described are merely various manifestations of the simplest physical type occurring in two dimensions of space. Relativity Theory goes beyond this, recognizing the inversions that occur when matter travels at high speed, inversions that affect the length and mass of objects and even the speed of time. But in life, we encounter even more complex, multidimensional inversions.

"Take for instance, the apparently simple relationship between man and woman—a very deceptive illusion, I might add. I am sure even Russians are familiar with the adage which says that a woman runs away from a man just fast enough to allow herself to be caught, which is depicted so marvelously by Jane Austen in *Pride & Prejudice*, when Mr. Collins proposes to Elizabeth Bennet. She naturally refuses him because she finds him totally repulsive. But knowing this adage, Collins refuses to be rebuffed and takes, or mistakes, her refusal for a desire to be more vigorously and passionately pursued. Now that's a scene that can leave anyone rolling on the floor in laughter. Collins made a simple mistake. He neglected to take into account the inverse truth of an inversion, that is, that a woman who genuinely does not want to marry him would also behave in precisely the way Elizabeth did."

Stearne paused for a minute to assess the response of his audience. Having noticed Vinay glance down at his watch more than once, he shifted tack. "I am not just here to entertain you. There is a serious point to my rambling. Let's come to business. Take the well-known story of Sears Roebuck, as it was called in the early days. Richard Sears was a railway station-master who transformed himself into a clever city-based merchant and a marketing genius. In the 1890s, he recognized the growing demand for urban manufactures among the prospering farmers in the rural areas and developed a mail order business to tap that market. He offered them everything he thought the rural folk wanted, including hair restorers, longevity tonics and potions claiming the efficacy of Viagra. Sears relied on the trust and gullibility of rural folk who have faith in anything modern that comes from the city. He soon built himself a thriving business with a one million dollar turnover. Not bad for an ex-station-master.

"Then along came Julius Rosenwald, an experienced businessman and investor who bought in as his partner. And what did Rosenwald do? He turned the model on its head. He inverted it. He introduced Sears' famed policy, *Satisfaction guaranteed or your money back*, a revolutionary breakthrough in retailing at the time. In philosophical terms, he pulled an inversion. Instead of asking rural customers to trust Sears, he announced that Sears would trust their customers. Any customer was free to return any merchandise they purchased for any reason whatsoever, or no reason at all, no questions asked, no penalties. What was the result? Nearly everyone in America started buying from Sears. Within twenty years it became not only the

largest retailer in America, but the largest in the world, and it held that title for nearly seven decades. That is the power of an inversion!

“Now let’s look at more contemporary examples. When the World Wide Web was founded in the mid 1990s, most pundits of the day heralded the arrival of the digital age and prophesied the immediate demise of books and newspapers. What they said made good common sense. It was self-evident to almost everyone, except a thirty year old financial analyst named Jeff Bezos who apparently saw everything in reverse from the way we normal people view reality. He started amazon.com, an on-line bookseller of all things! How prosaic. Twelve years later his company is the largest bookseller in the world with revenues of ten billion dollars, while one hundred thirty-three year old Barnes & Noble is only half as big. That’s the power of inversion.”

“It sounds like you are talking about Contrarian Theory, professor, like that employed by some investors who invest contrary to market expectations,” Vinay commented.

“No, Vinay, don’t be confused by simplistic notions of simply doing the opposite of what others do. That may work on occasion and it can also lead to disaster. No, I am speaking about an intimate knowledge of the inner working, the inner truths of life, which *The Book* is trying to communicate. Hotmail is another good example of inversion. Every early entrant trying to establish a business model that worked in cyberspace faced the challenge of how to make money. Sabeer Bhatia and his partner were among the first to realize one of the greatest truths of life as it applies to the Internet, the principle of *grow by giving*. They started giving away free hotmail accounts in 1996 and sold their company to Microsoft three years later for four hundred million dollars. They gave in order to receive. That’s an inversion which has become one of the fundamental principles of Wikinomics.

“Or take Google. When they announced the launching of a new search engine in 1998, it certainly appeared to be counter-intuitive. The last thing anyone thought we needed was another search engine when already we had Excite, Yahoo, Lycos, Infoseek, Altavista, Webcrawler and a dozen others to rely on. Besides, no one had ever figured out how to make money in the search engine business. Then along came Google with a superior product. They realized that they did not have to make money on searches. They could offer that service free, provided they received something in return. According to *The Book*, there is no such thing as giving without receiving. There is always a return, only you have to be able to recognize it. Google did. They realized that the information generated by users searching the web is valuable to advertisers. So two years later they established Adwords to market ad space to advertisers based on the search terms and keywords web users were interested in. The whole concept is a beautiful inversion.”

Vinay thought that Stearne might be nearing the end of his narrative so he stood up from the sitting position he had assumed twenty minutes earlier and thanked the professor for his fascinating narrative. Stearne looked surprised and offended. “What are you thanking me for? You haven’t understood a word of what I am telling you. I am offering you a key to the secrets of the universe and you are only worried about your next meeting!”

Anya was pretty sure she saw the professor suppressing a smile as he tried to intonate the last words. She turned to him and said, “I see that they do not call you Stearne for nothing, professor.” Then all three burst out laughing.

Stearne resumed a serious demeanor and replied, “Look, you two. I think we are really on to something here. Join me on Saturday evening up at my place for a barbecue and I will try to complete the picture of what I have in mind. Rosa’s a great cook but I am in charge of the grill. I don’t think you’ll be disappointed. And bring those other guys along too. They might even learn something.”

“Isn’t it a little early in the year for barbecues, Joe?” Vinay asked.

“Well, then, if you insist on being practical, we’ll do the cooking in the garage and eat inside. But, there is one condition. You have to promise to tell your friends what I told you this afternoon so I do not have to repeat it on Saturday.”

123. Hot Air Balloon

It soon became apparent to them all that the subject they were examining was so vast and complex that it could require a very detailed and systematic consideration. Vinay suggested that it might be helpful for them to get away from the office so they could concentrate fully on their discussions. Dan thought a change of scenery and even a little recreation might give them the spurt of fresh energy they needed to sustain their effort. After a brief discussion, they agreed to spend the rest of the week at a bed and breakfast in the Napa Valley. Dan invited Lauren along to join with Anya, Vinay, Ray, Bill, Levin and himself to keep detailed notes of their discussions.

For the next four days, the group sequestered themselves all day long pursuing a somewhat rambling exploration of the laws of life. Each morning Dan read out citations from *The Book* enunciating specific laws and the principles governing their interaction. This was followed by discussion and application of the law to their own experience at MAI and their own personal lives, to make sure that they understood it in a living context and not merely as abstract impersonal, philosophic truth. The habit of looking for parallels in history, biography, business, literature and contemporary events solidified into a conscious methodology. They tried to identify examples from one of these five categories of life events to illustrate each of the principles. Gradually the list of principles grew to more than 20 and the list of incidents to more than a hundred. Still they seemed to be just scratching the surface of the subject. On the third morning Lauren produced a list entitled "Laws of Life" covering what she thought were the most salient underlying principles they had discussed.

They were all exhausted by the long hours and strenuous mental effort entailed in trying to grasp a totally new perspective of life. That night Vinay suggested an early morning hot air balloon ride down the valley. Bill and Ray both said they preferred a few hours extra sleep to rejuvenate their energies. Dan, Anya, Vinay, Levin and Lauren finalized reservations and plans for an early morning outing. Lauren walked down the hall and knocked at Dan's room at 5:30 am the next day. When he opened it she found he was still in his pajamas. He said he woke up with a fever and would have to drop out. Lauren touched his forehead and found he was burning, so she urged him back to bed and promised to look in on their return. As she continued down the hall, a head emerged from another guest room door. It was a small man with a beak-like nose. His face was strangely familiar to her and disconcerting.

The remaining four left the bed and breakfast a few minutes later and drove over to the launch site. It was a cold windy morning. Anya looked ravishing in her knitted cap and parka with hair blowing in the breeze. The weather was nothing to a Moscovite. Vinay felt less in his elements. It was never easy being with Anya, indoors or outdoors, even when it was wonderful. But she was in a playful, affectionate mood that Vinay found so entrancing and the view as the balloon sailed down the valley was so glorious, that he barely noticed the weather.

Lauren seemed completely at ease hovering 3000 feet above the valley floor. But her mind was only half on the spectacular view. She was intent on breaking through Levin's quiet reserve with a method of subtle interrogation that would have done credit to a Mossad agent. Using the same technique she had employed so adeptly with Dan in Tilden Park, she began relating myriad impressions from her early days at MAI, her impressions of the partners, and her first encounter with *The Book* at Dan's apartment. She persuaded Levin to speak about his own first encounter with *The Book* in Berlin, a story she had heard second hand but never from his own lips. She delved into his thoughts and feelings and the lines of life that had eventually brought him to MAI. Levin relaxed and spoke more freely than he had in many years.

Lauren was pointing out landmarks to Levin with both hands in an animated manner, when suddenly a gust of wind traveling up the valley floor shook the balloon and knocked her completely off balance. She instinctively reached out to Levin for support and he extended his arms to catch her. They ended up face to face in a close and tight embrace. Conscious of her body against his, Levin loosened his firm grip, but instead of pushing back, she leaned gently toward him and her body melted into his. She sighed in relief and giggled in embarrassment, then looked up demurely into his eyes. He smiled warmly with an expression she had not seen before that sent a thrill through her. When she returned the smile, ever so slowly he placed his hand on her cheek, bent over and kissed her lips. Surprised, she drew back her head, then smiled more broadly and kissed him back. Laughing, she asked, "Do you think that a gust of wind can qualify as a life response?"

124. Barbecued

That weekend Stearne hosted the MAI management team for a late afternoon meal. Once the cooking was over and appetites had been satiated, the professor gathered his guests around the dining room table for a serious chat. After assuring himself that Vinay had kept his promise of briefing the others about their conversation in the fitness center, he resumed at the point he had left off.

The Book, he explained, described many types of inversions in life. “Each inversion represents knowledge that is power. Recognize an inversion and you acquire greater knowledge and greater capacity for accomplishment, just as Sears, Amazon and Google did. Now, here is the important part. I have been examining the principles which have been incorporated in AIS⁸ and *Accomplish*. I have not found a single trace of inversions among them. In other words, an essential message of *The Book* has been left out. The software works and works well, but it is not complete. It is not founded on complete knowledge. As *The Book* states, complete knowledge has to be all-inclusive. It has to take into account inversions, reversals, contradictions and oppositions as well.

“Take the example of the most lucrative field known to man—investment banking. I read last week that the average salary paid by Rothman & Lazurus last year was five hundred fifty thousand dollars per employee, which includes secretaries, receptionists and other staff as well. Their top traders earned an average of thirty-three thousand dollars per hour! Not bad for a banker. The same paper reported that the investment bankers would earn upwards of two hundred million dollars on the ABN Amro merger alone.

I am not recommending you jump ship and take up a new profession. But have you ever asked yourself what is the principle they apply to earn such fantastic fees on their mergers and acquisitions business? I see by your blank expressions that you haven’t, so I will save you the effort. The answer is similarity and complementarity. They seek to identify companies with similar profiles and the same or related industries with complementary strengths and weaknesses. The theory is that by combining them, you can create a business which is more valuable than the sum of its parts. That is the theory, though in practice it works less than 30 percent of the time. That’s McKinsey’s estimate, not mine, so you can rely on it. The question is ‘Why?’

“Now we come to inversions. My own theory is it is because they completely neglect the negative side. They fail to see the potential opportunities in inversions. If men and women behaved in that same manner we’d have no romance, no love affairs, no marriages, no children! It’s basically a flawed approach, but no one has ever stopped to analyze it because it is so successful, if not for the clients, at least for the bankers.

“Now I believe that if you can incorporate the principle of inversions in AIS⁹ and *Accomplish*², you will be able to identify business opportunities that far exceed anything so far envisioned by the investment bankers. I tried it myself as thought experiments conducted in retrospect. You can question my methodology, but I think you will find the logic sound. I figured that if thought experiments work for Relativity Theory, they might work for investment banking too. I situated my first thought experiment in 1971. I asked myself what the biggest untapped commercial opportunity was that I could identify at that point in time. I considered all the obvious things that other people had thought of at the time—computers, imported cars, discount department stores, fast food, etc. Then I applied the principle of inversion. And what did I come up with? China! Remember, this was one year before Nixon actually opened up economic and commercial relations between the USA and China. At that time the two countries were politically, militarily and economically inverted! Reverse the inversion and what do you get? Today US-China business accounts for nearly \$300 billion a year in international trade.

“My second thought experiment was placed in 1984. I was looking for invisible opportunities that appeared by a process of inversion. The USA was the most prosperous country in the world. India was one of the poorest. The computer revolution is spreading exponentially in Silicon Valley while India’s software industry has a miniscule ten million dollars in exports, roughly equivalent to the revenue of Apple Computers—the daily revenue, that is. Just twenty years later, India’s software exports are touching forty billion dollars and still growing at 30 percent annually, the vast majority of it directed to support the further technological development of America. Without Indian software expertise, Silicon Valley and the Fortune 500 would be set back a decade or more. Note the irony in this story. One of the poorest countries outside of Africa with one of the lowest average levels of education and lowest levels of technology dissemination has become an invaluable partner to America’s continuous advancement. In the process, India’s own economy, educational system and technological prowess are growing exponentially.

“In sum, I am suggesting that if you manage to incorporate the principle of multi-dimensional inversions in your products, you will unearth opportunities of equal or greater magnitude than these, which no one has yet been able to identify, including those well-paid bankers at Rothman & Lazurus.

Stearne stopped suddenly, looked around at each of his guests to see how much he had succeeded in communicating his message, then he added, “It is terribly rude to invite people to your home, corner them and make them listen to a lecture. That is exactly what I have done and I will not apologize. I hope you will thank me for it one day soon. Now as compensation for undergoing that ordeal, Rosa has baked a specialty dessert which is really beyond compare.” She served each of them with a frozen chocolate covered pastry formed in the shape of an open cup with hot vanilla ice cream filling the open vessel. “Isn’t it appropriate?” the professor quipped. “I call it *Rosa’s Reversal!*”

After dessert, Stearne invited Anya and Lauren to accompany him into his study for a moment. He walked over to his desk and handed Anya Volume III of Srinivasa Ramanujan’s Notebooks. “This is for you, Anya. Personally, I cannot make anything out of it. The mathematics is way beyond my capacity. But I think you will find it interesting. I particularly recommend that you take a look at Chapter 17. It contains Ramanujan’s inversion formula relating theta-functions with elliptic integrals and hypergeometric functions. He applies the theory of elliptic functions to various types of infinite series. It’s interesting to note that the mathematical symbol for infinity is a horizontal figure eight, a double ellipse. It’s amazing to think that he actually saw these proofs in his mental vision, without even passing through the normal methods adopted by mere mortals. His work seems a fitting complement to the knowledge contained in *The Book*.”

While Anya was flipping through pages of esoteric symbols, Lauren glanced over to the fireplace and noticed the photograph of a beautiful young blond-haired woman with a whimsical smile on her face embracing Joe affectionately. “Whose’s this,” she asked him. Joe smiled proudly and replied, “That’s my niece, Rosalyn Christina Stearne. I call her Kristy so as not to confuse her with Rosa, who had prior claim on the name. She’s the closest thing I have to a living relative, living in France doing god-knows what.”

In response to eagerly questioning looks by both the girls, Joe elaborated. “Kristy’s an independent type. Kind of reminds me of Elizabeth Bennet. She’s got a capacity for childlike courageous frankness which is totally disarming and occasionally quite infuriating. She is the only one in the world who has ever mocked me and gotten away with it. That’s because her mocking is always so full of affection, as if she loved me more for my foibles. Sometimes I think it is her principle form of entertainment and she is so good at it and makes me laugh so much I am almost loath to deprive her of as many occasions as possible. Others find my capacity for retribution too forbidding. But she seems impervious to my rebukes. She always concedes the truth in my criticism of her follies and blithely goes on laughing at mine. I am unable to handle her, because she is so often laughing at herself. Fools laugh at others. The truly wise understand their own follies and enjoy them. The worst of it is that she is completely heartless in exposing me before others, ruthless, unforgiving and unforgetting, so what I might enjoy in private comes back to haunt me at the least convenient moments. She did it once in my class in front of my students. That time I did not speak to her for a week! I would really say it is a serious defect in her character, except for the fact that she deals with herself precisely the same way—impersonally and brutally frank. I’d almost say heartless, if she wasn’t so full of heart. It’s impossible to get angry at her criticism because she never gloats or draws any satisfaction from it. It almost seems to hurt her more than it does the person she criticizes and she is always right and she always treats herself much more harshly. That’s what I hate about her—she’s nearly perfect! I pity and envy the man who wins her! She swears she will never marry because the only possible candidate is nearly three times her age and a confirmed old bachelor! Ah, if only I were forty years younger, how different things would have been!”

Joe mused for a few moments, lost in himself. Then looking up, he added, “But what a temper! I’ve never seen anything like it. When she believes in something, get out of her way. Worse still, when she gets angry, she becomes rational! There is simply no answering her at those times because her logic is flawless. Worst of all is when the two Rosas go head to head. It rarely happens because they are so fond of each other. But last time she visited, Kristy blew up at Rosa for feeding me my favorite desserts which she had strictly forbidden on health grounds—too much cholesterol, sugar. Rosa is very sensitive when it comes to her cooking and they exploded at one another. I don’t know how it ended. I left the house for safety. But I did notice that the dessert tasted different that night and the portion was only half the normal size, so I could guess who had won. She is formidable when she sets her mind on something.”

When Anya heard Joe’s glowing description of his niece, she couldn’t help almost feeling jealous and struggled to conceal her embarrassment. Joe seemed to sense her feeling and said, “On the other hand,

she is an idiot when it comes to numbers. Her French is tolerable but her German and Italian are a constant embarrassment to me.”

Then Stearne turned to Lauren, picked up another book, opened it and read out “How beautiful thou art, and how comely, my dearest, in delights!”

He handed the book to Lauren and a puzzled looks came over her face when she opened it. “Joe, this book is written in Hebrew.”

“But, of course, my dear. What other language would you expect the *Song of Songs* to be written in? I grant you it was somewhat erotic for its times, but hardly by today’s standards. Ignore all the nonsense about symbolism for the love of church and savior; this is pure sensuous love poetry.”

Lauren protested that she could not read a word of Hebrew. Stearne looked surprised and replied innocently ‘Well, you are young, there is plenty of time to learn. Or, perhaps, you can find someone who does. Anyway, don’t worry, I assure you that you will not find this book any more difficult than Anya will find reading Ramanajam. Hers speaks of the indecipherable myserties of mathematics, yours of the mystery of love.” Lauren suddenly flashed back to the scene a few days earlier in the balloon over Napa and wondered just how much this old man really knew.

Joining the others back in the living room, Anya held up Ramanujan’s book for all to see. “Algorithms,” she said, “very romantic!” Blushing in embarrassment, Lauren added, “Joe wants me to study the *Bible*.”

Looking around once more at his guests, Stearne said, “Well, I must say you all look fairly well barbecued. I told you I was a good cook.”

The air was cold and damp as Dan and Levin walked down the steep winding hills back to MAI that night. The others had gone home by car, but Dan had suggested they walk and Levin readily agreed. Dan laughed as he observed, “You know, I don’t think the six of us said more than hundred words between us the whole night. And the funny thing is, it felt perfectly natural and right that way. So what did you think of our professor’s performance tonight, Kurt?”

“I think the old man is an absolute gem. He and MAI seem to be growing together like a rose vine against a wall,” Levin replied. “Only the thorns on this vine are strictly ornamental.” They both laughed.

“Yes,” Dan agreed. “He reminds me of someone else who has played an invaluable role at MAI, given so much without asking for anything in return.” Dan glanced over at Levin but Levin walked with his head down and refused to acknowledge the compliment. “You know, that man has discovered truths in *The Book* that I have read ten or even twenty times without understanding what they really meant. I understand the words and the concepts, but he is able to translate abstract concept or principle into terms of life. It’s an amazing gift. I can quote by heart the very lines in *The Book* on which he has based his ideas on inversion, referral, practical concept of infinity and so forth; but the way he explains them, they acquire a whole new reality. I was thinking tonight how lucky I am. First life brings me *The Book* and then it brings me the professor. And in between it has brought me a lot of other wonderful people as well.”

“I think Joe is really on to something with these inversions,” Kurt continued. “Toward the end I kept thinking of the problem between Israel and Palestine. Wherever we look we see immovable obstacles, impenetrable barriers and irreconcilable oppositions. If only we can find a way to get on the other side of the mirror or see the deeper opportunity that is concealed by the surface conflict, I have a feeling we may stumble on something extremely rare and precious. I know that sounds like wild speculation given the present context and past history, but not long ago the same was true of Franco-German and Chinese-American relations too. I would like to be there when the reversal takes place.”

125. Choices

In mid-February, the management team met to chart out a strategy for the future. Dan requested Stearne to join them for the meeting. Vinay began with a report on plans for launching AIS⁹ during the second quarter. Anya's research team had already reported remarkable progress in identifying algorithms to incorporate the concept of inversions into the new version. She acknowledged the great help they had derived from Ramanujan's notebook. The inversion formula Stearne had pointed out offered a perfect solution to the problem, one that otherwise might well have involved months or years of research to resolve. She now planned to examine the relevance of other formulas in the book. "I marvel at the fact that such an invaluable resource has remained an unutilized enigma during the nine decades since Ramanujan's death."

Meanwhile, Vinay told the group that his team had been conducting some thought experiments of their own under guidance from Stearne and had come up with several market opportunities that dwarfed in size any of their current client contracts. One pertained to the potentials of economic collaboration between India and Pakistan, which indicated that closer ties could add as much as three percentage points to GDP growth in both countries. "We are talking about opportunities worth thirty billion to forty billion dollars a year. That is at least tens higher than current estimates of the potential. I am planning to take a team to Delhi and Islamabad in March to see if we can sell them on the value of a joint effort. If we succeed, this single contract could be sufficient to cover the entire costs of whatever product liability we incur on *Accomplish*." A subtle glow involuntarily appeared on Stearne's face as he witnessed the results of his barbecue.

Then the meeting turned to *Accomplish*². Anya reported that the nine levels model had been incorporated into the prototype version and was now being tested by one hundred employees of MAI. "We developed a new personality profiler that assesses users on all six dimensions, including the nine levels of dimension six. Instead of categorizing people one to nine, it assesses relative development and predominance of each level in the personality and arrives at an optimal mode of working. Based on that the software presents recommendations adapted to the personality of each user. Its only a prototype and will need further modification, but the preliminary testing shows that failure rates have been brought down to less than eight percent. I am hopeful that we can eliminate the remainder either before launch or by further adjustments within the first few months."

Then Anya turned to the issue of data pollution. She summarized the discussion she had with Stearne in the research lab and the suggestions he had derived from *The Book* for preventing a recurrence of the problem. "According to Joe, we have to give *Accomplish*² the capacity to recognize errors based on limitation of knowledge and falsehood based on egoism. The earlier version incorporated positive definitions of truth in the form of principles of accomplishment. Now we are in the process of identifying negative definitions as well to complement the positive and trying to evolve an algorithm for each one. For instance, when I define money as a medium of exchange or measure of value, I tend to lose sight of the fact that money is not a physical thing. It is a social symbol. It is not only a symbol, it is a social organization. It depends not only on economic performance, but on peace, political stability, social aspirations and psychological realities too. In other words, when examining the economic function of money, I need to keep in mind its social, political, psychological aspects as well. Otherwise, I lose sight of the truth.

"You can think of it as the inside and outside of the circle. By defining what is inside, I tend to lose sight of the context. So our objective is to develop contextual formulas that link every partial truth to wider, deeper and higher truths. For example, when I say that the head is the seat of the physical brain and the flow of blood is essential for its functioning, I tend to lose sight of the fact that brain and mind are concepts at two different levels, one physical, the other mental. Every statement of physical reality has a corresponding existence on other planes. Unless we are able to retain awareness of the context, of the whole of which everything is a part, we fall into the ignorance of fragmented knowledge."

Anya stopped abruptly and looked around. "Do you guys really want to hear this? This is supposed to be a planning session, and here I am rambling away about how we are trying to solve the problem of data pollution."

"Anya," Dan replied, "this single problem almost sank MAI with one blow to the head. I think we all would like to understand what you are doing to protect us from a repetition of that experience. Once was more than enough."

Nodding her head, she continued, "Coming to the second problem, falsehood, we struggled for quite a while until we finally did what we should have done in the beginning. We asked AIS⁸ for help. The initial answer it gave was so terse, that I thought perhaps it had not understood the question or did not know the answer. It quoted a statement from *The Book* which Joe mentioned to Vinay and I a few weeks ago

during a guest lecture in the fitness center, *Grow by giving*. At first I could not follow the logic. Later Dan explained it by showing me a passage *The Book*. If the first impulse of egoism is taking, and possessiveness arising from a sense of separateness and a struggle to support that separate existence at the expense of others—*growth by taking*—then the best remedy is to reverse the process. That’s *growth by giving*.

“The question remained, how do we operationalize it? The first thing we did was to re-examine the existing algorithms to see whether the egoistic perspective had been unintentionally built into the original design. We found that it had been—virtually everywhere. Each time we had formulated an algorithm to reflect a principle from *The Book*, we had unknowingly converted it into a principle of egoistic accomplishment. So we went back to see whether there was another way to formulate the algorithm to correct the bias and discovered there was. It was simply a matter of *reversal*—of reversing the perspective and the direction. We developed a rule to modify existing algorithms and applied it to the structure of *Accomplish*. Then we tried an experiment. We ran *Accomplish* using the corrupted database from last December. To our amazement, *Accomplish* came up with different solutions to every problem we submitted. Some were only slightly different. Others were totally opposite. When we examine the difference between the old and the new solutions, we found that the only difference was that *Accomplish* now ignored the corrupted data as if it did not exist! It was as if the software had developed the capacity to tune out static the way we ignore background noises or peripheral events in order to concentrate on the work at hand.” Anya concluded by saying that she and her team were confident of being ready for beta-testing of *Accomplish*² by April 1, 2008.

“OK, so we will have two new products to market by the second quarter,” Dan said. “Now we come to the crucial question. What business model will we adopt for *Accomplish*²?” He looked around at the room and saw a question on everyone’s face. “How will we overcome the fact that *Accomplish* totally bombed and disappeared from the market place and that we still have pending litigation which may continue for years to come?”

Responses to Dan’s question centered around launch strategies, promotional and marketing methods to gain public attention, to bring out the real reasons for the failure of the earlier product and generate user confidence in the new version. Gradually it came around to the question of price. After listening to several proposals, Dan surprised the entire group—everyone except Stearne, that is—when he suggested they consider distributing *Accomplish*² for free.

“But what is the business model?” Vinay asked. “How will we generate revenue from it? I hope you are not going to propose hosting advertisements and affiliate marketing connections on our software?”

Dan smiled and asked Vinay to go back and run the scenario on the prototype version of AIS⁹ to see what recommendations it provided—the one that incorporated Ramanujan’s formula for inversions.

126. Jobs, Gates & O'Hara

On February 21, the management team met again to finalize a business model for *Accomplish*² in preparation for the launch. Vinay presented a range of options. He started by tracing the experiences of other companies at the critical point of deciding on software pricing strategies. “We face the classic dilemma of Jobs vs. Gates. Just as Steve Jobs refused to license Apple’s Macintosh operating system to other computer makers and priced it much higher than DOS based systems, we have the option of maintaining exclusive control over *Accomplish*² and pricing it high based on exclusivity and superiority of function. For the time being we would enjoy a total monopoly, since nothing else faintly resembling it is on the market. That will limit distribution of the software and encourage others to break our monopoly, which is what eventually happened when Microsoft developed their own GUI Windows operating system. The other option is the one Bill Gates followed when he licensed MS-DOS to IBM and every other computer manufacturer that wanted it for a very low price. MS-DOS became the nearly universal standard for personal computers in spite of the fact that the Mac operating system was vastly superior and it wasn’t until fifteen years later that Windows acquired the functionality offered on the Mac in the mid 1980s.

“Essentially there are two ways we can make money with *Accomplish*²—by selling the software to users or by charging them for access to the centralized data services that make *Accomplish* so powerful. It is as simple as that. My own recommendation is that we take the first option or a combination of both, in which case revenues will be based on usage as well as on sales. Once we agree on the basic option, we can discuss the pros and cons of Jobs vs. Gates pricing strategy.”

Smiling at Vinay, Dan asked, “Are you sure there isn’t a third option?”

“Well, I suppose, we could always give away both the software and the services and hope that the public support MAI out of sheer generosity,” Vinay replied.

Dan asked Vinay whether he had consulted AIS⁹ beta for advice. Vinay replied that unfortunately there were still some bugs in the new version and it came back with an answer that did not make any sense. AIS⁹ recommended that MAI give away both the software and the data.

“Ah,” Stearne exclaimed, “the O’Hara option!”

A free ranging discussion broke out with self-appointed spokesmen for various options. Vinay was in favor of moderate software pricing and modest access fees which would grow as usage expanded. Ray liked the idea of giving the software free because it might overcome initial market resistance resulting from the debacle with the first release, then charging customers on an actual usage basis. Bill preferred exploiting MAI’s near monopoly by pricing the software at a level which reflected just how powerful and valuable it really was. Levin, Anya, Dan and Stearne listened quietly as the pros and cons of each option were examined.

When all the options had been discussed threadbare, Anya asked, “What if AIS⁹ did not make a mistake? What if there is no bug at all, it’s just that we do not fully understand the logic behind its reasoning.”

Stearne looked at Anya and smiled in admiration. She’s a quick study, he thought to himself, perceptive and good looking too. Vinay responded to Anya in a somewhat condescending tone, to the effect that the company had to make money one way or the other. Then the professor asked permission to share his own view.

“Let us suppose, for the moment, Vinay, that you decide to give away *Accomplish*² at no charge and did not charge users for data exchange either. What do you think would happen?” Stearne asked.

Vinay replied that it would make his job of overcoming market resistance relatively easy. He anticipated that he could distribute a million copies of *Accomplish*² per month during the first three months. By comparison, Microsoft sold twenty million copies of its Vista operating system during the first month of its launch the previous year. Of course, MS had the advantage of supplying the software directly to computer manufacturers for installation on PCs before delivery. After the initial launch, *Accomplish*² sales would depend only on user feedback about the efficacy of the new product. If *Accomplish*² performed half as well as they thought it would, they could probably distribute tens of millions of copies during the year. They might even get computer makers to pre-install it on the systems they shipped. Assuming even 25 percent of new computers were shipped with *Accomplish*², MAI could distribute hundred million units or more over the first three years. But, Vinay insisted, all that would depend on whether the new version fully addressed the problems with the first one and could avoid a further instance of data pollution. “But what would be the use?” Vinay asked. “We would have given MAI to the world and gotten nothing in return.”

“Sounds pretty useful to me,” Stearne jibbed. “I think what you mean to ask is what would be the gain to MAI from doing so. Am I right?” Vinay nodded his head in agreement, then the professor continued. “Well, I can think of a lot worse situations to be in. You would have created a product that is universally distributed and universally valued. It might be generating hundreds of billions or even trillions of dollars of additional wealth to the world. That would be no mean achievement for a group of hackers, I suppose. And from what you have told us, you’d be earning more than enough revenue from AIS⁹ to pay the bills and make the shareholders extremely rich over the next few years. Unless, of course, the success of *Accomplish*² cut into the market for AIS⁹, which is a possibility, I suppose.”

“I know the professor’s a pure idealistic at heart and Dan’s just a mystic in disguise. So, if the rest of you want to give away *Accomplish*² as a gift to the world, I certainly will not stand in the way,” Vinay said with one of his most charming smiles. “I know that would also appeal to Ray’s liberal streak and Anya’s deep rooted socialist sympathies.”

“I think you have misunderstood me, Vinay” Stearne said. “I was not talking about a strategy for you to give away all the wealth you have created on idealistic grounds. I understood you were looking at strategies to maximize financial gain. That is what I am talking about.”

“By giving everything away?” Vinay retorted in amazement.

“No, by making *Accomplish*² infinitely valuable, by making it almost as universal as money.” Stearne replied. “That’s it, by making *Accomplish*² as valuable as money.” Everyone in the room looked at the professor with a combination of intense interest and bewilderment. “Think about it,” he continued. “Imagine what it would be worth if *Accomplish*² became as valuable to people as money. After all, what is the function that money plays in the world that makes it so valuable? You cannot eat it or sleep on it. The main role it plays is to facilitate exchange and improve the productivity of other social resources. Well, *Accomplish*² is intended to do the same thing. Even if it did not generate any direct income to MAI, its value would grow exponentially with every passing year. Think of it like a real estate investment. It would be like owning Manhattan without collecting any rent. It would be like owning the Internet! You’d be fabulously wealthy, but there would be no direct income stream. You could always encash its value later. The longer you waited and the more indispensable *Accomplish*² became to people around the world, the more valuable it would become to its owners, that is, to you. You’d already be earning so much from AIS⁹, you really wouldn’t have any need to cash in on *Accomplish*², but that would not diminish its value. Its value would be proportionate to the work it does in the world, to the contribution it makes to global productivity and prosperity.”

A visionary gleam appeared in Stearne’s eyes and a rich emotion mingled in with his words as he considered the possibilities. “But that is not all. I think we have been missing something important. I believe there is another reason why AIS⁹ recommended free distribution. We have been thinking only in terms of direct cash flow from the product. Think instead in terms of social power. After all, that is what money is. It’s a form of social power, power to do work, power to do anything. The power of money issues from the fact that it is universally accepted as a symbol of value. It is trusted. Imagine the social power that would accrue to MAI if *Accomplish*² is universally accepted and utilized to improve social productivity. What would be the influence you wield? Imagine the good you could do. Every decision you make regarding improvements in design or changes in mode of operation would have implications around the world. You might end up with more effective social power than the chairman of the Federal Reserve, and remember, he earns only a modest salary in spite of the trillions of dollars he controls. For all his wealth, even Bill Gates, does not wield power of that magnitude. With AIS⁹ you can become investment bankers to countries the way Rothman & Lazurus is to corporations. With *Accomplish*² you could become the purveyors of the world’s first global currency, a currency for multiplying human productivity and human achievement.”

127. Oppenhauer

A few days later Bill received a most unexpected phone call from Rolf Oppenhauer. At first Bill was unable to discern the purpose of his call. He spoke in a friendly, inquisitive tone without the undercurrents of tension, pressure or threats which had characterized all their contacts over the past one year. Oppenhauer said he was merely exercising the natural curiosity of MAI's single largest shareholder to hear for himself a report of the company's recent performance and future prospects. As much as Bill had come to resent the underhanded tactics and ulterior motives that had driven Oppenhauer in the past, he was too aware and respectful of laws governing shareholder rights to deny Oppenhauer any information to which he had a legitimate claim. He faxed a copy of the most recent monthly P&L, cash flow and the projections for 2008. The only thing he did not mention was the proposal for launching *Accomplish*² as a free software within two months. He did not feel obliged to do so, since no official decision or announcement was yet on record. But when midway through the call Oppenhauer began asking probing questions about the company's plans for *Accomplish*² and the likelihood of a launch in the near future, Bill began to suspect that was the primary objective of his call in the first place. Oppenhauer was already receiving monthly financial reports as a routine matter, so it was unlikely that there was anything about the company's performance that he did not already know. At the end of the call, Oppenhauer casually mentioned that he would be visiting San Francisco on February 29 and would like to stop in at MAI to visit the company and meet the rest of management team, an opportunity he had never had during his sixteen month association with MAI.

Prior to Oppenhauer's arrival on twenty-ninth, the partners met to discuss strategy. There was some talk of whether to conceal any information from Oppenhauer which they were not legally bound to disclose, but Dan was adamant that they tell him everything just as it is. Let him meet anyone and everyone he wants and see anything he wants to see, except the Cloister. That was off limits. Bill received Oppenhauer in his office and gave him a tour of the facilities, including the new six story building the company was erecting a few blocks away. Then he brought Oppenhauer to the board room and introduced him to the rest of the team. When Dan introduced Stearne as a special advisor to the company on artificial intelligence, Oppenhauer studied the professor carefully as if trying to pierce beneath his appearance to measure the soul who lived inside that physical body. Stearne returned his gaze, but quickly satisfied himself that he knew the visitor inside out. The professor was a quick study too.

The meeting proceeded in a courteous, professional manner despite the rancor left by previous events. Vinay presented the business plan for AIS⁹ and mentioned that *Accomplish*² would soon enter beta testing. Oppenhauer, who had been listening quietly up to this point, began to ask probing questions about the new product and the market strategy for its launch. When Vinay hesitated to say too much, Dan took over and explained in clear terms precisely what the company had in mind. It planned to launch the beta test on March 24st and if the product performed as well as anticipated, they would launch the official version one month later. *Accomplish*² would be distributed at no charge to users and there were currently no plans to charge users for access to the data base.

At this point, Oppenhauer began to speak more loudly and forcefully. He raised serious doubts about the wisdom of reintroducing *Accomplish* after the debacle of the year before, especially at a time when AIS⁸ was performing very well. The last thing the company could afford was another round of bad publicity and angry customers. He reminded them that product liability lawsuits amounting to hundreds of millions of dollars were still pending from the previous release. Then, he asserted that the idea of free software distribution and free access to the database was an act of willful folly, sheer madness, or, even worse, vengeful self-inflicted injury aimed to destroy the company. He seemed to imply a suspicion that they would be willing to damage their own interests if by doing so they could hurt him in the process. Dan calmly denied the charge but took no effort to dissuade him from his opinion.

After another hour of pointed questioning and implied accusations, Oppenhauer finally came to the point. "I want out. If you are planning to destroy this company, I do not want to be around when that happens. If you insist on proceeding with your plan to launch *Accomplish*², then I want to sell my shares before the launch. Given the bad publicity last year, this would be a poor time to market them publicly, Oppenhauer argued. Therefore, he wanted the company or the shareholders to buy him out. If they refused, he would launch legal proceedings and take other measures to stop or postpone the launch of *Accomplish*². The term 'take other measures' was not lost on anyone in the room. It became apparent to Bill at this point that this had been Oppenhauer's objective in making the phone call the previous week and his present visit. He had already heard about the plan for *Accomplish*², most probably from a MAI employee reporting directly to him, and he had come to defend his interests in person.

How far things had progressed, Bill reflected, from the time he flew over to Europe in search of financial support for the company. Life had come full circle and brought Oppenhauer to them, barking

loudly to project an image of strength but essentially helpless to prevent management from doing what they proposed. Finally, Oppenauer was the one on the receiving end, under pressure, under fire, squirming for an escape route. Bill was in no hurry to reduce his level of discomfort. Let him squirm. Let him beg. Let him be the one to suffer for once. Bill knew how to negotiate with people like Oppenauer in situations like this. He knew how it felt to be under pressure himself and knew what to do or say to make Oppenauer even more uncomfortable. Now was a good time to taunt Oppenauer with the ‘generous’ offer of a twenty-five million dollar bail out which he had sent through the lawyers just two months earlier or to renew Dan’s far more generous counteroffer of fifty million dollars for Oppenauer’s one third share in the company. After blackmailing Bill’s family, violating Ray’s marriage, bribing employees, one or a dozen break-in attempts, probably instigating the Federal investigation a year earlier, the data pollution, product liability claims and who knows what else—Bill did not have a single drop of sympathy for this man. Nor did he suspect that Ray, Anya, Vinay or Dan felt any differently than he did.

Therefore, Bill was surprised to be awakened from his reverie by Dan’s question to Oppenauer. “How much do you want for your shares?” Bill shook his head and could not restrain a frown. That was no way to deal with this man. Remind Oppenauer of the twenty-five million dollar valuation. Call his bluff by telling him he has no legal recourse against the company. Ask him to apologize for the pain and suffering he inflicted on Ray and Rana. Abuse him. Taunt him. Tell him he should have thought about his interests when he broke the law on innumerable occasions. Threaten to expose his actions. Tell him we have proof. Insinuate that we know who is leaking information to him from within the company. That is the way you handle a man like Oppenauer, not by asking him what he wants. Bill wished for once in his life that Dan had not spoken, whereas in the past he had always wanted Dan to speak out much more freely than he did.

Oppenauer smiled and nodded at Dan, as if finally realizing there was a reasonable man in the room, an honest man, a fair man that he could deal with in a civilized way, a professional. All that Oppenauer communicated without saying a word by the friendly Bavarian grin that filled his face. Bill felt chilled when he saw that expression and hoped no one else was fooled by the man’s mild, apparently helpless demeanor. Oppenauer proceeded to remind those present of how he had supported the company during a crucial period in its growth, how MAI had prospered with his support, and how he was entitled to a reasonable premium on his investment. “Premium,” Bill thought to himself, almost jumping out of his chair in anger, “that scoundrel was ready to steal the company from us for a penny on the dollar just two months ago and now he is asking for a premium!”

All this time Dan sat motionless, not even blinking at Oppenauer’s outrageous gall and blatant falsehood. He looked directly at Oppenauer in silence for an interval of at least five minutes. No one else cared to quell the rising sense of anxiety and discomfort surfacing on Oppenauer’s face. The man himself seemed to have exhausted his arsenal of deception, as if his energy was sapped away by the silence that filled the room. Stearne observed the scene from afar, leaning back in his chair, his eyes shifting back and forth between Dan and the visitor, but no other movement from which one could discern his impression of the meeting.

Finally Dan replied. “Mr. Oppenauer, I will make you one offer and one only. You either accept it on the spot unconditionally or you walk out of here and do whatever you think you can do to protect your interests. It is that simple. The money you lent us has already been repaid. What remains is your two billion dollars in shares. Under normal circumstances I would say you had a right to a premium on your investment, regardless of the pitiful offer you made to us just two months ago. But you have cost this company so much money and so much grief that I could never justify in my mind paying you back a single dollar more than what you have invested. Besides, you’ve already earned generous dividends on that investment. We do not have the cash to return that money today. If we did, I would hand you a check and let you leave with it. What I can offer you is a down payment of two hundred million dollars now and the rest in equal installments over the next eight quarters. If at any time the company defaults in making those payments, you will be legally entitled to reverse the sale and buy MAI from us on the basis of the same valuation. If, as you seem to fear, MAI’s value is eroded by the launching of *Accomplish*², you will have first claim on our assets. That’s the offer.”

Dan stopped, as if he had finished, then as an after thought he added, “I need only add, that I have spoken in my personal capacity as a shareholder in the hope that I can convince my partners to accept the offer I have made. But unless you accept that offer here and now, unconditionally, I will withdraw it and leave you free to deal with Bill regarding your claims.” Dan turned to Bill and his eyes acknowledged everything Bill was feeling but had not expressed. Dan knew and even sympathized with those feelings, but had decided not to honor them. Then Dan turned back to Oppenauer, who was beginning to perspire in spite of the February coolness in the room. He hesitated for a few more minutes, and then as if afraid that the offer might be withdrawn if he did not respond immediately, he nodded his head and extended his hand to

Dan. Dan accepted the gesture reluctantly and stood up. He promised to consult his partners and inform Oppenhauer of their decision within twenty-four hours. Then it would be up to the lawyers to put the deal on paper.

Oppenhauer had left the room, unescorted this time. No one said a word for several minutes. Finally, Dan felt obliged to break the silence. "You people should feel free to do what you think is right. I will accept whatever you decide. I decided not to use the power at our disposal to negotiate him down to a minimum price. I decided to offer fair value for his investment. At the same time, I am convinced that the moment we pay him off, MAI will be freed of a curse that had been hanging over the company for the past fourteen months. Many of our troubles stem directly from our involvement with this man and his group. My own belief is that a year from now Oppenhauer will be cursing himself for ever consenting to sell and we will look back on this transaction as a great blessing. The rest is up to you."

Ray looked concerned. "What if we can't make the payments? That's my main concern. What if we don't have the money to buy him out?"

"We'll earn it," Vinay replied. Then standing up he said, "I don't know about anyone else, but I am hungry. How about we end this meeting, get some lunch and then start preparing for the launch." Anya gave him one of her sweetest smiles. Ray nodded agreement. Levin looked more relaxed than in weeks.

Stearne remained leaning back in his chair with an enigmatic smile on his lips. "It's February 29," he thought to himself, "that's a day associated with transformation. On February 29 the enemy withdraws on his own initiative. That's interesting! If it hadn't been for the attack on *Accomplish* last year, this might never have been possible. A negative event is converted into something positive. It's a reversal! A promising indication of what is to come."

128. UNIAC

The sale agreement was signed with Oppenhauer in mid March. *Accomplish*² beta was launched a week later under the name *UNIAC*, an acronym Anya created to represent Universal, Networked, Intelligent Accomplishment Consciousness. Although the company targeted only twenty-five thousand users for the beta test, word spread quickly among satisfied users of *Accomplish* and more than seventy-five signed up. MAI posted a detailed description of *UNIAC* on the launch site, explaining how it differed from *Accomplish* and what measures had been incorporated to prevent recurrence of data pollution.

Although they had allocated two months for the beta test results to come back, actual feedback began pouring in from advanced users within the first three days. Results were monitored and processed daily so that management could closely track the new product's performance. From day one the trend was clear. *UNIAC* was an enormous success among advanced users. On average they reported a 60 percent increase in their own performance over the previous version. Combined with the fact that *UNIAC* was distributed free, they rated the product a perfect ten.

Everyone was thrilled by these results, but after all that was to be expected. *UNIAC* built on all the strengths of the earlier product and just enhanced them. MAI had to wait longer for the more critical results from the poor performer group. Many from this group whom Vinay's team approached were unwilling to participate in the beta. Finally, they had managed to pre-enlist five thousand poor performers. Since these users were less familiar and less adept at using the earlier version, they took longer to learn and adapt to changes in the new release. Encouraging feedback began to trickle in during the third week of the test but it was not until the end of the thirty day evaluation period that anything definitive could be concluded. By then it was evident that poor performers on *Accomplish* could no longer be classified as poor performers on *UNIAC*. On average they reported a 45 percent improvement in their work performance above normal levels using the new product. In some cases it rose to 200 percent or more. Obviously, the nine levels classification had been successful in addressing the bias against some personality types. Gradually word spread among previously dissatisfied users that *UNIAC* was worth trying. In the second month, beta test participation swelled to one hundred fifty thousand, including more than fifty thousand who came from the old poor performers group.

MAI had absolutely no idea whether the previous group of hackers were again trying to pollute the central data base, but it engaged the old Berkeley *Accomplish* users group to make conscious efforts to pollute one area of the system. Test results showed that *UNIAC* simply ignored the erroneous data and maintained its uniformly high performance levels.

While few bugs were detected in *UNIAC*, a number of very useful suggestions came in from early users which MAI decided to incorporate in the new release. After these modifications, *UNIAC* was officially launched on April 24. Early press reports during the beta test had been extremely mixed, with many raising the specter of the earlier debacle. But by the time of the official release, there was little scope for negative press. Feedback from users was overwhelmingly enthusiastic. Against Vinay's planned distribution of two hundred fifty thousand copies in the first month after launch, actual distribution exceeded seven hundred thousand and rose to four million by the end of the second month. The annual target of ten million was reached by August 15. MAI had to expand its data center much faster than anticipated to keep pace with the increased flow of traffic through the system.

As the popularity of the software spread, the spirit of resourcefulness and innovation that had characterized the first few months after the launch of *Accomplish* returned. But this time the enthusiasm rose to extraordinary heights. User groups sprang up overnight all over the world. Self-appointed consultants put themselves up for hire. Training institutes promised to impart black-belt level expertise in *UNIAC* to novice users. All these things had happened before, but this time it was on a far larger scale.

That was only the beginning. In the past *Accomplish* had been successfully used as a networking device by small groups to enhance their personal performance on the job, but it had never been used as an instrument for building wide area networks focused on the same task. The first attempt was made by NASA for development of a Mars space mission that required coordination between more than ten thousand organizations. During the first month of the project, the NASA team reported a 17 percent acceleration of the time schedule and a 14 percent reduction in project cost which they attributed to the use of *UNIAC*. As this news circulated, several Fortune 500 companies in the aerospace and automotive industries approached MAI requesting customized versions of the software for use in new product development. Boeing, which had run into delivery delays on its new 787 Dreamliner, decided to introduce *UNIAC* to see if it could make up for the six months of lost development time. The largest of the corporate systems was for an undisclosed application that involved more than thirty thousand user nodes which had to be integrated for close

coordination. It took MAI two months to customize *UNIAC* for the client and earned the company sixteen million dollars in development fees.

After that the demand for *UNIAC* grew explosively, both among individual and corporate users. In spite of early concerns that this would eat into the market for AIS⁹, the contrary actually happened. Corporates found that AIS⁹ was ideally suited for central coordination and development of strategic opportunities, whereas *UNIAC* was best suited for closely coordinated work between thousands of individuals or operational units. Corporates requested MAI to deliver integrated packages combining the benefits of both systems at prices ranging from three million to fifteen million dollars per client. The integrated system was christened as *UNIAS*.

Meanwhile, new and unexpected developments were taking place in cyberspace. Networks of independent users began self-organizing to leverage their combined knowledge and expertise on a global scale. The full implications of this change were slow to be recognized. Some Internet visionaries prophesied the replacement of the modern corporation by distributed networks of independent individuals using *UNIAC*. Those of an anarchist bent revived calls reminiscent of the 1960s "Down with the establishment". Those fascinated by the positive impact on the global economy announced the coming of an age of full employment where every individual could participate in the world's work according to personal capacity and predilections. Specialized user groups proliferated in hundreds of fields. Isolated individuals joined global workgroups that could more fully utilize their knowledge, expertise, idealism or enthusiasm.

A diabetic Indian woman living in Mumbai who had cured herself of the disease using traditional herbal medicines in less than six months established a global network of experts applying a variety of alternative methodologies. Using *UNIAC*, she documented cure rates ten-fold higher than the American Diabetes Association believed possible. An enterprising Internet-entrepreneur in Pondicherry, who rarely travelled out of his own house, launched a virtual company which was a holding company for more than fifteen thousand virtual entrepreneurial businesses by the end of the first year with total revenues of seventy-five million dollars. *UNIAC* was acclaimed as the greatest boost to human productivity and commerce since the invention of the marketplace and the greatest frontier for making money since the development of the stock exchange, investment banking and hedge funds. All concurred that *UNIAC* made it possible for individuals and organizations to interact more rapidly, efficiently and profitably than ever before. Some even likened its impact to the invention of language, money and the Internet and saw it as a precursor of the first truly global social organization.

Equally significant, a group of Linux users decided to integrate *UNIAC* into the operating system so that every functional activity performed on a Linux-based PC would automatically be guided by inputs from *UNIAC*. In the process, Linux was being transformed from a physical system for management of computer protocols into a human decision-making system capable of intelligent decisions in life situations. In other words, *UNIAC* began to *evolve* from a stand-alone product into an integrated part of the computer and with it the personal computer evolved too. The age-old conflict between the human being and the machine was being resolved in a new and unexpected manner. It was no longer a question of whether human beings would dominate or be enslaved by their technological creations. *UNIAC* was clearly perceived to be an extension of human consciousness, an interface by which human aspirations and knowledge could express themselves more effectively in and through physical processes. *UNIAC* did not elevate the machine to a greater status than people. Rather it elevated human beings to the status of true masters of their inventions, capable of expressing and translating their intentions into more efficient and marvelous mechanical and electronic devices. Finally, a way had been found to declare a truce in the self-proclaimed war between technology-lovers and Luddites, between people who worshipped machines and people who cherished human potential.

129. Learned Opposition

As enthusiasm for *UNIAC* rose from individuals and corporations, opposition seemed to increase proportionally from the academic community. MAI had already encountered intense but isolated protests or denunciations after the launch of *Accomplish*, but nothing prepared them for the range and bitter intensity generated by the growing popular acclaim of *UNIAC*. Once again they found that the opposition came from discrete segments, each of which challenged or decried the product on different grounds, making it that much more difficult for the company to respond.

Business schools and academic economists were the first to organize their opposition into a cohesive force. Leading management professors denounced initial reports of corporate success with the product as hocus-pocus. Prominent economists revived the moniker 'voodoo economics' to disparage claims by a few of their younger colleagues that national economies had the potential of doubling their GDP growth rates by application of *UNIAC* on a nationwide scale. MAI decided that skepticism and cynicism arising from these groups was the least significant because it was based on assumptions that could be tested operationally and would eventually be proven true or false by actual users of the software. In practice, as more and more companies adopted and applied *UNIAC* and discovered for themselves the contribution it could make to their performance, rising demand for consultants with expertise in the software and for educational training programs for managers offered a lucrative field which leading universities were loath to forego.

Resistance from economists was more deeply rooted because it founded itself on underlying assumptions regarding the essential scarcity of resources that had plagued the dismal science since its inception. But the explosive growth of the Internet and the emergence of new principles as embodied in the term *Wikinomics*—coined two years earlier by Tapscott and Williams to describe the economic potential generated by openness, peering, sharing and acting globally—had already done much to undermine faith in traditional economic principles based on scarcity. *UNIAC* built upon this foundation but provided a means to multiply its impact in two dimensions—by raising the notions of technology and productivity from the physical to the mental level and by providing a means to far more efficiently and effectively harness the planet's diverse human resources. While many economists were still vexed or infuriated by the notion of unlimited prosperity, the concept found strong endorsement among many younger academics searching for a new paradigm, and among countries such as China and India aspiring to revive the positions they occupied two millennia earlier as cradles of prosperity.

The second main source of academic resistance issued from psychologists who sought to debunk the psychological model on which *UNIAC* was based and from neurologists who sought to discredit the more fundamental concept of universal consciousness implicit in the construction of the software. Advocates of behaviorism and cognitive neuropsychology aggressively denounced the six dimensions and nine levels as completely subjective and unscientific. Even humanistic and transpersonal psychologists who believed in classifications of human character expressed discomfort with the attempt to systematically classify levels and types of human consciousness. But among the youngest researchers and new PhD candidates there were many who proposed research projects to examine these models scientifically, and among a minority of respected transpersonal psychologists a few offered enthusiastic support.

Neurologists and cognitive neuropsychologists were more confrontational. They vigorously challenged the concept of consciousness on which *UNIAC* was founded. They sought to disparage the very idea that consciousness existed independently of neurological processes or that it could influence circumstances and events in the external world without the medium of physical action. This was a group that had been defending themselves against the existence of consciousness since quantum mechanics first posited its impact on matter. They were far too entrenched within the fortress of physicality to be disturbed by the success of *UNIAC*. But that did not prevent many of them from vociferously denouncing it at every possible opportunity.

This group drew active support from contemporary biologists who insisted on a purely physical and physiological definition for the concept of life. Implicit in the algorithms of *UNIAC*, though never emphasized by MAI, were notions that were pure anathema or nonsense to this group, especially the idea that life was a universal plane of consciousness and that human consciousness had power over the external world, that it could make life respond. Once suspicions were aroused that *UNIAC* was based on some mystical or superphysical system of knowledge, members of this group actively sought to unearth the underlying premises and philosophy in order—not to subject it to rigorous scientific testing—but merely to ridicule and lampoon it—the best possible means of defeating an idea without ever having to examine it.

Intense resistance was only to be expected from physicists, since they represented the first proponents and last bastion of traditional ‘modern’ science, the mother church presided over by the twin Gods of chance and necessity which underpinned the entire edifice of mechanistic materialism. Ironically, here also islands of interest and support emerged from a few outspoken theoretical physicists whose faith in the iron laws of physical nature had already been deeply shaken by myriad discoveries that lent credence to an entirely different theory of existence.

The most unpredictable response came from the mathematicians. While mainstream mathematics was deeply committed to a statistical view of the universe in consonance with quantum mechanics, some brilliant individuals were impressed by MAI’s effort to reconcile quantity and quality, number and property, substance and consciousness through the application of mathematics. One group prematurely proclaimed the founding of the discipline of consciousness mathematics. There was also a sudden revival of interest in the study of Ramanujan and the application of his proofs in various fields.

The battle of ideas was fought in thousands of forums around the world, often as a solo attack by railing or ridiculing intellectuals against an adversary that wasn’t even present to defend itself. The problem was further complicated by the appearance of self-proclaimed defendants of the faith in *UNIAC*, almost always uninformed, misinformed or consciously exploiting interest in the software to advocate some other set of beliefs unconnected or contrary to the principles upon which *UNIAC* was founded. A combination of hopeless confusion, confounding complexity and blatant misrepresentation made any rational exploration of the issues almost impossible.

Bill and Vinay tended to scoff at reports of ranting negativity, so long as it did not come from the business community. Ray expressed worry and concern. Anya was often outraged to hear the preposterous allegations and ridiculous accusations foisted against the company and its products. Levin believed the problem should not be ignored or taken lightly, but was unable to propose any practical way to address an adversary who attacked simultaneously and mercilessly with such a myriad arsenal of weapons on so many different fronts. Dan refused to react or permit the reports to disturb their focus or equilibrium, yet he too acknowledged that they had to be taken seriously and addressed as far as possible. It was finally Stearne who proposed a mode of response that was both bold and dangerous. It is extremely doubtful that the group would have accepted his advice had he not volunteered to direct the initiative. “Perhaps,” he said to them, “this is the real reason I have come to MAI. Maybe it’s the very reason I was born.”

130. The beta-Debate

The essence of Stearne's proposal was quite simple. The execution would require extreme stamina and resourcefulness. The professor's proposal was to approach national media personalities such as Larry King and Oprah Winfrey and ask them to host public debates on the scientific basis for *UNIAC*. In view of the enormous media attention already focused on reception to the product, the hosts were very likely to see the proposal as one capable of attracting high levels of viewer traffic. Their intellectual opponents were equally likely to welcome the opportunity for international visibility on a scale rarely achieved by academics. The real problem would be for MAI to respond to their proposals if they were accepted by any of the major networks. Of course, it was understood from the start that a rational consideration of the issues on national television was as unlikely as a serious discussion of the nation's political problems was during a presidential debate. But at least, Stearne argued, it would give MAI an opportunity to publicly state that it had rational arguments as well as practical data to support its work. Wherever possible, it would rely on actual performance data to remind the audience that this was not mere intellectual speculation. It was supported by a track record of achievements as documented by millions of users.

The main problem would be finding competent representatives for the company's viewpoint. Stearne insisted that there must be a minimum of two and ideally three representatives of MAI to face the opposition in each case. He volunteered to be one, provided that either Dan or Anya would accompany him. He apologized to Ray for not including him, but said he thought that the pressure might be too great. In any case, that was a decision that Ray alone should make. The real problem as Stearne saw it was to identify the third representative for each appearance. His idea was that this person should be an expert practitioner in his chosen field who could testify regarding the actual results achieved by *UNIAC* practically. Stearne requested Levin to take responsibility for identifying, screening and briefing qualified practitioners willing to participate. That would serve as a ballast to limit the learned opposition from blindly rejecting the company's position without even considering it. Dan was far from enthusiastic about the proposal, but had no alternative suggestions to offer. In order to provide them with an opportunity to test the approach and refine their responses, the professor suggested a trial performance on KQED, Bay Area public radio. He was confident he could make all the arrangements both with the station and with a not-too-hostile opposition to debate with.

The live program was scheduled for a two hour slot on July 15, including a half-hour for call in questions and comments from the station's listening audience. The academic panel included an economist, a psychologist and theoretical physicist from UC Berkeley. MAI was represented by Stearne, Dan and Anya, since they had not had sufficient time to find a qualified practitioner to fill in the third slot. All three professors were well known to Stearne, but none on such friendly terms that they would hesitate to challenge or attack the professor where they felt on solid ground. Stearne had selected them carefully to ensure that they represented in their views the mainstream of intellectual opposition in the marketplace. According to the moderator, a knowledgeable technology correspondent used to covering Silicon Valley firms, the debate was an even draw. Dan had been fairly successful in challenging the economist's views by citing the financial performance of three major corporate clients and MAI itself as evidence that the theory had practical validity. Stearne was familiar enough with the reigning psychological theories of consciousness to pose alternative explanations and point out weaknesses in the psychologist's theoretical framework. He later explained that psychologists were not sufficiently trained in logic and rational thinking to pose much of a threat.

As it turned out, the real heart of the debate flared between Anya and a visiting French theoretical physicist from CERN in Geneva named Harriman. Seeing his opponent was a mere commercial mathematician as he referred to her and also a Russian woman, the Frenchman thought to dispense with theoretical arguments that might transcend the understanding of a lay public audience. Instead he resorted to measured skepticism tempered with mild sarcasm to end the debate before it began. Obviously, he knew nothing about Anya or what to expect from her. His attack was precisely gauged to bring out the very best in one who thrived on serious challenges. She responded in a calm, polite and friendly manner but with a clarity and force of argument that completely took Harriman by surprise and left him struggling to organize a coherent attack. She dismissed his criticism of *UNIAC* as pseudo science by explaining in some detail how the company had applied one of Ramanujan's famous theorems to operationally define the phenomenon of inversion as expressed in male-female and company-customer relationships. The Frenchman obviously had no idea who Ramanujan was or what Anya was talking about, but was reluctant to admit it in front of an audience. Anya concluded by saying that the algorithms developed for *UNIAC* incorporated the impact of observing consciousness on external events and suggested that the scientists at CERN might find it valuable for application in their research on fundamental particles.

There was no audience present in the studio to provide feedback on the event, but judging from the response of call-in listeners, staff and friends in Berkeley and thousands of emails that MAI received during the coming week, the event was a grand success. It may not have resolved any fundamental issues, but it clearly announced to the world that MAI had a viewpoint worthy of serious consideration. After thanking the three professors for participating and inviting them to visit MAI for a tour, Stearne turned to Anya and whispered, "My dear young lady. You were born for this!" Then after pausing for a deep breath, he mumbled to himself, "I do believe we are ready now. At least, I hope so."

In the months to come, debates were conducted on more than twenty morning television shows, business news programs, and political roundtables around the country, plus at least three dozen radio talk shows. The formats and topics varied according to the particular interests of the moderators. After the first two programs, the team decided to split up and do only single appearances in order to leverage their limited resources more efficiently. Anya proved to be the company's most effective representative in terms of audience response. Her high energy level, a personality that thrived on combat and striking good looks even attracted several network job offers. After her first two appearances, Anya's reputation preceded her and opponents became much both more alert and respectful. In spite of her constant emphasis on the central role of human consciousness and human creativity in the success of *UNIAC*, she became incredibly popular among the geeks and techies, young and old, as a spokesman for the power of computers to rule the world. Frustrated by her inability to project her message effectively, she tried even harder to get her message through. The more aggressively she argued, the more popular she became, but it is doubtful whether more than a few really understood what she was trying to say.

In between a heavy schedule of marketing engagements with major corporations, Vinay accepted several TV appearances on business shows and proved almost as successful as Anya. His dark, handsome appearance, youthful vitality, mellow voice and affable personality proved to be strong assets. One debate with two leading Wall Street investment bankers about mergers and acquisitions generated unexpected controversy. Vinay cited the fact that a single individual using *UNIAC* and applying inversion theory had been responsible for the unlikely, but fabulously successful acquisition of a US home mortgage company by an Indian software company. In the first six months after the merger, earnings of the combined entity had tripled and share values had risen four-fold. Vinay boldly pointed out that *UNIAC*'s success rate on M&As was running at near 100 percent while Wall Street settled for a 33 percent strike rate. He also noted that a *UNIAC* broker had charged only one million dollars for services that would have cost seventy-five million dollars or more from a traditional investment banker. At that point the other panelists launched a vigorous denial and attack on computerized trading programs which had absolutely nothing to do with the crux of Vinay's argument.

Regardless of what the bankers understood, the message apparently did get through to the program's audience. In the coming month, thousands of self-proclaimed *UNIAC* investment bankers set up shop and began scouring the global economy for unlikely matches based on the principle of inversion. At first this new breed of independents focused on identifying attractive opportunities, but left the tedious work of financing them to the heavy lifters on Wall Street. But soon a network of *UNIAC* financial intermediaries arose which proved as adept at locating underutilized capital as their counterparts were proving in locating unexploited market opportunities. Gradually *UNIAC* evolved into a new type of business exchange for matching resources and opportunities on a global basis. Informal networks of *UNIAC* brokers emerged, some of which developed into formal partnerships spanning the globe.

Vinay had very little patience with proponents of economic models for business and financial analysis and his lack of tact on this subject got him into trouble on numerous occasions. The public still understood, or misunderstood, that *UNIAC* was simply a more powerful tool for data mining and statistical analysis, so Vinay was frequently invited to speak on the power of computing to generate wealth and multiply money. People had the right idea, but the wrong perspective, and Vinay found it very difficult to alter conceptions and perceptions regardless of how he approached it. He argued incessantly that accomplishment was created by knowledge and consciousness, not data and computers. He sought new analogies and metaphors to distinguish mechanical algorithms based on statistical probability from those in *UNIAC* which were based on universal laws of life and creation derived from *The Book*. The fact that he could not mention *The Book* complicated matters on one side, while preventing even greater controversy on the other. How could he explain when people asked about the source of these so called universal principles? He took refuge in citing the words of high achievers from all walks of life, particularly business, where he was able to find direct or indirect confirmation for many of the principles in *The Book*. Where that did not work, he tried to extract the principles from striking instances of high achievement, even where those involved had not been conscious enough to formulate the principle that had led to their own success. These strategies enabled him to fend off tough questions, but often left his audience unsatisfied and hungry for

greater understanding. Gradually Vinay began to develop a sense of guilt for concealing the existence of *The Book*, as if he were somehow selfishly denying that knowledge to those who genuinely sought it.

Ray reluctantly entered the fray for a CNN Take 5 political roundtable moderated by Michelle Cottle focused on the 2008 presidential primaries. He had done so much work studying the election issues with AIS⁹ that he was the natural choice for the assignment. Whether consciously or unconsciously, CNN positioned the debate as politicians vs. truth. The questions posed centered around how far the main candidates for both parties were applying rational thought processes to advocate what was best for the American people. Ray was inadvertently positioned as a spokesman for objective fact—a position he felt very comfortable defending. He adeptly laid out alternative policy platforms for each candidate that would be vastly more beneficial to the nation and, he argued, to their own success in the elections. His commentary on US nuclear weapons policy touched off vigorous debate between the candidates which left Ray safe and unscathed on the sidelines, since the candidates were already divided on that issue. But when he ventured to challenge the notion of a war on terrorism as a counter-productive strategy that fostered and strengthened the resolve of the very enemy it was trying to defeat, virtually all the politicians joined together in projecting their patriotism. The real issue Ray had raised was buried in the process. Ray soon realized that most political advisers were not really looking for solutions their candidates could adopt at all. To them the choice was between ineffective policies that appealed to voter self-interest and an equally effete range of moral pronouncements that positioned the candidate on the high ground of non-accomplishment. His message that there were real solutions to these problems that would generate enormous social benefits never seemed to get through.

Of all the issues raised during the debates, the one that generated the most heat was not specific to any academic discipline at all. It was the issue regarding the nature of knowledge and the responsibility of science for the consequences of their discoveries. Having committed his whole lifetime to pursue the question of what constituted true knowledge, Stearne saw the central importance of this idea to the future development of science and humanity. Knowledge was power. Knowledge without power was simply information. True or complete knowledge was knowledge that had power to create without any negative consequences.

He quickly emerged as an eloquent and vigorous exponent of this controversial cause on TV programs, talk shows and academic platforms around the country. He feigned surprise each time intelligent and apparently rational men and women flew into a rage at the very thought that science could be or should be held responsible for its own works. But he knew very well that he was striking at the irrational core of modern science and its most sensitive pressure point. When he pointed out that the accountability normally applied to physicians, lawyers, drug companies, car manufacturers and fast food restaurants could reasonably be applied to scientists as well, some took defense in a citadel of scientific detachment and others in their helplessness to control what other politicians or business people do with their ideas and inventions.

As Vinay and Ray entered the fray, Dan quietly withdrew from the road show and went back to the Cloister, saying that the company could not afford to devote all its energies to one strategy. Besides, he said, his initial round of interviews had given him some ideas for AIS¹⁰ and he needed some quiet time to work on them.

The very notion that a higher, more complete form of knowledge existed, which could not be applied negatively or lead to untoward consequences was a strange and inconceivable notion to most scientists, though a line of thought that deeply resonated with the general public and from concerned scientists who shared in Stearne's concern. Even the national academies began to revive their emphasis on ethics and social responsibility. Stearne knew very well that he was projecting a perspective that was fifty to hundred years ahead of its time. In spite of his success in representing it so effectively, he became increasingly frustrated that he could not do more. He saw absolutely no reason for humanity to suffer the experiment of self-inflicted ignorance for another half century simply out of reluctance to examine the issue rationally. He knew and felt that a distant future could be made here and now. He understood that the problem lay much deeper than public policy and could not be satisfactorily dealt with at that level alone. Law and policy were only a starting place and stepping stone to a change of social attitudes and personal conduct.

Ultimately it was only the individual scientist who could fully alter the equation. The uncompromising pursuit of personal career and monetary benefit were simply incompatible with the pursuit of truth. In that sense Stearne regarded Dan, Levin, Ray, and Anya as more entitled to the title of scientist than most of those who won Nobel Prizes for their work. His colleagues not only pursued true knowledge, but chose to act according to its dictates, even when it appeared to require a sacrifice of their own self-interests. The fact that this was only an appearance was a striking revelation to Stearne and one of his most

valued insights. True knowledge and high accomplishment were not incompatible, mutually exclusive or even antagonistic aims. MAI's performance was proof enough of that fact. The idea that they were was ancient myth arising from inadequate understanding. The blind insistence on ignorance and selfish pursuit of egoistic benefit, the desire to dominate over others and succeed at their expense, these were at the root of the problem. The public debates helped clarify Stearne's own understanding until he saw it clearly for the first time. Right motives led to right knowledge. Stearne smiled to himself as he imagined himself heralded as the original prophet of true knowledge some hundred of years from now, when in fact the truly wise had always understood the truth that he was projecting.

Tired and impatient from strain of travel and the stress of argument, Stearne occasionally provoked his opponents into open hostility. Although he liked to be provocative, Stearne was a gentleman of the old school who firmly believed that intellectual discussion should be civil and polite, except perhaps when the other side called in the police to back up their arguments. He did not believe in intentionally insulting other people, but it sometimes happened anyway. Usually the problem arose when he insisted on a rational discussion. This immediately evoked accusations that he was calling other people irrational and invariably led to heated—and consequently, irrational—exchanges that made rational discussion all but impossible. Stearne conceded to himself that his own strategy for generating rationality was itself irrational, because it never achieved the desired result.

Part of the problem was that he did not really believe that otherwise intelligent people could be so blind to their own blindness. He was particularly provoked by comments from eminent scientists like these: "If what you say is true, surely others would have already discovered it;" or "The National Academy does not agree with that statement, therefore I see no reason to accept your viewpoint;" or "What does so-and-so say about it? He won the Nobel, so he must know what he is talking about." The very notion that scientists conceived of knowledge as something that should be based on democratic processes, popular approval ratings or the personal prestige of the person pronouncing on it was galling to Stearne and sent him into an irrational fury, which had him laughing in stitches when he more calmly reported on it to others long after his anger had been spent. In one instance he nearly hugged his opponent when the man told him he agreed with everything Stearne said but would never have the courage to repeat it to his colleagues, because only the word of a highly respected scientist would be accepted. At least this man was honest enough to confess the irrationality of his profession, Stearne thought. "I wondered if there is a single rational man on earth," Stearne quipped to himself. "Judging from my behavior during these debates, it is certainly clear that I do not qualify!"

When he was not tripping on the irrationality of scientists, he often stumbled into controversy regarding the concept of true knowledge.

Most interviewers and talk show hosts were more interested in interviewing the founders who had created the company and the product than refereeing an intellectual debate. Overall, it was difficult for any side to legitimately claim success in these debates. In fact, success had never been Stearne's objective. He knew far better than to expect it. His real objective had been to win respect for MAI and its work, if not from the academics, then at least from the general public who were disinterested parties to the conflict.

In between engagements, they met back at MAI to compare notes and share stories of their combat. Often they questioned the value of what appeared as a futile exercise in self-promotion. As frequently, they laughed over their own ineptness and the misunderstandings that arose from their efforts to generate greater clarity. When serious doubts were raised about the efficacy of the strategy, they would always examine the facts to see what they indicated. The numbers always said the same thing. Month after month, public acceptance and acclaim of *UNIAC* continued to rise and negative feedback declined proportionately. Discussion forums and blog messages became more markedly favorable and supportive, with individual advocates taking over the responsibility to educate others on the issues MAI was trying to address. Call in and email questions on these issues reflected the same trends. The strategy was working.

Stearne insisted that they should not delude themselves into thinking that their effort had much impact within the halls of academia. That, he insisted, would take much longer and be more difficult to achieve. But at least the general public had become more immune to academic pronouncements, and mainstream intellectuals had grown less vociferous and more respectful. Over time academic criticism became more tempered and specific than during those early days. Opposition, even vehement opposition, remained, but MAI was no longer an easy target for ambitious intellectuals in the killing fields of academia. The professor joked that the main beneficiaries of their cross-country educational campaign had been themselves. They now better understood the importance of their own work at MAI. The company itself became more conscious by trying to explain itself to the rest of the world.

131. The Great Debate

After months of persistent campaigning by MAI across the country, word gradually spread among the moguls of modern American media that there was something sufficiently newsworthy and exciting about MAI and *UNIAC* to justify attention at the national level. The problem was that no one could quite define what it was. Everyone was interested, but no one was sure why. Certainly MAI and *UNIAC* were success stories worthy of attention in business and technology circles. But beyond a discussion of the reasons for their impressive achievements, the issues that MAI wanted to debate were too elevated and subtle for the crude, simplistic intellectuality of national television. Hollywood might be able to base a very successful crime solving series on *UNIAC*, along the lines of *CIS* and *Numb3rs*, but no one could come up with a good idea of how to seriously convert a computer program into a meaningful subject for national debate.

This difficulty quite suddenly got resolved in an unexpected manner when the issue of Darwin vs. Creationism and Intelligent Design suddenly surfaced with renewed heat during the presidential primaries. Larry King decided to put together a panel of experts to discuss the issue and invited an outspoken Harvard biologist named Wells, the Southern Baptist Reverend Thomas and a well known advocate of intellectual free speech named, of all things, Freeman. Freeman came down with laryngitis two days before the show and had to drop out, prompting a last minute scramble to fill the vacant slot. King's middle-aged show producer suddenly recollecting reading the proposal for a show including Joseph Stearne, a nationally respected philosopher and educator renowned for his role during the Free Speech Movement, and made the connection. Stearne knew he was walking into a mine field in which he would very likely end up in the middle, caught in the cross-fire from both sides, but the idea of some healthy controversy made him feel twenty years younger. Like Anya, who he had come to love like a daughter, challenges brought out the best in him.

Larry King always researched his subjects well and knew the most sensitive points to ignite discussion. Wells and Thomas quite naturally concentrated on each other, and considered Stearne at best a necessary appendage to their duel. But the whole pattern and balance of the debate changed the first time the professor opened his mouth. Rather than responding to the well-fortified positions taken by both his opponents, he surprised everyone in the room by intelligently making the case for a third front. The strengths and weaknesses of evolutionary and creationist theory were too well-known to justify further national television debate, he asserted, a remark that caught Larry King unawares and set his game plan for the debate altogether off-kilter. Then, in a series of succinct and perfectly clear sentences, Stearne pointed out the obvious deficiencies in both positions. Whatever his statements lost because of the need for brevity were more than compensated by clarity and lack of ambiguity. The rational pursuit of knowledge demanded, according to him, that all rational possibilities be taken into consideration, regardless of whether or not they derived their authenticity from the Church of God or the Church of Science.

His opening statement was so unexpected that neither of the other speakers had a response and immediately reverted to their earlier lines of thought. Larry was suddenly faced with a wide open breach in a discussion that was supposed to be cohesive and coherent. Therefore, he interrupted Wells in the middle of a sentence on Darwin and turned the discussion back to Stearne. "Did the professor," he asked, "know of any third position worthy of examination?"

"Certainly," Stearne replied, and from here onwards he was in his elements and in control of the debate. He moved to phase two of his argument, the problem of life and the problem of consciousness. "Any serious theory of human evolution had to begin defining these two concepts in rational and coherent terms," he said. He then went on to state that neither science nor religion had done so. The real challenge of science was not to explain how the one celled amoeba evolved into a multi-cellular organism, or how a fish evolved into a reptile. It was to answer two questions. First, how did inorganic, insensible, immobile, inconscient matter acquire the characteristics of animate, mobile, sentient life forms? Modern science began with the premise that it all happened by a chance—a fortuitous occurrence so remotely unlikely that it might have occurred only once in the thirteen billion year history of the entire universe. "When rational thinking leads us to propose explanations that are so highly improbable, doesn't it make sense to look around for alternative explanations?" he asked.

To strengthen his case, Stearne showed how current thinking in biology was as much a relic of the early history of modern science as current teaching in Christian theology was bound by the text of the Bible. "The great scientists of the seventeenth and eighteenth century who challenged the Church's claim to a monopoly on knowledge very well knew the limitations of their own empirical approach and balanced it by a healthy respect for the metaphysical and even the mystical. Their task was to erect a standard of knowledge not dependent on blind adherence to Biblical pronouncements, so they started at the most obvious point, with the study of the visible, sensible, measurable and superficial aspects of physical nature. In that limited

sphere with the limited instrumentation available to them, they carved out a territory in which they could legitimately and convincingly challenge Church-based superstition. But they never forgot the limits to their own methodology and way of knowing.

Stearne perceived that Larry was interested in what he was saying and seemed to like the professors bantering easy style, but he also sensed the impatience of his opponents to speak, so he quickly came to the conclusion of phase two. “Unfortunately, modern science, biology included, has forgotten those limitations. Just because their ancestors started by studying the most external material aspects of reality is no justification to conclude that life and consciousness can or must be defined in strictly material terms. That only forces us to the absurd conclusion that mud, stones and plum pudding are far more real than fear, love, joy, freedom, the grandeur of Beethoven’s Ninth or the subtle lattice of thought in Plato’s Symposium. And, I should add, Science as well. For if the materialist hypothesis is valid, than science itself is merely a collection of chemical and electrical impulses with no greater claim to reality than Fantasia or Shankara’s *maya*.”

Both Thomas and Wells began talking at once, interrupting each other to gain control of the conversation, but Larry politely silenced them both by asking them to respond to what Stearne had remarked about the origins and history of modern science and the materialist hypothesis about creation. Thomas seized the occasion to support Stearne’s view and use it as a staging ground to develop his own argument. But at that point Larry turned the floor over to Wells, who struggled to find an immediate response to the question. Larry then asked Wells to define consciousness. The biologist responded in precisely the manner Stearne had anticipated a moment earlier, by describing it in terms of the chemical and electrical properties of nerve cells. “So, you agree then with Professor Stearne’s statement that science itself is merely a collection of nervous impulses stored in the brain?” Larry perceived that Wells was flustered and immediately turned back to Stearne.

“Tell me more, professor, about this third alternative you spoke of earlier. What is it?”

The professor returned a nod and friendly smile before launching into phase three. “Scientific materialism is based on the hypothesis that matter or material force is the sole creator of the universe. It is based on the *a priori* assumption that material chance and necessity are the twin gods from which the world is created. There is no room for consciousness or even life in their model. A combination of cosmic laws and unpredictable, purposeless change have somehow fashioned a universe in which we find order and purpose everywhere—from the structure of the atom to the relationship between the flower and the honey bee—and where we rightly consider ourselves the high point of evolution because we possess the one thing that material nature most obviously lacks, consciousness!

“My proposal is that we turn the whole model on its head, invert it, reverse the perspective, and look at the whole thing from the other end of the spectrum, starting with consciousness and ending with matter. Consciousness is the creator, not matter.”

Larry interrupted to ask, “But isn’t that what Dr. Thomas and other advocates of Intelligent Design have been saying all along? Aren’t you then saying in different words that God is the creator?” Thomas nodded his head in affirmation and expressed his eagerness to speak, but Larry looked to Stearne for an answer. “This discussion is becoming unexpectedly interesting,” Larry thought to himself. “The old man is sharper than he lets on. I wonder what he is up to.”

Stearne resumed his third argument. “That is a very good question, Larry. To answer it, we need to examine the Creationist or ID view a little more closely. When we do that we find that it too fails to answer the very same questions about the nature of life and consciousness which materialism has left unanswered. No definitions. No answers. The Creationist hypothesis simply asserts that there is an intangible conscious spirit above, that magically creates and inhabits with life forms the universe we live in. But what is the material it creates them out of? What is matter? What is life? What, even, is this thing we call God or spirit? If materialism fails in its attempt by describing everything as an expression or extension of material substance and energy, then creationism fails equally in its attempt by describing everything as creation of spirit out of nothing, without even telling us what that spirit consists of, how it can create something other than itself or what that thing is which it creates. That does not sound to me like a complete answer to the problem.”

Larry looked intrigued and turned back to Thomas, asking him how he would answer the professor’s questions. Thomas mumbled a verse from the Bible but seemed as perplexed as Wells had a few minutes ago. Larry quickly turned back to Stearne and said he still did not understand what the third alternative was which the professor insisted could reconcile these anomalies.

Stearne began phase four with a simple, intriguing statement. “The materialists are correct when they assert that there is a process of evolution from matter. The creationists are correct when they assert that the creator is conscious being, not inconscient material force. But the evolution is not just a mechanical progression of biological forms which accidentally resulted in the creation of life and consciousness. It is a progressive emerging of the life and consciousness involved within matter and evolving because it is already there in the first place—because what we call matter is only a form in which that consciousness perceives itself and life is only the energy of that Consciousness expressing in form.”

“Sorry, professor,” Larry interrupted. “I followed you up to that last few sentences, but you just left us treading on water.”

“Let me put it this way,” Stearne continued. “Suppose there is only one substance, one reality, which we perceive in different ways according to our own personal consciousness. Suppose that the inherent nature of that reality is pure Conscious Being or Existence. Suppose that Conscious Being has the capacity to divide and multiply its centers of consciousness so that it can experience itself either as one unified existence or as countless separate and independent centers of conscious life, as we experience ourselves and each other. Suppose further that it has the capacity to not only know itself for and as what it is—pure consciousness—but also to conceal its consciousness within its own forms of manifestation, to become self-absorbed within its own creation, like the actor who is so identified with the part he is playing that he thinks it is real and forgets his true identity for awhile or like the electrons circling habitually around the nucleus of the atom without ever stopping to reflect on what else they could be doing with their time. Suppose also that it has the capacity to progressively release the consciousness buried in material form from that state of self-absorption, to evolve while in that material form out of that apparently unconscious state into human consciousness or even beyond.

“These assumptions I posit do not deny the existence of any of aspect of reality posited by evolutionists or creationists. But it shows how they are connected. It does not deny the reality of matter or spirit, but shows them to be expressions of a single reality. It does not deny the reality of life or consciousness or insist that they are only accidental products of material energy. But it still leaves one fundamental question unanswered.”

Stearne stopped and looked at Larry. He had purposely handed control back to his host just at the crucial point, hoping that Larry would hand it right back again. It was a chance he had to take, but it was essential that Larry ask for the answer rather than just passively listen to the professor’s assertions. Larry glanced over to Wells and Thomas and found both of them looking at Stearne. He knew that they both had the same question in their minds as he had in his, the question the professor had so adeptly planted before handing back control. He turned back to Stearne and said with a broad, genuine smile bordering on admiration, “OK, professor. So tell us, what is that unanswered question? And, if as I suppose, you also happen to have an answer to that question, you might as well tell us that too.”

“What is the process?” Stearne said, as he began the fifth and last phase of his argument. “What is the process by which consciousness or spirit becomes the material universe and evolves back again through a gradation of higher life forms to become more and more conscious until those forms ultimately realize their own origin and true nature as Conscious Being?”

The professor described that process as the *process of creation* and he explained it as a *process of self-conception, self-limitation and self-absorption*. The Conscious Being conceives of itself as myriad forms and beings and it becomes those forms and beings by a process of self-limitation or division and self-absorption or involution of consciousness. “We already know all aspects of that process because it is the very same process by which we human beings create our own lives and the social world in which we live. It is the same process by which Shakespeare, that great seer of life, composed thirty-seven plays and hundreds of sonnets in his creative imagination and gave expression to them as immortal literature. It is the same process by which philosophers and inventors formulate new ideas, theories, processes and products. It is the same process that our founding fathers used to conceive of a nation founded in freedom and dedicated to the proposition that all men are created equal. It is the same process by which we each conceive of a romantic soul mate and seek out that person as our perfect complement. There is only one process, regardless of whether we follow it consciously or unconsciously. Isn’t ironic?” he asked. “All the greatest minds in science have said their greatest discoveries arose by an intuitive process, a process of consciousness; not as the result on any experimental method. Yet the discipline we today call science values only method and procedure. It says and knows nothing about the creative process behind its own greatest achievements.”

Perceiving that time was nearly up and that he had been almost insultingly negligent of his other guests, Larry signaled to Stearne and took back the floor. “Thank you professor. I think we have time for just one more comment. Yes, Professor Wells.”

“Thank you, Larry. Professor Stearne has no doubt spoken eloquently and passionately, but I am a little surprised to find him enunciating an alternative hypothesis for creation of the universe for the first time on live national television. I would not think this was the most appropriate forum. For one thing it has not provided us with an opportunity to study his views in advance and respond appropriately. And, if I may, I would like to ask the professor one last question. Is there a single iota of evidence to support the theory you have enunciated?”

Larry signaled Stearne that he could answer, but do so briefly. “Professor Wells’ points are very well taken. It was not my intention to propagate a new theory here today. My main purpose was to demonstrate that there is sufficient justification for questioning both of the established viewpoints and for looking at new or alternative hypotheses which may be more complete and satisfactory than what we have considered until now as the only possibilities. Unfortunately, the scientific community has shown little interest in considering alternatives. As for your question, the answer is ‘yes’. There is abundant evidence. For what I have called the theory of creation is actually the process that governs all human accomplishment in every sphere, including both business and science. And it is noteworthy that for all its efforts to understand man and the universe, science has almost nothing worthy to say about that process, about how we create and accomplish in our own lives and in the world around us. Finally, I will add that the process I have enunciated is precisely the process incorporated in MAI’s AIS⁹ and *UNIAC* intelligent systems, which are now being successfully used by millions of people around the world.”

“Wow, professor,” Larry said, “listening to you makes me sorry I did not study philosophy before going into journalism. I wish we had more time to hear what you are doing with this theory at MAI. I’d like to thank our other guests and apologize for not devoting sufficient time to explore their views. I confess I was not expecting our discussion to go as it did. I hope you will both come back and join me for another show. Goodnight.”

After the show, Larry came over to Stearne and chatted for some time, expressing his genuine appreciation for the professor’s eloquence. “Just think,” he said, “you and your theory may become very famous one day, the next Newton or Darwin, and it all started here on my show. You’ll be immortalized and I’ll be forgotten along with Dan Rather, Edward R. Murrow and Walter Cronkite!”

That night in his hotel room, Stearne had difficulty sleeping. He felt a mild sense of elation arising from the fact that he had been able to project *The Book*’s view of an alternative hypothesis before the whole nation. It was a remarkable thing. He was filled with admiration for the author of *The Book* who had perceived that knowledge, conceived those thoughts and expressed them in such elegant prose. At the same time, he was tormented by a sense of guilt. He had spoken today as if the ideas he expressed were his own, when in fact they were not his at all. He had no hesitation in acknowledging the value of another’s thought and accepting it. But he had been placed in the embarrassing position of espousing ideas without being able to disclose their source. When Larry had joked about his becoming famous, he suddenly became aware of the untenable position he had placed himself in. It was simply impossible for him to allow the world to think he was the author of those ideas. That would be terribly dishonest.

132. Of Grids & Matrices

As academic resistance receded, public acceptance accelerated. The growth of *UNIAC* at this time was aided by increasing interest in the power of grid computing. Grid computing was an idea that had fast been gaining prominence even before the launch of *UNIAC*. A year earlier IBM, Google and Stanford University had formed an alliance to promote a parallel computer-programming technique for clusters of processors known as ‘clouds’. The goal was to create a protocol capable of distributing processing tasks over thousands or even millions of computers connected to the grid. Grid computers multiply computing power by enabling computers to share their processing power. *UNIAC*’s network multiplies the power of human consciousness for accomplishment by enabling *UNIAC* users to share their knowledge, expertise, decision-making powers for higher accomplishment in specific fields.

Once the movement caught on, *UNIAC* grids, as they came to be called, spread globally in most occupational fields, including sub-grids for various commercial, medical, legal, scientific and technical disciplines and specialties. Although the *UNIAC* nodes were available for no charge, MAI began to generate substantial revenue from the customization and integration of nodes into specialized grids. In addition, the growing popularity of the software was moving the company to the center of the global computing network. *UNIAC* was gradually integrating itself with a widening range of human activities and becoming a vital contributor to the productivity of global society. As a cumulative result of these developments, Microsoft came under increasing pressure from clients and governments to integrate the *UNIAC* engine as part of its operating system. Before the end of 2008, more than twenty-five million personal computers globally were linked together on the *UNIAC* network. This, combined with higher than expected growth from AIS⁹, which seemed to only benefit from the wide adoption of *UNIAC*, resulted in revenues in excess of five billion dollars and net income of over two billion dollars during the first half of 2008. At the current rate of growth, MAI’s revenues were likely to cross fifteen billion dollars during the year. And growth was still accelerating.

An unexpected consequence of these developments was the gradual demise of the product liability lawsuits against MAI, which happened without any initiative by the company. Tens of thousands of users who had signed the legal forms offered to them in order to get compensation for losses that were for the most part imaginary, dropped out of the cases on their own initiative. While it had been popular to complain and sue MAI for their negligence the year before, it had now become popular to praise and appreciate the company for its wonderful product and service to humanity. Too many people were using and prospering by means of *UNIAC* to retain any grudge against the company. As the number of plaintiffs dwindled, it became easier for MAI to identify and concentrate on those who filed the most serious claims. On the few which appeared to be legitimate claims for compensation against losses actually incurred, the company offered immediate settlement. On those that appeared entirely frivolous, wrongful or even conspiratorial, it refused to negotiate at all and set about gathering evidence to fight these claims. Here they received unexpected support from the network of *UNIAC* users who in many cases tracked down and provided concrete evidence of misrepresentation or fraud against those complainants. When the US Attorney General’s Office finally became convinced that a conspiracy had in fact been behind the collapse of *Accomplish*, it began a serious investigation of the remaining cases, most of which were immediately dropped by the claimant or rejected by the courts. With that, the potential threat to bankrupt MAI literally vanished into thin air.

MAI’s management team met frequently to monitor these developments, which were expanding on their own without initiative by the company. In retrospect, it became evident to them all that the decision to distribute *UNIAC* free was the real tipping point at which MAI’s exponential growth began to take off. That decision had been arrived at by using the latest version of the decision-making matrix incorporated in AIS⁹.

II +/- Good start but eventually fails	I +/
IV -/-	III -/ Slow start but succeeds

The *Archives* had spoken of a decision matrix with four quadrants, each of which could be further subdivided into four, bringing the total to 16 sub-quadrants. Any decision taken in Quadrant I would lead to

a successful outcome, denoted as x . According to the *Archives*, a decision taken in Q-I-1, the highest level of the 16, should generate exponentially greater results, x^2 , and do so far more rapidly. Theoretically, Q-I-1 can be further subdivided into four, bringing the total to 64 sub-sub-quadrants. A decision taken in Q-I-1-1 might generate results equal to x^3 . That seemed to be precisely what was happening with *UNIAC*. It was generating exponentially greater results than any one had imagined possible in a fraction of the time originally planned for product dissemination and adoption. The question was, ‘Why?’

Practically, it was not difficult to explain. But Dan insisted that they try to understand it theoretically. Only then they would know how to apply the same principles more effectively in future. If MAI had successfully shifted their decision from Q-1 to Q-I-1-1, then they should be able to identify how they had done it. After long discussion, they came to the conclusion that there had been several crucial factors. These turned out to be the very same factors which *The Book* stressed had to be overcome in order to manifest the infinite in the finite—limitation of knowledge, falsehood and ego. First, in making the decision to freely distribute *UNIAC*, they had managed to assume a wider, less limiting perspective of the product and their business. By viewing it in a wider context and from the viewpoint of the users, they had stumbled on a wider social opportunity exceeding all their expectations. Second, they had decided to be absolutely transparent and truthful, both with the general public and with Oppenheimer. While conventional wisdom had suggested they provide Oppenheimer with only that information which law compelled and which common sense indicated was in their best interest, instead they had told him everything they were thinking and planning. Instead of convincing him to hold on to his shares, it had the diametrically opposite effect. The truth had frightened him and set them free.

Third, they had decided not to act out of motives of egoistic possessiveness. They applied the principle of grow by giving. They gave *UNIAC* away free and desisted from charging user access fees for the central data base. They had followed the advice of AIS⁹ in spite of the fact that it defied standard business logic. Every business needs a revenue model, yet AIS⁹ had advised them to refrain from claiming the two most obvious forms of revenue the software could generate. Undoubtedly this decision had been one of the principal reasons for the rapid adoption of *UNIAC* by the general public. In the process it had generated a number of revenue streams which the company had not foreseen, including product customization fees for corporations, grids and countless other types of special applications that poured in almost daily. The question was how and why did it have that result?

Dan believed that the decision to distribute *UNIAC* for free was a movement away from two central characteristics of ego—selfishness and possessiveness. This was the crucial factor that opened the door to exponential expansion. “If that conclusion is correct,” he said, “then it raises an obvious question. Shouldn’t we consider applying it comprehensively to other aspects of our business as well? Should we give away other things, such as AIS⁹, product source code or patent rights on *UNIAC* also?”

Up until that point the group had been casually engaged in following Dan’s logic in a self-congratulatory atmosphere reflecting back on their own remarkable achievements. No one in the room, except perhaps Levin and Stearne, had the slightest suspicion of where Dan was going with his argument when he started it. Both of them knew both *The Book* and Dan’s mind too well to be misled for long. The rest of the group was surprised and stunned by his question. Bill shook his head in disbelief. “Just when everything was finally started to go their way,” he thought to himself, “when Oppenheimer had withdrawn, academia had quieted down and there were no evident sign of data pollution or other forms of attack, Dan decides to rock the boat again, threatening to upset everything we have managed to create. Just because we made a lucky decision last time, is no guarantee it will work again. Why now?”

Dan read the consternation and frustration on Bill’s face and surprised everyone by repeating virtually verbatim the thoughts that had just passed through Bill’s head. “Don’t look so surprised, Bill. I don’t have to be a mind reader to know what you are thinking,” Dan said with a warm, sympathetic smile. “I assure you Ray and Vinay are thinking something very similar. I am not sure about Anya. She may be beyond the point where anything I say surprises her anymore.”

“Is this your idea of a joke, Dan?” Ray asked, “Or is it some kind of shock therapy to ensure we do not fall prey to self-satisfaction and complacency? Or are you trying to tell us we have become greedy for money and success, and that’s not good for our souls?”

Dan laughed and then replied. “None of those, Ray. I have entirely another reason in mind. We started out nearly five years ago to create a program for human accomplishment and we have succeeded way beyond our wildest dreams. But that does not mean we have done all we can, or that we have taken this effort to the limit of its potential. According to my understanding of *The Book*, we have not. The question I am asking myself as much as you is whether we should stop here with what everyone acknowledges is a great success or whether we should follow *The Book* the rest of the way.”

“The rest of the way where, Dan?” Vinay asked. “Where precisely is it that you think *The Book* is taking us? What is the end you see in view? I am asking, because just now I am able to see, at best, just a few more steps out in front of the here and now. I have absolutely no idea where we are going or how or even why, for that matter, except that it is thrilling, financially and personally rewarding, and tremendous fun. As far as the money goes, I think we all have earned more than enough in the past three months to meet our needs for the rest of our lives, so if you are trying to say we should stop earning for ourselves and do something for humanity, I am as ready as the next person. I am just not clear what you are trying to tell us.”

Anya loved to hear Vinay talk that way and she knew he meant every word of it. She loved the fact that he valued the work and their relationship with Dan above and beyond any material benefits. She knew if Dan asked him or if she asked him, Vinay would be prepared to give up the whole thing they had created, everything but her anyway. She loved all that about him and it warmed her heart to hear him say it. But she too wondered what Dan was getting at and what he wanted them to do.

“Let me propose what the professor refers to as a thought experiment. What do you think would have happened to Apple’s Macintosh operating system,” Dan asked, “If Steve Jobs had decided to license it to other personal computer makers back in 1985 at the same price or twice the price of MS-Dos?”

“Why, that’s easy to answer,” Ray responded. “The Mac operating system would have become the universal standard and every PC in the world would have had a wonderful Graphic User Interface a decade earlier than it did with Windows. In fact, Windows would probably never have been born in the first place, because nothing could have competed with what Apple created, and probably nothing still does. Apple would be a fifty billion dollar company now like Microsoft earning five or ten times more profit.”

Dan replied, “In other words, Ray, I think you are saying that Jobs’ decision was in Q-1; whereas if he had licensed it at the price of MS-Dos, it would have been a decision in Q-1-1 or maybe Q-1-1-1. OK. Now let me ask another question. What do you think would have happened to Microsoft if Gates had decided to distribute Windows at the price it cost to develop and distribute it?”

“Linux probably never would have been developed,” Ray said. “That may not seem very significant today, but suppose in ten years Linux develops features equal to or greater than those Windows offers today. What will be the market for Windows then? Isn’t that what happened to the Macintosh? Apple’s decision created Windows as a competitor. Microsoft is doing the same thing with Linux now.”

“If Gates had acted any differently than he did, he would have made a lot of wealthy Microsoft shareholders very angry,” Bill quipped. “He acted in the best interests of his shareholders. And he wouldn’t be the richest man in the world today running a foundation that gives away billions.”

“I never could understand the reason for accumulating such huge wealth, if the only thing you can do with it is give it away,” Anya commented. “I mean why accumulate it in the first place when you can save yourself the bother? Why not just charge a lower price? I believe Gates even said he did not want to ruin the lives of his kids by leaving them with too much money to manage. I never could comprehend the high people get from such absurd levels of wealth. It’s like weighing ten thousand pounds! What’s the charm?”

“I know better than to enter into a debate with Anya about the relative merits of capitalism and socialism,” Vinay said. “USSR may have failed, but Anya still believes that spreading wealth makes a lot more sense and I don’t disagree. After all, one of the reasons for the failure of Communism was that capitalism stole its agenda seventy years ago and found another and better way to provide social security and higher incomes to people. So there is no sense arguing about the goal. The only question is the means.”

“But I think I can answer Anya’s questions in another way,” Vinay continued, “perhaps the way Bill Gates would if he were here today. I think he would tell us that he has earned fabulous wealth for millions of people—employees, shareholders and customers—who have benefitted by the company’s remarkable growth. In the process, he has acquired enormous social power—power to influence decisions and developments in society, economic power to promote new technologies, political power to influence national leaders—and I think his generous financial contributions to fight AIDS and other problems of the poor are quite commendable. At least he has had the common sense to give most of his wealth away. That’s more than I can say for most of the super-rich. That’s how I would answer Anya. But I’m still not sure what you are asking, Dan. Are you saying you think Gates and Microsoft could have earned more by trying to earn less?”

Stearne interceded. “First, I think we need to keep in mind the distinction between accumulating money power for the sake of the ego, and the power to create money, wealth, for the sake of the world. The two are very different things, but they may appear the same to other people. You people have to decide to

which of these two goals you want to dedicate the remainder of your working lives.” He paused and looked around the room and then resumed. “I think Dan is trying to go back to first principles to understand MAI’s accomplishment. He has shared with us three reasons that he believes are behind the phenomenal, unexpected success of *UNIAC*. His point is that if certain principles are responsible for that success, why stop here? Why not take those principles to their natural conclusion and see what happens? He is not asking you to renounce what you have achieved. He is saying that if these principles have enabled you to achieve this much, maybe they are capable of something even greater—perhaps much greater. If so, why not find out? Why not test the limits? Am I correct, Dan?” Dan nodded his consent and did not add a word.

“The limits of what?” Ray asked.

“The limit of limits,” Stearne replied. “According to *The Book* there are no limits. The potential is infinite. That is the theory anyway.”

Ray seemed to be overwhelmed by the professor’s statement and unable to think or comprehend what it was all about. Vinay sat back in his chair and became immobile. Bill looked dumbfounded. Only Anya seemed to be happy and increasingly cheerful. “You want to test Ramanujan’s concept of multi-dimensional infinity. You want to prove what the *Archives* say, that infinity is a practical concept. If that is what you have in mind, it sounds totally crazy and unrealistic, but I am all for it!”

“Well, assuming we all finally come to agree, Dan,” Vinay said, “how would you actually go about it?”

“By doing what we have been doing up until now, by trying to give up the hold of ego on our work without any idea or expectation of how it will benefit us later,” he replied. “All I am trying to say is that if we want to keep expanding, regardless of our motive, the best way is to ensure that we do not let ego get in the way.”

A profound silence descended over the group and gradually grew in richness and fullness until it was difficult even for thoughts to disturb it. No one moved. No one spoke. Suddenly Bill’s mobile rang. Unwilling to disturb the meditative atmosphere, Bill left the room to take the call. He came back a few minutes later with an enigmatic expression on his face. “You are not going to believe this,” he said. “The Government of Singapore just called. They would like a quotation for connecting every household and every company in the country into a *UNIAS* grid combining centralized and uncentralized operations with functions customized to meet both human needs as well as those of business. They estimate the grid will require about 1.5 million nodes. I told the guy our customization fees would probably exceed one hundred fifty million dollars, but they seemed OK with that. That would make it by far our largest contract so far.”

Levin spoke for the first time since the meeting commenced. “Well, if that is any indication of things to come, I would say implementation of Dan’s proposal is going to make things quite interesting around here.”

The meeting continued for another two hours. The management team explored options for applying Dan’s proposal. They discussed the possibility of delicensing *UNIAC* and publishing the code so that anyone could modify and enhance it. That would certainly lead to more innovation than they could do by themselves, but it would undoubtedly lead to corruption of the algorithms in violation of the underlying principles on which they were based. Unless people had access to *The Book* and understood its message, any tampering with the *UNIAC* engine might lead to catastrophe. So they all agreed that they had to maintain control. Not for the sake of accumulation, domination and self-aggrandisement, but for the sake of safeguarding the system from corruption.

Stearne sat quietly in the corner listening with amazement to this group of relatively young business people seriously contemplating what they should give away and how to do it. His heart warmed to the whole group. In his youth he had chosen academia because it seemed to offer greater opportunities for giving and serving rather than building up oneself. Now he was not so sure he had made the right decision. Here was a small group of people with the knowledge, power and aspiration to change the world and make it far better than it was today. That is what had first brought them together in 2000. That is what they set out to do a year later. And that was what they were in the process of accomplishing. It was at once humbling and immensely gratifying for him to witness and participate in that venture.

Ray finally brought the conversation back to a central issue that had been bothering him. “I confess, Dan, that when you opened this topic today, my first response was annoyance. Why are you raking up trouble? Now I am glad you did. I don’t think we have come to any clear conclusions or decisions today, but I think we are asking the right questions. I too would really like to know what comes next. If money is not

the objective, what is? Is that all *UNIAC* is good for and meant for? Or is it capable of helping people accomplish something more?"

"This is why I value that guy so much," Dan thought to himself. Without answering, he adjourned the meeting, confident that the issues raised would remain on everyone's mind until the next time around.

In the following weeks, other new proposals flooded the company and nearly overwhelmed its capacity for response. As new grids developed they conceived of new ways to integrate *UNIAC* with other software applications, expanding its range of function and its power. Many of the larger grids were willing to pay fees totaling tens of millions of dollars to make the customizations they required, since the actual cost per user worked out to be negligible. Other approaches became popular. Grids of consultants offered to share their profit-sharing fees with MAI for greater access to the underlying principles governing operation of the program. They argued that greater personal knowledge enhanced their capacity to utilize the software effectively.

UNIAC made large inroads into schools as well. Educators were at first extremely cautious and suspicious of the step, but the results of pilot tests in a number of American school districts were quite impressive and went a long way to dispelling fears. Stearne addressed a group of small college presidents who visited MAI. When asked for the underlying principle that made *UNIAC* so successful, he replied, "The same principle that makes for effective educators. A true educator understands that the role of the teacher is to help the student learn. True education starts from within and is guided by the awakened curiosity of the student, not imposed from outside by the authority of the instructor. True education is based on the principle that the consciousness of the student is the most critical factor, that the individual is the real determinant of human accomplishment, that mind is more powerful than matter. *UNIAC* is based on the very same principles." It was not clear how much the visiting presidents understood Stearne's explanation, but after their visit a half dozen of them approved adoption of *UNIAC* learning systems. After that the software spread by a ripple effect through colleges and high schools around the country and overseas.

133. The New Investment Bankers

The Singapore contract matured much sooner than anyone had expected. A week after the call to Bill, a delegation of ministers and technocrats arrived to discuss the functions, modality and cost of the system. Ten days later the Prime Minister announced at a press conference that Singapore was building the first fully integrated, national *UNIAC* grid to ensure his country continued to maintain high rates of growth and rising living standards over the next decade.

That announcement immediately triggered an avalanche of calls and visits by governmental and business delegations from other countries. Malaysia, Hong Kong, Dubai and Qatar were the first to arrive. A few weeks later Ray was surprised to get a call from Professor Richard Courke, who had chaired the Ireland Committee three years earlier. Courke said he was talking with political leaders in Ulster about the possibility of installing a *UNIAC* grid throughout Northern Ireland, integrating Catholic and Protestant communities there within a single network. Preliminary studies by the London School of Economics had projected that it could halve unemployment and double growth rates in the country. When the Prime Minister of the Irish Republic heard about the scheme, he instructed his government to assess the potential benefit of installing a similar grid in the south. Ireland was already the fastest growing economy in Europe with one of the highest income levels and lowest unemployment rates, but the PM was eager to do more. Researchers at LSE decided to model the impact of unifying both northern and southern Ireland within a single *UNIAC* grid and were startled to discover that both regions could achieve nearly 50 percent higher growth by working together. Although there was considerable resistance and skepticism from some old die-hard political opponents in Ulster, public response was enormously positive and the two governments decided to conduct an in-depth feasibility study.

India and Pakistan also took note of these developments. The chairman of the Indo-Pak-Iran pipeline project visited MAI to discuss what possible impact a *UNIAC* grid might have on relations between the two countries. Out of those talks, the idea emerged of starting with a pilot project in Kashmir linking the two divided parts of the state with each other. Both countries were afraid that bringing the two parts of Kashmir together might encourage the secessionists on both sides. So instead, they began exploring ways to also integrate each half of the state with the national economies of India and Pakistan. Kashmir had been the thorn that divided the two neighbors since partition in 1947. Suddenly it was being converted into a means for bringing them closer together.

When news of the Ireland study became public, Levin was inundated with requests from government, business and university sources in Israel interested in establishment of an *UNIAC* grid within the country and the Palestinian territories which it occupied. On Levin's advice, MAI said it would cooperate only under the condition that the grid was extended to include all of Palestine as well as Israel. The Israeli government immediately dropped the proposal, but university economists began work on a model to assess the impact. Five months later they published and publicized findings that indicated such a grid could result in a 35 percent rise in Israel's per capita GDP and raise Palestine to the level of Singapore in less than a decade. The report raised vehement protests by fundamentalist parties in Israel and from Palestinian extremists groups who decried it as a trap to undermine their liberation movement. But the idea that both sides could achieve significantly more working together than in opposition gained greater credence and support than in the past.

UNIAC also attracted the attention of other governments, including tiny Croatia and Finland. The biggest opportunity of all emerged from the most unexpected of quarters, Russia. Russia's Finance Minister placed a personal call to Anya. She was almost speechless when she was first informed who was on the line. He invited her to come to Russia as a state guest to explore the feasibility of establishing a *UNIAC* grid connecting all the former republics of the USSR into an integrated social organization. Resigned to the fact that physical domination of its neighbors was no longer possible, Russia had come to understand that human productivity depended on connectivity and relationship. Anya agreed to come on a one week exploratory mission in October along with two other Russians who worked at MAI. It had been nearly a decade since her last visit. She was eager to experience first hand the changes taking place there and to possibly make a difference to the future of a land she still deeply cherished.

Booming business made it possible to complete the payments to Oppenauer fourteen months ahead of schedule, severing the last connection and possible threat of takeover by him and his partners. Since MAI was in no need of capital for expansion, Dan recommended that they utilize the repurchased stock to expand stock options to long term MAI employees. Employee-turnover had become increasingly problematic for the company during the past one year and attrition levels reached 25 percent for the year 2008. This was not because MAI paid below market rates to its employees. Quite the contrary. Nor did most of them leave the company for better paying jobs in other corporations. More than 70 percent of those who

left did so to become *UNIAC* consultants or to start independent businesses of their own based on *UNIAC*. Dan argued that it was a healthy trend to be encouraged, so they refrained from raising compensation to the level that it might discourage the trend. Ex-MAI employees were intensely loyal to the company. They became brand ambassadors and success stories that helped spur the company's growth as well as their own. Many became subcontractors to MAI, providing critically needed human resources to support its continued expansion. MAI even set up a special program to prepare current employees for lucrative careers on their own. This aggravated the problem of maintaining staff levels, but raised the motivation and productivity of employees even higher than it already was.

The company knew that it had to solve the problem of skill shortages some other way. The best solution soon became apparent. It was to draw upon the vast and rapidly growing reservoir of skilled *UNIAC* users around the world. The company introduced a certification program for advanced users and offered free training to those interested in undertaking subcontracting assignments for MAI. These people became the source of most of the project teams engaged to help commission new projects in countries around the world. By the time the Singapore *UNIAC* grid was installed, MAI had built up a network of more than one thousand subcontractors to offer technical support and training within the country. Without the active participation of advanced users, the adoption of *UNIAC* in various countries would have been delayed by years.

A research team at MAI developed a special application for AIS⁹ by which any country could identify specific strategies to double its GDP growth rate. The principle behind the application was to utilize all available national resources to the maximum extent possible, including natural, technological, organization, human, information and knowledge resources. The program not only examined the available resources within the country but compared resource utilization levels and strategies between countries. A pilot project applied to India identified the potential to raise agricultural productivity levels for tomatoes from ten tons per acre to forty tons by application of information regarding nutrient levels in the soil. A parallel test run in California, where yields already averaged forty tons, revealed a potential to raise them to seventy tons or more. Apart from technological potentials, AIS⁹ was also able to identify enormous scope for applying social systems prevalent in other countries. A pilot project conducted in Croatia revealed a potential for increasing credit card penetration among the credit worthy population by 40 percent or more by improving systems for credit evaluation and monitoring. Rather than merely identifying the separate potential generated by each type of resource, AIS⁹ examined them in combination, revealing the potential for far higher gains than had previously been documented.

One of the most unusual and creative applications of AIS⁹ during this period was for collaboration on a global economic research project organized by the Asian Development Bank in collaboration with European Union, China and India. The objective of the study was to model the impact of EU expansion on the dramatic strengthening of the Euro over the past three years in order to ascertain how far it was the result of simply expanding the total population serviced by a single currency. Since currency values reflected a host of social, political and psychological as well as economic factors, econometric models had been unable to generate any conclusive findings. In contrast, the AIS⁹ study attributed more than 75 percent of Euro appreciation to geographic expansion. These findings were then applied to model the hypothetical results of merging the currencies of China and India, which together represented more than 40 percent of the world's total population, to create a dominant Asian currency. The results were so difficult to believe that researchers within the bank suppressed them for a month in order to recheck all their assumptions and calculations. Their final report estimated that an Indo-Chinese currency would appreciate in value by more than 40 percent relative to other currencies and could add a full five percentage points to average GDP growth for the combined economic union. Though the study had been purely theoretical, its findings generated widespread debate because they pointed to the enormous potential benefits of converting many or all national currencies to a single world currency. Even if the USA and Europe chose to remain independent, such a currency would acquire enormous power to spur economic growth and attract foreign investment.

The potential applications of *UNIAC* were so varied, and multiplied so rapidly that it was very difficult to find a single phrase descriptive of its myriad functions. The closest anyone could come to a suitable description was to say that *UNIAC* had begun to provide its users with nearly all the functional capacities of investment bankers. Before the introduction of *UNIAC*, approximately one hundred seventy-five thousand people in the USA were employed in private investment banking with average earnings of more than eight thousand dollars per week and in some places as high as twenty-four thousand dollars per week, making this the highest paid occupational group in America other than securities brokers in Wall Street's largest firms. Three years later, the number of registered investment bankers in the USA had risen to 4.8 million, a twenty-seven-fold multiplication. Almost the entire increase consisted of independent individuals operating through the *UNIAC* grid. While the number of multi-billion dollar mergers and acquisitions did not increase appreciably during the period, these new bankers spurred explosive growth of

M&As among small and mid-sized businesses both within the USA and between America and other countries around the world. Many of the independents achieved income levels in the top five percent of the industry. Similar trends were reported overseas.

134. The Product

Celebrity status continued to have its downside. Although academic opposition had quieted, resistance and vocal opposition continued from many different quarters. Ironically, it seemed to be much greater in technologically sophisticated and innovative America than in many other countries that were considered more conservative. Organized opposition by religious groups gathered momentum as the software grew in popularity, though the reasons cited for that opposition varied considerably from one group to another. Some accused *UNIAC* of brainwashing youth or undermining the work ethic and traditional family values by raising expectations beyond reasonable levels. A few asserted that the software was the product of a new mystical sect bent on undermining Christianity. Some lobbied to ban the software from public schools and succeeded in a few highly publicized instances in the mid-South.

Apart from religious opposition, there was a wide range of opposition from economists. Some raised concern that the falling unemployment levels attributed to *UNIAC* were overheating the economy and could spur a serious bout of inflation. Some held *UNIAC* responsible for overvaluation of the stock market and accused MAI's product of fueling speculative investments. This particular accusation seemed quite ironic to the company, since *UNIAC* was specifically designed to prevent its use for computer-programmed trading activities. Still others expressed concern that the money being created by *UNIAC*-based activities was somehow not real and that it was undermining healthy growth of the real money economy—whatever that meant. And then there were those who blamed *UNIAC* for creating too many millionaires at a time when many people were unable to pay their bills!

Apart from all the specific benefits of *UNIAC* that could be identified, documented and measured, Stearne sensed that *UNIAC* was having a more general, intangible and diffuse impact on attitudes in American society which was far more difficult to assess but, he argued, potentially far more important in its overall consequences. He believed that there were certain occasions when a physical object could come to symbolize something far more than its material value or practical utility, and by means of that symbolism it could have a profound and deep-seated impact on society. Tea, he argued, had played that role in the American Revolution, by becoming a symbol of the colonists' rights. Salt had been converted into a symbol of non-violent protest in British India, when Gandhi adopted the brilliant strategy of asking millions of Indians to make their own salt, thereby avoiding the tax levied by the British Raj.

These were negative examples. But Stearne identified strikingly positive examples of the same phenomenon in the twentieth century, instances in which a product had become a galvanizing symbol for social progress. He likened the spread of *UNIAC* to the proliferation of the automobile in the USA after World War I. Until then, the automobile had been generally considered as a prestigious luxury for the rich, far beyond the means of the common man. Henry Ford understood the psychology of the ordinary worker. He perceived that the desire for a car was driven even more by the sense of social elevation that it offered than by the faster transportation it provided. The arrival of the Model T had made it possible for every hard working American to dream of owning a car and enabled some twenty-seven million to fulfill that aspiration before by the end of the 1920s. The Roaring 20s was fueled by the rising human aspirations released by the automobile. Stearne believed that a similar phenomenon had taken place in the 1980s with the proliferation of affordable personal computers. While the automobile had become a symbol of social status and prestige, the PC became a symbol of the value of the individual. It empowered and liberated the individual from dependence on a large organization and domination by impersonal technology. It made man master of the machine. Here too, Stearne argued, the practical benefits were magnified and multiplied by the liberating spirit of enterprise which the PC released. It was that spirit, more than the technology or product itself, which was responsible for the explosive growth of Silicon Valley start-ups and the youthful, informal corporate culture which became its hallmark. "The PC may be a machine," the professor said, "but it is a human-size machine that has helped humanize society and energize the individual. Like the I-Pod after it, it has converted a machine into a friend."

It was in this perspective that Stearne began to view the impact of *UNIAC*. This product was not merely a sophisticated decision-making program. It was a symbol of the power of human accomplishment. Just as the PC had been viewed as a far more humane product than the mainframe computer, because it was small, affordable and personal, *UNIAC* became a liberation from the dry, impersonal, mechanical mathematics and statistics of materialism. The computer calculated and manipulated physical facts, but it could not take into account human attitudes, feelings, sentiments, aspirations, and expectations. *UNIAC* could and did. Its central focus was on human perceptions and human attitudes, not mere physical data. Its central faith was in the power of human consciousness, not in the power of the machine. This difference was subtle and often overlooked by those who mistook *UNIAC* for a more powerful or sophisticated program for statistical manipulation and data mining. Those that thought a *UNIAC* grid was a specific adaption of grid

computing missed the essential fact. Grids consisted of clouds of microprocessors. *UNIAC* grids consisted of networks of conscious human beings.

Stearne also perceived that the underlying philosophy of *The Book* was making its influence subtly felt even though no one ever spoke about the existence of *The Book* or the ideas on which *UNIAC* was based. The notion that true knowledge generates only positive consequences was too far from normal human experience for people to readily accept as an idea. But the same people were eager and willing to accept it in practice and that is what happened. People began to notice that business activities conducted through *UNIAC* benefitted everyone involved. Every transaction seemed to be a win-win. Others noticed that medical treatments administered by physicians using *UNIAC* avoided the side effects and excesses otherwise commonly experienced. A large advocacy emerged among environmentalists when it was realized that the strategies *UNIAC* and AIS⁹ prescribed to accelerate economic growth were at the same time strategies that reduced negative impact on the environment and helped to restore Nature's balance. There was something deeply reassuring and liberating about the notion of a machine that was incapable of harm. Some nicknamed *UNIAC* a perpetual money-making machine. Others just referred to it as a wise and benevolent companion.

As *UNIAC* spread, curiosity about and fascination with the theory behind its design, structure and algorithms became a popular subject for discussion, debate and all kinds of wild speculation, ranging from theories of alien invasion to divine intervention. In spite of all the precautions the company took, it was impossible to restrain the inventive, imaginative and in some cases genuinely perceptive insights of *UNIAC* users. People sensed there was a mystery, a secret behind *UNIAC*. And if there is one thing that spurs the human imagination and ignites its curiosity, it is the sense of some enigma to be unraveled, some hidden truth to be uncovered. The thrill of discovery is one of the greatest joys known to human beings, exceeded only by the thrill of self-discovery which is its higher counterpart.

While some religious groups accused *UNIAC* of aggravating the preoccupation with material accumulation and consumption, a smaller group constituted itself which attributed spiritual and even prophetic powers to the software. MAI did everything it could to counter the notion that *UNIAC* had predictive or prophetic powers, but most of these efforts fell on deaf ears. As early twentieth century existentialists like Sartre had understood, most people are uncomfortable with real freedom and want to hand over responsibility for their lives to someone or something, be it a state, a religion, or an idea. As a consequence a *UNIAC* grid created by users applying the software as a personal guidance system became immensely popular, especially among women, and gave rise to a whole new mystical discipline, *UNIAC* astrology.

Many other variations and offshoots sprouted, including some very meaningful and serious efforts to apply the knowledge of *UNIAC* to foster human happiness, personal growth and genuine spiritual development. But most of these efforts were flawed or incomplete, even if well-intended. The real power of *UNIAC* for psychological progress had not yet been discovered.

135. The Bead Game

Experimentation with *UNIAC* ultimately led to the invention and development of what became variously known as the *UNIAC* Bead Game, Life Bead Game, Life Game or just Bead Game. The various names were take-offs on the Glass Bead Game depicted by Herman Hesse in his famous novel of that name. But the game itself was something very different from what Hesse had in mind.

It all began with Levin's effort to identify the mystery group behind the break-ins at MAI and Dan's apartment, the attack on Gavoché's facilities and the data pollution the previous year. He thought, but could not be sure, that Thompson had been behind the last break-in attempt at Dan's apartment, which Levin himself had prevented, but he doubted Thompson was responsible for any of the others. While there had been no further occurrence of trouble during the past twelve months, Levin knew better than to become complacent. With no leads to go on, he decided to submit the problem to AIS⁹ for analysis.

Knowing that AIS⁹ would be most effective only when it had knowledge of the complete context surrounding any event, Levin prepared a detailed chronicle of events during the two years he had been with MAI, and for a year prior to that based on information obtained from the other partners. Much of this narrative was based on his record of the events. Then he requested Jean Le Brec to run the data through AIS⁹ looking for possible patterns. To Levin's surprise, the first result that came back was a connection between Thompson and the narrow escape from the bus accident by Ray, Dan and Vinay in front of the State Department, just after their meeting with Thompson. It had never occurred to any of them that the accident could have been planned. Of course, it made more sense to them now that they knew of Thompson's connection with the Round Table, which had long been in pursuit of *The Book*. Thompson could have hoped to stop their car, perhaps even hospitalize them, and steal *The Book* in the process. This possibility immediately raised doubts in Levin's mind about the other two accidents that had occurred at the same spot during their subsequent visits, the one which they witnessed and the one in which Tony Preston had been injured. So Levin instructed Le Brec to feed in additional information and see what AIS⁹ might tell them about these events.

A few days later Levin stopped in at Jean's office to see how his research was progressing. He saw Le Brec working busily on his computer right through the lunch hour, so without disturbing his concentration, Levin walked up behind him and looked over his shoulder. He found that Jean was playing a computer game of some kind. When Le Brec realized his boss was in the room, he turned around embarrassed and made excuses for himself. He said in his spare time at night he had been playing with the notion of creating a computer game based on *UNIAC*. He did not have the skills to work out the video elements on his own, but he had made some progress on the core theme. Levin was curious and asked him to demonstrate what he had created. Levin not only liked what he saw, but thought other people would like it too.

Le Brec's basic idea reminded Levin of the Glass Bead Game. In Hesse's novel, the game was a complex mental exercise conducted by members of Castalia, a monastic secular order of brilliant intellectuals. Many different types of games were formulated, but all were based on a common set of rules. The objective of the game was to synthesize various ideas drawn from different fields—especially music, mathematics, and the arts—into new creative combinations that revealed aspects of the underlying unity of existence. So Levin borrowed the name from Hesse and it stuck. But the similarity between Hesse's game and the *UNIAC* version ended there. This was something entirely different. The Castalians lived in a world isolated, insulated and protected from the main currents of German society and life. The game they played focused on pure concepts unconnected with life's realities. They were an expression of the mind's capacity to abstract and divorce itself from life and social responsibility, a movement that gained momentum in the West from the time of Descartes and became a source of great concern for Hesse. His novel depicted how life in his native Germany became degenerate and corrupt when intellectuals turned a blind eye to the danger and vulgarity associated with the rise of Nazism.

In contrast, the *UNIAC* Game focused on the application of the highest knowledge in order to accomplish in life and elevate life to a higher plane. It drew upon the vast store of principles extracted from *The Book* and incorporated in the software. In early versions of the game, users had relatively little access to the life principles upon which the game was based. Unlike Hesse's game in which every player knew the rules before hand, the objective of the *UNIAC* Game was to discover the rules of life based on analysis of life events. Jean had developed the first prototype game after watching a DVD of the *Bourne Identity* one night with his girlfriend. Just for fun, he decided to feed the improbable chain of events depicted in the movie into *UNIAC*. He figured that *UNIAC* would immediately reject the facts as fabricated or polluted data, which would be good material for a joke or two about Hollywood's sense of reality. To his surprise, *UNIAC*

began to analyze the events as if they had actually taken place and were perfectly realistic. In fact, it revealed a thread of meaning in the story which Jean had completely overlooked.

UNIAC explained that Jason's refusal to kill the African leader, Wombosi, in the opening scene and the amnesia he suffered after being shot and falling into the sea were both expressions of a subconscious aspiration in the hero. His real-life personality of David Webb was trying to emerge from under multiple layers of psychological conditioning by the CIA which had created the illusory personality of Jason Bourne. The amnesia was an act of Webb's subconscious to suppress the memory of his surface conditioned personality, so that he would be free to recall the threads of his real self buried beneath the conditioning. When La Brec first read the analysis, he laughed and wondered whether *UNIAC* had developed a taste for American melodrama. When he showed the analysis to Levin, he was amazed to find that Levin took the report very seriously. In fact, he asked for a copy of the film and watched it along with Jean that same afternoon, comparing events in the story with *UNIAC*'s commentary. To Levin's surprise, *UNIAC* identified at least fifteen points in the movie that were consistent with basic principles of life derived from *The Book*. When other staff heard about what they were working on, a variety of jokes spread around the company. Jean, according to one, had invented the first film critic that could make sense of Hollywood movies. Another claimed that he had developed a program to psychoanalyze superheroes.

From here on the Game evolved rapidly. MAI employees started playing it during their breaks and after hours, devising variations of ever-increasing complexity. When Levin showed the prototype to senior management, they unanimously approved and decided to constitute a special product development team headed by Le Brec to work on it. MAI staff competed for positions on Jean's team. To many it seemed like a more entertaining form of work than programming algorithms for customized *UNIAC* grids. But jokes apart, Dan and Levin immediately perceived that what they were creating was far more than a mere Game. It was a way for users to learn about the subtle truths of life which were so foreign to the Western mechanistic world view. Having spent months studying *The Book* and *Archives* to grasp concepts such as correspondences, life response, inversions, reversals, contradictions, subtle reflections and the like, they understood that the Game could be a breakthrough product for communicating truths about accomplishment to youth, entrepreneurs and executives, for education and research in the social sciences, history, literature and the humanities, and for psychological insight and self-discovery.

Development of the beta version was completed in half the time allotted, partly because the basic engine was already fully developed and partly because so many employees volunteered to spend their after work hours on the project. The beta version was launched in late July and was enthusiastically received by users, in spite of the fact that the video and graphics were still far below commercial standards. Before MAI had had time to rectify the deficiency, users started doing it for them. Thus, overall product development time was reduced by at least three months and the first commercial version was launched on November 24, just in time for the last-minute Christmas shopping rush.

By that time a variety of games had already been developed by beta users, game clubs had been formed and game user groups were working on new variations of the game. Games were classified according to the subject matter they focused on. Thus, there were history games, literature games, personal games relating to one's own life experiences, contemporary games about recent events, nature games focusing on natural events and so forth. In addition, games were also cross-classified into seven major types.

Type 1 games focused on Decision-making. Some games involved analyzing historically important decisions, such as Hitler's disastrous decision to invade Russia, which became the crucial turning point for the war in Europe, or Japan's decision to attack Pearl Harbor, which finally gave FDR the pretext he needed to bring America into the war. Military and football strategy games became particularly popular among the young and within the armed services. Other games focused on crucial business decisions including technology, pricing and marketing strategies, such as Steve Jobs' licensing strategy for the Macintosh operating system or Sabeer Bhatia's inspiration to create a free web-based hotmail system. Relationship decision-making soon became a craze among women ranging from twelve year old girls to fifty year old divorcees. Users began using games to make important personal decisions regarding marriage, children, education, profession, where to live and myriad other issues. *UNIAC* games never told users what they should do. They only forced them to analyze their decisions comprehensively and indicated likely outcomes based on that analysis. The output of Type 1 games was similar to the output from AIS¹ reports, but the process of playing was far more engaging and informative. People spent hours mulling over options and clarifying the impact of their attitudes on likely outcomes.

Type 2 games focused on the Nine Levels of human consciousness. Some games involved analyzing individual acts to determine which of the nine centers they originated from. Women players began to joke that professions of affection by their lovers often issued from Level 6, 8 or 9 rather than Level 5.

When a player told another that an idea originated in Level 6, it was a way of saying that the idea was a reflection of the drive for social conformity rather than rational thought. Another variety of Nine Level Games focused on analyzing individuals according to their dominant personality type or analyzing the relative development of each of the nine levels in an individual. This type of game became known as *Profiling* or *Leveling*. Some gamers started publishing their own Nine Level Profiles on their personal web pages. Famous historical figures, characters in literature and film, relatives, friends, contemporary politicians, musicians and actors were popular subjects for analysis. A whole website was created comparing the profiles of American presidents and speculating on why the American people had voted for them. The Ronald Reagan game generated a huge controversy between those who rated him as an idealistic Level 2 and those who insisted he was at best an affable, unintelligent Level 8 whose physical rigidity and physical intensity were mistaken for passionate commitment to high principles. The most sophisticated versions of these games further subdivided the nine levels into 18, each level consisting of a surface dimension of consciousness and a deeper dimension of substance. But only the most adept players competed in games of this variety. A whole new vocabulary came into popular use based on type 2 games:

That's a one-brilliant idea
 Lost in two-idealistically dreaming or poetically romanticizing
 He threed it-mentally organized
 A born four-leader of people
 All five-pure love
 His hearts in eight-sexually rather than romantically motivated
 It's a niner-dumb idea
 He is a niner-dull clod

Profiling games led to the development of Profile Matching, Aligning or Matching Games, in which the profiles of two people were compared on nine or eighteen levels to see how romantically compatible they would be. Matching required a whole new level of gamer knowledge and expertise because the rules for matching were extremely complex. Many people failed in these games because they assumed that people with similar profiles would be most compatible. Unfortunately, some early players who acted on this assumption found that the reality was very different. As they discovered, a perfect profile matching based on similarity generates one of the lowest romantic compatibility scores. Thus began the quest to discover the true rules of romantic bliss based on personality profile matching. A whole school of gamers developed who based their strategy on the principle of inversion. They paired strong L-1s with weak L-1s or introverted L-4s with extroverted L-4s or high energy L-6s with low energy L-6s, etc. This strategy generated mixed results, at best. Another school arose based on what they called diagonal inversion. Strong L-1s with strong L-9s to form what they called an I-19, I-28, I-37, I-46 and I-55. This strategy was no more successful than the last. Finally that led to formation of the school based on double diagonal inversion or DDI. Thus, a strong L-1 would be paired with a weak L-9 as denoted by a $L1^+L9^-$ pair, which was the equivalent of pairing Albert Einstein with a couch potato!

Some gamers admitted that the explosive growth of profile games was not motivated only by personal aspiration for romantic bliss. These gamers understood the virtually infinite economic value of the perfect compatibility formula. It was the Hope diamond they were after, not the Holy Grail. And it proved just as illusive. This led in turn to the development of eighteen level profiles that differentiated surface from depth development at each of the nine levels, which evolved even more complex matching formulas. Many claimed to have achieved success rates of 90 percent or higher and launched commercial ventures or offered to sell their formulas to entrepreneurs, but there was insufficient evidence to validate any of these claims. Others insisted that the whole concept of Type 2 matching was flawed because it was based on only one of the six dimensions of personality profiled by *UNIAC*. This conclusion fueled interest in Type 3 games.

Type 3 games applied the entire Six Dimension personality model to analyze human character and behavior. These games were played almost exclusively by advanced gamers, because they required a subtle perception and sophisticated understanding of human personality. Some of these games were adopted by companies, government agencies and the armed forces for recruitment and personality profiling. They proved particularly useful for identifying people with natural entrepreneurial and leadership talent. It was rumored that some political parties began using them to select the most suitable candidates. Hamlet, Othello, Lear, Napoleon, Hitler, Gandhi and JFK became popular Type 3 games among academics. Type 3 matching

based on five dimensions plus nine or eighteen levels became an emerging discipline akin to String Theory and zero point energy fields in theoretical physics.

Type 4 games were among the most popular, probably because they were the easiest for novices to learn and quite enjoyable to play. They focused on correspondences between the inner and the outer, between human thoughts and attitudes and the external events in their lives. Like Jean Le Brec's *Bourne Identity*, these games could be applied to analyze events in any movie or novel. Developing a game for new movies soon became a popular pastime among teenagers. Asian youth, particularly those from the Indian subcontinent, proved particularly adept at these type of games, because the principles of inner-outer correspondence were so deeply embedded in their culture. The simplest of these games focused on omens and portents in life and literature, such as the blood red moon in *Hamlet*, the crowing of the cock in Hardy's *Tess of the d'Urbervilles* on the day Tess was to be married, or the breaking of the last Russian tzar's pendant on the day of his ascension to power. Teenagers began analyzing the significance of correspondences in the lives of their favorite singers and actors.

Type 4 gamers cataloged thousands of types of correspondences, positive and negative, and developed glossaries to help new users decipher the symbolism of life. More serious versions of correspondence games were used to analyze catastrophic events such as the Holocaust, Great Crash, Hurricane Katrina and September 11 to identify prior warnings and indications that could have been used to prevent tragedy. The Type 4 Empires Game analyzed the causes for the rise and fall of empires from the ancient Babylonian, Greek and Roman Empires to the modern colonial European powers, searching for correspondences that indicated the various stages of their ascent and decline. One version of this game focused on the USA as a global military-political-economic empire and sought to graph the curve of its development to determine whether it had reached or was past its zenith. Players pointed out that most of the past empires appeared strongest precisely at the time they were most vulnerable, some maintaining that this vulnerability arose directly from their illusory egoistic sense of permanent greatness. Another group applied inversion theory to empires. Asserting the principle that the inner determines the outer, they sought to explain the rise of external opposition as a precise reflection of inner decay. Thus increasing Roman barbarism and decadence was reflected in the rising power of Attila the Hun. One game applied this approach to contemporary America and concluded that the rise of fundamentalist-terrorist threats from outside mirrors the growing rigidity and fundamentalism within the country and can only be countered by an inner change.

Mysticism and superstition were often confused with keen insight among Type 4 gamers, but *UNIAC* evaluated responses strictly in terms of life realities, so that those who blindly adhered to fixed systems of interpretation never progressed very far in these games. So too, those who tried to base type 4 games on probability and statistics were almost always eliminated in the early rounds because they depended on numerical frequency to form their conclusions when for a perceptive correspondence gamer, even a single event was often sufficient for them to penetrate a mystery.

Initially *UNIAC* games were perceived as a new form of sophisticated entertainment, but they also proved to be highly educative. Therefore it was only a question of time before university professors began using them as a learning tool in business, history, psychology, sociology, literature, environmental science, political science and other disciplines. A group of environmentalists launched a global type 4 game on climate change which identified more than seven hundred significant indications of global warming dating back to early in the twentieth century. Some historians applied correspondence games to track the antecedents to events which seemed to take everyone by surprise when they had occurred, such as the Russian Revolution, Great Depression, spread of the personal computer, fall of the Berlin Wall, end of the Cold War, and explosive growth of the Internet. One game examined the relationship between the Islamic uprising led by Ayatollah Khomeini that toppled the Shah of Iran in 1978 and the major earthquake that ravaged Iran at that time.

So-called Day Games were an unusual variation of the typical correspondence game. In these games an individual would minutely observe and carefully record events during the early part of the day, from the moment he woke up—the first waking thoughts and feelings, incidental sounds, the first person he saw, the first item of news he heard on the TV or read on the Internet, etc.—and look for correspondences between these insignificant observations and later developments during the day. In several well-documented incidents, a day-gamer's warning helped another family member avoid an accident or diagnose a serious, unsuspected health problem before it became acute.

Project Games became a popular offshoot of day games. In this type of game, the events taking place at the inception of a project—the thoughts and feelings of key people, a chance meeting, a stray piece of information, the receipt of good or bad news, and other apparently unconnected circumstances and events—

were applied to predict final outcomes, identify unforeseen opportunities and anticipate problems. Application of project games became common in major corporations working on new product ideas and among entrepreneurs contemplating new investments.

Type 5 or *life response games* also became very popular among more advanced users. These games focused on identifying, explaining and anticipating life responses. This type became the favorite of moviegoers and literature students. Some games focused exclusively on a single literary work. One *Hamlet* game tried to decipher the reasons for Hamlet's delay in avenging his father's murder, which had defied literary critics for three centuries. Another game tried to discover the life principle behind the attack of the pirate ship, which enabled Hamlet to escape execution in England and return to Denmark to kill his uncle. An *Othello* game examined the drop of Desdemona's handkerchief, which played such a critical role in the unfolding tragedy. *Pride & Prejudice* games were particularly popular because of the resurgent interest in Jane Austen's works.

A popular game was created based on *My Fair Lady* and *Pygmalion*, Shaw's play on which it was based. The game focuses on two striking life events. The first is the meeting right at the beginning of the story between the famous linguist Henry Higgins, the wealthy Colonel Pickering, the Cockney flower girl, Eliza Doolittle, and Freddy Eynsford-Hill, the young man who falls in love with her and ends up marrying her in the play. Gamers have shown that this apparently chance event was a direct expression and result of the aspirations of the four characters and it was the confluence and complementarity of those aspirations that brought them physically together. Higgins had been desperately seeking an opportunity to demonstrate the remarkable power of his linguistic methods to the world. Pickering had long been an admirer of Higgins' work, who understood the social ramifications if an impoverished flower girl could be made to conduct herself like an educated princess, and was willing to pay for the experiment. Eliza had an intense aspiration to rise out the poverty in which she was born by dint of hard work and self-improvement. Freddy was in search of romance. The meeting of the four in front of the theater became an occasion for all to fulfill their deepest aspirations. Some gamers pointed out that the downpour of heavy rain at that moment in the story was a symbol of great good fortune, presaging the ultimate success of their enterprise. The second striking event illustrated the principle of inversion, when positive results are generated by apparently negative events. It occurred during Eliza's final test at the Embassy Ball, when the ambitious Hungarian phonetician, Zoltan Karpathy, attempted to expose Higgins as a fraud by declaring Eliza was actually a Hungarian princess of royal blood.

Another popular life response game was created based on *Gone with the Wind*. Often mistaken for a mere romantic adventure, the GWTW game, as it was called, revealed profound social undercurrents and deep insights into life that helped to explain why the book sold one hundred seventy-six thousand copies during the first three days and 1.7 million copies with the first year of its publication in 1936 and twenty-eight million copies since then; in addition to serving as the basis for one of the top four most successful movies of all time. Gamers have derived deep insights about life and character from the first meeting between the main characters, Scarlett, Ashley, Rhett and Melanie. Scarlett's life-long dream of marrying the aristocratic Ashley and her love-hate relationship with Rhett illustrate the appeal of contrasting and contradictory character traits in human relations. As the daughter of a first generation penniless Irish immigrant father and a French aristocratic mother, Scarlett exhibited the raw energy and strength of the early pioneers that founded America, combined with the aspirations for high status inherited from her mother. While her mind pursued Ashley, who could never satisfy her untamed nature; her wild spirit, courage and strength made her deeply attractive to the irascible gambler, Rhett. When she learned that Ashley planned to announce his marriage to his aristocratic cousin Melanie, Scarlett cornered Ashley in his library to declare her love. Rhett, who was sleeping on the couch overheard her declaration. The rest of the story traces the consequences of their characters, aspirations and actions in the context of the demise of the pre-Civil War Southern culture and way of life. Gamers have analyzed in depth the death of both Scarlett's father and her daughter Bonny in horse riding accidents, the death of her first husband Charles soon after her marriage, and the death of her mother before Scarlett could return from Atlanta to Tara, The arrival of the Yankee soldier at Tara looking for jewelry to steal, whom Scarlett kills, recovering precious gold that enabled them to survive till the end of the war, has oft been cited by games as a classic example of inversion.

Although many played these games simply for amusement, serious lovers of literature found that the games revealed profound insights into the stories. These games led to the gradual emergence of new principles of literary criticism, in which the quality of a literary work could be assessed in terms of the life principles it expressed. Authors were graded in a scale ranging from story writers focused on mere action to character analysts who insightfully portrayed human character and nature to those writers who could bring out the character of life itself. The greatest writers such as Shakespeare qualified for the title, *Seer of Life*.

Type 6 games were an extension of type 5, but much more complex and comprehensive. They involved analyzing any chain of events in terms of hundreds of life principles in order to explain every small detail that occurred. The highest level of the type 6 game became known as a 360° game, because it involved the analysis of an incident or chain of events from the perspective of every character involved, rather than merely from the perspective of one or a few main characters. A group of MBA students at Harvard spent four months working on a type 6 game for Enron Corporation and concluded that a minor change in strategy even just prior to its collapse would have been sufficient to escape bankruptcy and the huge losses to shareholders. A group of seventeen German historians working for seven months developed a type 6 game strategy that would have prevented the Second World War. Their analysis showed that any one of the major allied powers - England, France, Russia or USA - would have been sufficient to stop Hitler, if the right policy options had been chosen. An Israeli PhD candidate working at Stanford conducted a type 6 game on Israel and Palestine as his PhD thesis and identified forty new strategies that could be applied to resolve the political dispute.

One interesting example of the Type 6 game involved the application of the inversion principle to analyze the behavior of the German military during the closing days of the Second World War. Gamers conducted an in-depth exploration of General Dietrich von Choltitz, who commanded German forces in occupied Paris on the eve of the Allied invasion and was ordered by Hitler to destroy the city and all its cultural artifacts rather than let it fall undamaged into the hands of the Allies. Although Hitler held the immediate families of all his senior staff as hostages in Berlin in order to ensure obedience to his commands, the German general refused to obey Hitler's order. Instead, he wrote to General Eisenhower advising him to advance the date of his invasion in order to save Paris from devastation. Gamers have been fascinated by the inversions reflected in these events. Hitler, who ordered the burning of Paris, also sent a special instruction to send him a twenty-eight square foot tapestry housed in the Louvre. While German military leaders had been willing to kill millions of defenseless people, they could not bring themselves to destroy inanimate works of art. Type 6 games were only for the most advanced players. Only those who themselves acquired the life vision of a great writer were able to complete these games successfully. Those that did earned the title *Seer of Life*.

Then there were a few Type 7 games, known as Infinity Games. Less than hundred people in the world even understood what these games were about and fewer still were able to make headway in playing them. These are the grandmasters of the bead game. The essential aim of type 7 games was to discover the infinite potential concealed in finite circumstances or expressing in the infinitesimal. Stearne was the first to use an infinity game in a university setting when he introduced a game on the practical concept of infinity at Cal for a graduate seminar of philosophy students. He explained that winning this game was one of the few remaining goals of his life. The professor never believed in tackling anything easy.

Infinity games were most popular among theoretical physicists trying to evolve new concepts of matter and the physical world, especially with regard to the spontaneous manifestation of energy from the vacuum or zero point field. In a few instances Type 7 games had also been applied to identify strategies for exponential economic development. One infinity game sponsored by the United Nations mapped out a strategy to eliminate war, famine and poverty in Africa in less than a decade without any increase in foreign aid. The most extensive and publicized game of this type was conducted to model the growth of Visa International from its inception by Bank of America in 1958 through its transformation into an international consortium of banks under its present name in 1977 and its subsequent expansion into a global system which comprised of twenty-one thousand member financial institutions, twenty-seven million merchants and two billion card holders in one hundred seventy countries conducting transactions in excess of \$4.3 trillion annually. The Visa Game analyzed the factors responsible for this incredible achievement. The Grandmaster of the Visa Game demonstrated that the most crucial factors were the willingness of Bank of America to give up its dominant and controlling hold over the system it had created, the evolution of a ownership structure that permitted competing banks to cooperate with each other for mutual benefit, the decentralization of authority and decision-making to local banks responsible for credit decisions regarding each customer, the development of a fool-proof and instantaneous system for global credit verification. Visa Gamers developed models showing that a minor alteration in any one of these factors would have been sufficient to abridge the turnover of the system by as much as 90 percent. But their primary goal was to identify other life principles that be applied to further expand the system another ten fold or more.

Individuals could play many of the games on their own, though groups of two, four and up to ten players had become common. Infinity games usually involved only one or two players. But in one case the need for extremely high level playing skills and life knowledge had been circumvented to some extent by increasing the number of players to a very large number. This instance was an infinity game for global development. The objective of the game was to generate global prosperity and full employment. More than

one hundred fifty thousand advanced players contributed to the game during the previous six months. Although the game was far from complete, even the preliminary results uncovered enormous untapped economic potentials which some companies and countries began to move to exploit.

136. Descent

The Bead Game not only became a phenomenal success in its own right. It also revealed the pathway for further development of MAI's software in an unexpected direction. In retrospect the new direction should have been apparent to the partners long before they actually recognized it, but preoccupation with the challenges posed by the explosive growth of *UNIAC* and the Bead Games prevented them from seeing a potential far beyond anything that they had contemplated thus far.

From the time *Accomplish* was first introduced, some frequent users of the software had occasionally reported back to the company that they felt it helped enhance their mental capacities in one way or another. Some said they had acquired greater mental clarity, improved memory, or a keener insight into issues. Others reported that their outlook had been broadened to view issues from a wider perspective. Still others said *Accomplish* had helped them develop imagination or even intuition. A few sent MAI examples of impressive artistic, musical and literary work they had done after using *Accomplish*, saying they had only now discovered they possessed artistic endowment. Two users described original inventions they somehow related to their work with *Accomplish*, a mathematician discovered a practical application for one of Ramanujan's theorems, and a graduate student physicist came up with a new interpretation of String Theory that was thought good enough to be published by a reputed scientific journal. The partners were delighted to receive anecdotal evidence of this type that *Accomplish* had beneficial effects on mental health and performance, when so many studies showed that excessive work on computers normally had the opposite effect. Vinay said that if they could document that this experience was sufficiently common among *UNIAC* users, then it would have value for promoting the product. So he initiated a study of users to test the hypothesis. Initially, no one gave it much thought.

The breakthrough presented itself in an unusual manner. The user feedback study found that more than 20 percent of frequent and advanced *UNIAC* users reported a noticeable heightening of their mental capacities and creativity after using the software. Another 27 percent reported some effects of this nature, though they had not thought about it before the user survey was conducted. Less than 10 percent reported fatigue, headaches and other negative symptoms. However, the initial feedback was confused by ambiguous reports. Some said they experienced both a heightening of mental capacities and a periodic suspension of mental capacities, either during alternating periods of use or occasionally at the same time. Vinay complained to the market research firm undertaking the project that its phone interviewers were doing a poor job of eliciting clear information from users.

Where standard market research techniques failed to unravel the mystery, the growing volume of word-of-mouth testimony on user blogs succeeded. A number of frequent and advanced users of the Game reported to their friends, associates and fellow bloggers that they were experiencing intermittent periods in which they were no longer able to play the game effectively. Initially many mistook these periods for exhaustion or brain-dead syndrome, a common symptom of those who spend too much time working on computers. Some people fell into sleep right in the middle of a *UNIAC* game. Others were overwhelmed with a sense of heaviness that immobilized them physically and mentally, but was not in itself unpleasant. Some reported that they were relieved of chronic or intermittent depression by playing the bead game. Still others were heard commenting to fellow gamers that they felt too good to play any longer at the present time. Eventually reports of these experiences surfaced on Internet blogs and people became more conscious of their own personal experiences while gaming.

Then one day a grandmaster Type 7 gamer published an article on his site about what he called a Descent. At a crucial point in an infinity game where he was striving to see beyond the boundaries of finite limitation, he began to perceive a deep sense of peace filling his body and limbs. At first he tried to ignore it and continue playing, but it soon reached such a great intensity that he was physically immobilized. A fellow gamer working next to him became alarmed, but the grandmaster assured him that he was feeling fine. In fact, he said, he was feeling quite wonderful. The experience subsided after a few hours, but returned again the next day in greater intensity than before. This time he distinctly felt a sensation of peace descending into his body from above his head until he had a feeling of inner fullness to the point of overflowing, overflowing with peaceful, refreshing energy. After the experience subsided, he noted that his gaming performance improved dramatically. When he resumed the infinity game the following day, the experience returned. This time it did not stop with his body. The peaceful feeling began to penetrate into his nerves and fill his whole vital being with quiet power and well-being. He felt a rich, warm glowing sensation develop in his heart, a sense of joy, openness and expansiveness. These experiences continued each time he played the game. At the same time he found that his gaming capacities were markedly enhanced. Finally one day he felt what he described as a solid descent of silence into his head and filling his mind. He was fully conscious and awake, yet incapable of formulating a single thought. Moreover, he felt too wonderful to even want to think. After

the grandmaster published his experiences on his blog, other gamers came forward to report similar experiences of their own. It soon became clear that he was not the only one to feel the Descent or the Silence.

When Dan first heard this report, he immediately recognized it as the same experience that he often felt while reading *The Book*. He knew at once that it came from an opening to the consciousness and knowledge borrowed from *The Book* and incorporated in *UNIAC*. He was pleasantly surprised to learn that something of *The Book*'s rich atmosphere was actually transmitted through *UNIAC* to frequent users. But apart from that he gave little thought to the report.

But there were others who also took note of this phenomenon. Mediation groups, religious sects and practitioners of various schools of mysticism heard rumors of *UNIAC*'s reportedly mystical powers. A number began experimenting with *UNIAC* as a means to expand and heighten their consciousness. Some of them delved into the knowledge-base, structure and principles of *UNIAC* and recognized truths incorporated in *UNIAC* that were aligned with the teachings they had already been following. In some cases they found that *UNIAC*'s knowledge base provided helpful clarifications, filled up missing links, and answered questions that they had been unable to address. Without the knowledge or initiative of MAI, *UNIAC* began attracting passionately loyal users in fields far removed from earning money or social accomplishment.

The partners were surprised not only by the character of this trend, but also by its magnitude and intensity. The number of users expressing interest or seeking instruction on the application of *UNIAC* for psychological well-being, personal growth or spiritual realization rapidly surged into the millions. MAI was caught completely unprepared to respond. The partners had spent so many years trying to translate spiritual principles into operational principles for material accomplishment that they were not immediately able to respond to the aspiration of users for psychological accomplishment. There was no inherent difficulty in fashioning a product to meet this need. It was mainly a matter of altering objectives and modifying presentation.

Dan had previously characterized the relationship between material accomplishment, psychological growth and spiritual realization as a bottomless pit of confusion which was best avoided. He likened it to the fog-bound moors of Northern England where Sherlock Holmes pursued the phantom hound of the Baskervilles. Visibility was limited. The terrain was spotted with sharp protrusions and deadly quicksand pits. Wild animals howled in the night. It was nearly impossible to tell what was real from what was imaginary. Surely this was no place for entrepreneurial technocrats to tread. It was too easy to get lost or sink in the morass.

But among themselves the partners had spent many days exploring the relationship between the material, psychological and spiritual for the sake of their own clarity and comprehension of the knowledge contained in *The Book*. Even if their objectives were strictly confined to the material and social realm, the basic thesis of *The Book* was that the higher planes were a source of unlimited power for creativity and accomplishment in material life.

Three assertions derived from *The Book* became the starting point for their study: first, that there was only one universal process of creation; second, that there was only one universal set of principles that applied to all levels, planes and fields; and third, that among these principles were laws governing the complex interactions between the physical, vital and mental planes. The third of these assertions proved to be the easiest for them to understand so they started with that one. After considerable study of *The Book*, *Archives* and their own life experience, they arrived at a few conclusions which upon reflection appeared to them rather obvious and self-evident. Each plane had its own characteristic form of energy which was powerful at its own native level. Each higher plane acted on the planes below it and in doing so released energy and power in the lower plane many times greater than the native power of that lower plane. Thus, the application of vital power in the physical plane generated far greater results than could be attained by effort in the physical plane itself and the application of mental power in the material or social plane was far more productive than mere physical effort or vital enthusiasm.

This seemed rather obvious when they thought about it. Everyone knows that a vitally-motivated entrepreneur or employee can accomplish ten or hundred times more than a strong physical worker and that a mentally organized executive or technocrat applying ideas and knowledge can generate hundred or thousand times greater results than the merely energetic, dynamic entrepreneur. The world's amazing progress during the past two centuries was a fitting testament to the power of vital energy freed from social constraints and the power of mental knowledge and technology applied to improve material production. Combining hard work with organization and enthusiasm achieves even more. This also explained why the average savvy investment bankers earned ten times more than the average worker and the best of them earned hundred times more. The scientist applies his mind to work with ideas in the mental plane and

produces more knowledge by that effort. The technocrat applies mental knowledge to material processes in the physical plane and enhances material productivity and production by that effort. The investment banker applies his mental knowledge and resourcefulness to the vital plane, the plane of life which is also the plane of money. Money is a symbol for vital-social power. Therefore, of the three he produces far more wealth. Although many people do not think in these terms or consciously apply this understanding as a strategy to elevate their performance, these principles could be documented and verified from everyday experience. So far, the partners felt they were treading on safe ground. But *The Book* did not stop there.

Where *The Book* departed from common knowledge was with regard to the application of higher spiritual knowledge. Most people believed that spiritual truth was more relevant to success in the after-life than for accomplishment on Earth. Since the time of Job, religious and spiritual aspirants sought to justify the hardship, suffering and failure they endured in life as the necessary price for everlasting happiness in the beyond. *The Book* and *Archives* took a different view. They clearly stated that the spiritual was the highest of the four planes and that, rightly applied, the application of spiritual knowledge and force could generate results one thousand or even hundred thousand times greater than physical, vital or mental power. They even made reference to a phenomenon called *simultaneous instantaneousness*, in which the action of spiritual power brought results at the beginning of an initiative which could only be achieved through other means after long and arduous endeavor. To *The Book*, spiritual values such as truthfulness, goodwill, harmony, equality, patience and self-giving were not merely formulas for salvation beyond. They possessed the power for highest material accomplishment and psychological fulfillment here and now. Without ostentation or assertion, this principle had been incorporated into the knowledge base and algorithms of AIS and *UNIAC* and was the essential source of their efficacy. The process of creation was not merely a mental formula. It was a liberating mantra of spiritual power.

So far all these ideas pertained to material, economic and social accomplishment. But now users were raising a further question which the company had preferred to ignore until then. Could *UNIAC* also be used for psychological growth and spiritual progress? And even if it could, should MAI consider venturing into those domains? They would have all preferred to defer this issue for as long as possible. Unfortunately, life did not permit them that luxury. What they refused to do, individual users and organized groups of users were doing themselves. The danger was that if the development was left entirely to the whims and fancies of the market, it might well engulf MAI and *UNIAC* in a quicksand pit of obscurity and controversy from which it could never emerge.

PART VI: EVOLUTION

137. Missing Person

Reason is ego.

The Book

“I think we are venturing into dangerous territory,” Bill said. “Just when everything is going so well, who knows where these fringe elements could lead us. If people become spiritually enlightened by using *UNIAC*, that’s fine. But it is better we say nothing and have nothing to do with it. As a matter of fact, I’d suggest this is a good time to seriously consider an IPO while everything is going so well. I know I am only a minor shareholder now (a year after selling all his shares back to MAI, the partners had given him two percent of the company) but now that the Oppenauer threat has been removed, I am sure any investment banker will tell you this is the ideal time to cash out at least a portion of your equity.”

Ignoring Bill’s comment on an IPO, Vinay added, “I agree with Bill about the need for caution in dealing with *UNIAC*’s links with religion and spirituality. The problem is I am not sure we have a choice. If we keep quiet and do nothing, I bet we will wake up a few months from now and hear that an Enlightenment Game or a Spirit Game is taking the world by storm. Try convincing the Chinese government to buy a product which promises to liberate users from all constraints on their spiritual development. I would not like that job.”

“If people want to use *UNIAC* for personal purposes, what is wrong with that?” Ray said. “Microsoft does not try to tell me what I can and cannot use Windows or Office for. Why should we?”

“They don’t have to,” Stearne quipped. “I don’t believe anyone has ever reported having spiritual experiences from using Windows or Excel.” Everyone laughed.

Dan shook his head. “We will not be able to clarify our position until we precisely define the issue we are trying to address. People are saying a wide range of different things. Let us first be clear about which one we are talking about. As far as descents of peace and silence are concerned, I do not see any issue. If people have found a way to elevate their consciousness using *UNIAC*, I am delighted. They are not asking anything from us or doing anything that need concern us. Our problem lies in other areas, with those who are talking about *UNIAC* as a tool for personal growth, psychological fulfillment, and mystical practices. I agree with Vinay - if we do not take a position or do something about it, it is going to happen on its own. And when it does, we may be unable to control or even influence the direction it takes. The last thing we need is people claiming that they are channeling spirits through *UNIAC* or using the correspondence game to uncover the truth about their past lives.” Again everyone laughed, though they knew Dan was serious about his concern.

“I came across a passage about Catherine the Great while I was working on *UNIAC* last night,” Anya said with a questioning expression on her face. “Do you think I might be a reincarnation?” She held her expression fixed and looked around the room.

“You don’t need *UNIAC* to tell you that. I knew you were an all-powerful czarina incarnate the first time I saw you,” Vinay replied. Everyone exploded into laughter, except Anya.

Turning to Vinay she said with a pout, “If you had added beautiful and benevolent, I might have been satisfied, but it is obvious you lack discrimination. I think I prefer *UNIAC*’s opinion.” Then she joined in another round of laughter.

“The real problem,” Stearne said, resuming a serious demeanor, “is not that people do not know what they are talking about. They do not even know what they want! The problem is the people who say they want to attain inner freedom, personal growth and self-realization. I doubt many of them have any idea what that means. There is a missing person in the whole equation and without that person, these things are meaningless. By freedom I suppose they mean freedom to do what they want. That means freedom from responsibility. That’s another word for license. In my extensive reading of *The Book*, I have never come across a foolproof formula for wishful thinking and freedom from responsibility. Life is a field for the organized expression of energy for growth. Expression of unorganized energy is mere dissipation which leads to death. If you are not growing, you are dying. There is only one real freedom. It is freedom from one’s own smallness, selfness, mental limitations, social and psychological conditioning. Freedom is not something that other people give you. It is something you attain by freeing yourself. By psychological growth, I think most people mean they want to become more successful and more important in their own eyes and in the eyes of the world. That is not psychological growth, though it may be a result of psychological growth. There is one real growth, growth to become a true individual, not a more successful, selfish or self-important ego. In other words, to become rational!”

Anya interrupted. "Pardon me, professor. I have a few questions. You said something about a missing person in the equation. What person? And, although I agree with what you said about freedom, I don't quite follow the connection you are making between growth, individuality and rationality. What is the connection?"

Stearne nodded as a cheerful expression filled his face. He loved people who could ask good questions and genuinely wanted to know the answer. That did not happen often enough, as far as he was concerned, even in the university classroom. Once he had been so frustrated by the lack of true intellectual inquiry on campus that he had mooted a proposal in the UC Academic Senate to close all the universities so that true education could flourish. His proposal evoked an outburst of laughter, probably because no one really thought he was serious. Turning to Anya, he replied, "The first question we need to ask is 'What is individuality?' The missing person I referred to is the *individual*. In order to grow consciously you have first to become an individual or at least you have to strive to become one. The problem is that there are too few real individuals in the world.

"Oh, I know," he continued, "everyone in America wants to be an individual. We all pride ourselves on the fact that we are individuals, but what do we really mean by the term? It is perfectly true that our founding fathers who came to this country as impoverished immigrants exhibited extraordinary energy, courage, self-reliance and pioneering initiative. They could not and did not rely on others to tell them what to do or what to think or how to solve their problems. They could not because everyone was too busy fending for themselves, trying to survive and build a new life in a new world devoid of confining and oppressive social tradition and constraints, but devoid also of all the social structures that provide support and security. These brave people did exhibit the characteristics of individuality at that level. They were physical individuals. Physical individuality is the quality that has enabled America to prosper materially and excel all other nations in this respect. It breeds people who are self-reliant, dynamic and innovative, who do not wait around to imitate what others have done, who do not expect success to come as a gift or a hand out. These are commendable qualities that have made America the most prosperous country in the world. But that is only the first step in psychological growth."

When Stearne paused for a moment to study his audience, he saw total attention and concentrated interest on every face, something that always inspired him. He resumed, "Physical individuality is only one step in human evolution. Like the animal, human beings start off as undifferentiated members of a herd. Nature first develops the collective. Only then does it start out on the individual. As far as we know, the animal species that came before us have reached only the level of forming collective societies. They lack the mental capacity for true individuality, except in a very limited physical sense. But, according to *The Book*, if the goal of evolution is to manifest the infinite, then the individual has a critical role to play. That explains why human beings occupy a unique position in the cosmic hierarchy. As Anya can tell you, it is impossible to manifest infinity. There is always something that comes before the beginning and after the end, regardless of where you start from. That is why in mathematics, infinity is only a theoretical concept. But spiritually speaking, there is a way to do it by a combination of numerical multiplication and individual uniqueness."

Stearne saw he was in danger of losing his audience by his inability to make tangible such abstract principles, so he paused to think of another way to express his thought. "Imagine for a moment that you are God. I don't mean some superhuman being up there looking down at creation. I mean an unmanifest infinite and eternal spiritual existence which contains and exceeds every possibility, which has the power and potential to become whatever it wants to become. Think of the problem you will face. Being infinite, if you try to manifest all of yourself at once, what will you have? Nothing. Or rather everything, which is the same thing. That is why Ramanujan said zero is God. When you manifest everything, nothing can be distinguished from anything else. Take light for example. If you want to manifest blue light or red light, how do you do it? When all the wavelengths combine, you see only white. So you do it by separating out one wavelength from all the others. Or take a colored object. An object is colored because it reflects some wavelengths of light and absorbs others. If it absorbs all wavelengths, it is black. If it reflects them all, it is white. It is the same thing with the Infinite. It can only manifest itself by isolating some of its properties from the rest, holding some back, isolating them.

"Is it clear?" Stearne asked. "If so, I can shift from physics to metaphysics." Encouraged by the expressions he saw, he proceeded. "Ok, so you are the Infinite and you want to manifest infinitely. Here is how you do it. First, you try to manifest an infinite number of different types of forms or beings, but you quickly run into a problem. There is no way to manifest an infinite number, remember? Stymied, you come up with a second approach. You make those infinite number of forms and beings undergo a process of continuous change during a duration that is without end. In other words you create infinite time, which we call Eternity. But again you encounter a problem. As you cannot manifest an infinite number, you cannot manifest infinite duration. It is only a theoretical concept. But don't give up. You have one other option. You

can make each form and being and moment in time slightly different from every other one. You can create or develop them into an infinite variety of unique individual forms, beings and moments, no two alike. Physically, you create a unique fingerprint for every one of your six billion representatives. Psychologically, you impart to each of them a uniquely individual way of thinking, feeling, and acting. You make the behavior of every subatomic particle unpredictable, because it occupies a unique place in space and time. No other particle will ever be at that particular point of time at that particular moment ever again. You make every event that occurs at every moment at every point in the universe unique. Now if that isn't what you could call manifesting infinity, at least it's a very good imitation!"

Stearne paused and looked around, feeling very satisfied with himself. Then realizing he had forgotten precisely the line of thought he was trying to develop, a look of consternation came over his face. "That will teach me to get proud and pompous," he thought to himself.

Dan saw his predicament and came to his rescue. "So professor, are you trying to tell us that the individual plays an essential role in the manifestation of the infinite by becoming something uniquely different from every other individual?"

Stearne studied Dan's questioning expression and clearly perceived that his friend had asked the question only to save him from embarrassment. Then he laughed and nodded. "Exactly, Dan. That is exactly what I am trying to say. Individuality is the key to the manifestation of uniqueness. According to *The Book*, each of us has a potential for manifesting uniqueness. It is a spiritual potential which *The Book* refers to as the *psychic being*. But for almost all of us, the psychic is only a theoretical concept like the mathematician's infinity, because we have not yet developed true individuality. Having a unique fingerprint or facial expression is all well and good, but that hardly qualifies us for uniqueness. For all I know, monkeys and kangaroos might qualify on that score. To become true individuals, we have to manifest uniqueness mentally, emotionally and even spiritually as well. That is the problem I was trying to get at before I got caught in that long diversion. Is it clear?"

Ray nodded and indicated he wanted to say something. "I follow you, professor. It is obvious that few of us qualify as individuals socially. As long as we think what others think because others think it, as long as we feel and act like others do and feel the security in being like everyone else, we cannot claim to be individuals."

"Exactly, Ray," Stearne agreed, "or to put it another way, as long as our identity, values, ideas, thoughts, feelings and behaviors are determined by the social collective, we cannot claim to be social, emotional or mental individuals. An individual is one who finds a center of reference inside himself that defines what he is and what he does. Many Americans have learned how to become physically self-reliant, but when it comes to originality of thought and individualized feeling we are not much different from other nations."

"If that's the case, professor," Vinay asked, "why is it that Americans are so creative scientifically, technologically and organizationally?"

"Good point, Vinay. I stand corrected. You are talking about expressions of the physical mind, L-3. Americans are original at that level. But that is still at the level of what I call physical individuality. To be vitally creative, one must be capable of envisioning and creating new types and forms of social relationship and social values. But here, if anything, most Americans are more conventional than their European ancestors. We speak virtuously about family values while we remain culturally backward and undeveloped. I saw a glimpse of vital individuality emerging here in the 1960s. Perhaps, I was infected by the bug, even if I did not develop the full disease. It may be difficult for anyone who did not live through it to understand how energizing, refreshing, and creative those years really were. Everything traditional was challenged, put up for inspection and evaluated afresh. Ask your father, Vinay. He knows what I mean. I am not referring to the spirit of rebellion and rejection. That was not what made the 1960s great, though I doubt very much it could have happened in any other way. The need to rebel arose from the fact that the rebels were not really free individuals. Otherwise, there would have been no need to reject something in order to define who they really were. It was an immature, a premature step, a first sign of things to come in the distant future. It remains to be seen how distant. That is why I like to think of the 1960s as a brief efflorescence of what is still to come. If not exactly the dawn of the Aquarian Age as many at the time wanted to believe, it was, at least, a preview for a debut whose time has not yet come.

"Perhaps *UNIAC* or whatever product you develop to come after it can help bring that dawn sooner rather than later. I don't know. But one thing I am certain about. There can be no real Aquarian Age without first passing through the stages of vital and mental individuality, for the Aquarian Age marks the dawn of the spiritual individual, and there is no way to get there without passing through the essential intermediate

stages. How can anyone become a spiritual individual if they still seek the approval and appreciation of other people as a measure of their accomplishment and pride themselves on being richer, smarter or better than others? You may achieve spiritual egoism that way, but not true spiritual individuality. How can anyone become a spiritual individual laughing at who is afraid to pronounce a new social ideal for fear of being laughed at or as long as they are capable of those who do have the courage to pronounce it? Suppose I stood on Sproul Hall steps tomorrow and shouted that America can eradicate poverty in five years both at home and abroad. Suppose I presented a plan prepared by AIS⁹ showing how it could be done. What would people think and say? Would anyone believe me? No. People would say I am a poor old philosophy professor ranting irrationally. But now suppose Bill Gates, Warren Buffet and ten or twenty of the richest billionaires in the world gathered on these steps and presented exactly the same plan that I presented. How would people respond? They would say the plan was brilliant. Why? Because they are people who have acquired and possess immense wealth. They are socially powerful and important, therefore their ideas are respected. But I say that is totally irrational. Those twenty people are no more qualified to pronounce on such an idea than Albert Einstein. Do you see my point?

Dan replied, "You are saying that to accept an idea because it is expressed by an important person is irrational. Is that it? It would be like asking Anya to serve on the committee that awards the Nobel Peace Prize or Literature Prize because she is the inventor of AIS⁹ or *UNIAC*." Dan glanced at Anya to see the impact of his analogy. She paused for a moment to consider whether his words were complementary or derogatory, then concluded there was no hidden sting intended and smiled meekly. "It would be like me saying that a person is a good person because I like them or because they like me or because they just did something that was beneficial to me."

"Exactly, Dan," Stearne said. "To like someone because they are nice to us is understandable, but to pronounce on their character based on the personal treatment they extend to us is egoistic, not rational. Why, by that score, every student I have ever failed should be justified in calling me the devil, when in fact I never failed anyone without sincerely hoping it would send a message to them that would help make their future life better. It is a question of rationality. That is the root of the problem. What does it mean to be rational? It means to judge data without distortion based on our own preferences, opinions, beliefs, values, predilections, habits, temperament, sensitivities, self-interest or past experience. How many people pass the test? I know I do not, though I have been working on it for the past four decades. The truth is that we human beings think with our bodies, not with our minds. Most of our thoughts come from L-9 or L-8, which are centers of physical sensation and feeling. What feels good physically is good and right and acceptable. What feels bad physically is wrong and evil. They start in the subconscious of the body as physical sensations and work their way up until they become conscious. Our higher thoughts usually emanate from L-6, what is vitally or nervously pleasing, or L-5, what is emotionally pleasant. None of this has anything to do with rationality. Rationality starts in L-1.

"Are you saying that only an L-1 type can be rational, professor?" Anya asked.

Shaking his head, he replied with a growing sense of excitement in his voice, "I wish I could, Anya. But I am afraid that is not enough. L-1 is the plane of pure thoughts freed from distortion by physical sensation and vital preference. But it is still very much subject to two other distorting or corrupting influences, mental conditioning and ego. Even in L-1 we see things in a certain way because of the structure of our past mental habits and according to the preferences of my ego. That is what *The Book* means when it says that reason is ego. As long as my mind is conditioned to see things according to what I was taught and from my own personal point of view, I cannot be fully rational. How can we ever expect to create rational mental individuals when our educational system still indoctrinates people to believe what we want them to believe? What would happen if in tomorrow's biology test, a freshman student challenged the Neo-Darwinian view of evolution and set forth the basis for a new theory of creation? Without even reading the paper, the professor would fail him. Why? First, because he is only a freshman and what could a freshman possibly know. Second, because when he reads the word creation, the professor will think Creationism, Intelligent Design, and hurry to snuff out the pernicious nonsense from the poor boy's head. Now suppose the poor student were to go up to the professor after learning that he had failed the exam and explained that he was simply repeating the arguments presented by Joe Stearne on Larry King Live. What would happen then? The professor would say something like, 'Please don't confuse philosophy with science, my boy. Joe Stearne may be a charming man, but he can hardly be considered an expert on human evolution.' The prof may be right or wrong about me, but he is certainly not being rational."

Interrupting in an effort to relieve the tension generated by Stearne's diatribe, Anya said with her sweetest smile, "Your description of human rationality reminds me of an incident from *Pride & Prejudice* which Vinay and I watched last night on TV. Darcy's aunt, a pompous old aristocratic woman, criticized

Elizabeth's piano playing ability and then added that she herself would have been a superb musician if she had ever cared to learn how to play."

Stearne laughed and felt the tension leaving his body. Anya had a way of making him feel relaxed. "In sum," he said, "the physical individual is one who believes he can solve any material or technological problem. The vital is the plane of society and human relationships. The vital individual is one who displays an extraordinary capacity to trust other people and inspire their trust in him. The mental individual is one who defies fundamental assertions on which the beliefs of society are based, as Einstein did with his theory of relativity. The spiritual individual would be one who combined all these powers and then some. He or she would be capable of realizing in life anything he could conceive, for instance, creating infinite money."

Bill thought the professor was drifting too far from the here and now, so he abruptly changed the subject. "Professor, when you insist so heavily on individuality, aren't you really advocating that we all become totally selfish?" he asked.

More relaxed now, Stearne smiled broadly. As he resumed, his voice acquired the mellow, rich resonance which sometimes came to him at his most lucid and eloquent moments. "Bill, that is one of the best questions you have ever asked me, very important. Because when we speak of developing individuality, that is precisely what most people think we mean. In point of fact, we mean something entirely opposite. Selfish people are self-centered, which means egoistic, but that does not make them true individuals. They may still be exactly like everyone else. They often are. Selfishness does not imply individuality. It only implies that a person is totally absorbed in fulfilling his or her own needs and desires. They do not think or care about anyone or anything else, except insofar as that thing or person serves their own purposes. Egoistic people feel that they are supremely important, that the world revolves around them, that it is important for them to succeed more than others, preferably at the expense of others. More than money, comfort, convenience and wealth, what people really want is social status and prestige. The physical body can be satisfied with three meals a day, some clothes and a roof over its head, but the ego has an insatiable appetite for power, possession, prestige and self-importance. That is how it expands. Neither selfishness nor egoism has anything to do with individuality.

"In fact, a true individual cannot be selfish and egoistic, because a true individual is one who has overcome the limits imposed by ego and discovered his universality, his essential identity with everyone else. Perhaps it is only a true individual that is capable of thinking about other people rather than himself and dedicating his life fully to other people because he feels them to be an integral part of his own existence. In other words, a true individual is one who has universalized. You can only discover your real uniqueness when you have widened yourself to embrace the whole world as part of your own being. The true individual is a person who can discover and relate to the uniqueness in other people and help it evolve, because he is conscious of his own spiritual uniqueness."

"Let us leave aside spiritual individuality for the moment. Imagine a nation of true vital and mental individuals. It would be as far above where we are today in its capacity for intelligent and creative action as we are above the impoverished nomads of sub-Saharan Africa. Whichever country develops it first will be the pioneers of the new millennium, like the Hebrews, Greeks and Romans in their own day. I might add, just as an incentive, that individuality is the real key to romance, so whichever country develops individuality will be the first to discover the secret of eternal romance. That's the pot of gold waiting at the end of the rainbow." Stearne concluded, smiled and then closed his eyes. Anya was startled by his last remark and felt like asking for clarification, but seeing his peaceful pose, she resisted the urge. "The secret of eternal romance," she thought to herself with a smile, "now that is a pot of gold worth finding."

The room was utterly still and silent. That rich atmosphere which they had all felt on certain occasions had returned unperceived as everyone concentrated on following the professor's thought. Thought ceased. A pleasant softness pervaded the room. Dan felt and recognized the Descent. After an unmeasured passage of time, they adjourned the meeting and agreed to resume the next day.

Over dinner in the Cloister that night, Levin picked up on a theme discussed earlier in the day. “I am not a financial expert, Dan, but Bill may be right. Financially speaking, for you and the other partners, this might be the ideal time for an IPO.”

“No, Kurt, that is the last thing I want on my hands just now. Once we go public, we will have to spend all our time dealing with the press and shareholders. Even if we retain a majority holding, we still have legal obligations. We have to explain and justify every decision we make. Besides, that would mean we all have to figure out what to do with billions of dollars of cash. That itself can easily become a full time job for a while. I don’t want the distraction or the headaches. No, not now anyway.” After pausing for a moment, Dan continued, “But, since you mention it, I have been meaning to speak with you financially for a long time now, but never seem to find the right time. Every time I mention the issue of your compensation, you find a clever way to change the subject. As far as I am concerned you are an equal partner in this business and deserve as large a share as any of the four of us. I am sure they will all agree. If they don’t, then half of what I have is yours. It may not be time for an IPO but it is time to set that record straight.”

Mimicking Dan, but with a smile, he replied, “I am grateful for your kind words Dan. But your timing is bad. We have more important things to deal with now. I don’t want the distraction or the headaches of thinking about these things. I will tell you when I want something. Anyway, I am waiting to figure out what you are going to do with your share. That will save me a lot of mental agony.”

Dan shook his head and laughed. “Look, Kurt, don’t be ridiculous. You are living like a hermit. You have nothing. You spend nothing. Get a life!”

“Oh, I’ll have time enough for that after I am dead, thank you,” Levin replied. “Anyway, it seems to me that people would have a very difficult time distinguishing my life style from yours. Who’s the original hermit, anyway? What do I need? Since Anya insisted on adding the extra bedroom and the offices for me and for Stearne up here, my home is as big as yours!” Then diverting his line of thought from money for a moment, “That’s a good thing, actually. It was getting pretty cramped with the three of us working together in your study. Why, the professor is becoming also as much a fixture here as I am. I wonder sometimes what he is doing all day in there with *The Book*. You’d think with his prodigious intellect, he could have memorized the whole thing by now.” Then returning to the subject at hand, “And besides, how many executives can brag of an unlimited expense account, like I can?”

“Yes, it’s unlimited, but you never spend any of it!” Dan replied laughing. “Well, frankly, I confess I am not a bit surprised by your irrational stubbornness. It’s a pronounced characteristic of Israelis, or at least so many people say. Anyway, I have already prepared a minor emergency plan to account for this possibility.” He stood up and went into his study and came back a moment later with an envelope in his hand. Giving it to Levin, he said, “Consider this a down payment.”

In spite of the sincerity of his words to Dan, when Levin opened the envelope, he did not even attempt to suppress the delight of surprise he felt overwhelm him. He saw a check in his name for twenty-five million dollars. His face beamed warmly, but he made a supreme effort to control it and speak words that belied his feelings. “Dan, I can’t accept this. I could never afford to pay the Israeli income tax on it.”

Dan laughed and replied. “I thought you might say something like that. But it won’t work. This is an after-tax payment. MAI pays whatever tax is assessed. So, you see. Now you do have worry about what to do with some money whether you like it or not. Get used to it!”

Looking down at the cheque again, Levin feigned a carefree demeanor. “Not bad for a two year sabbatical from Mossad.”

139. Equilateral Triangle

The sun was just setting behind the Golden Gate Bridge when Anya quietly opened the door to Stearne's study at the northwest corner of the Cloister. She had designed the addition as an extension at the corner of the cubical Cloister structure rather than on one of its sides so that the view through the large picture windows on all four sides of the Cloister remained unobstructed, yet the positioning of his office gave the professor a view of his own home in the hills above Berkeley as well as a view of the Bridge and the Pacific Ocean beyond. She had insisted that the interior retain the burgundy leather and golden oak look of Stearne's own home. She had personally selected the Persian carpet that covered the floor. She wanted him to feel as much at home as possible, especially once she saw how much time he spent up here. Sometimes he did not bother to walk the three hills home for two or three days at a time. The room felt and even smelled like him now, like the soft, musty fragrance of a vintage Bordeaux. She worried about him at times. He seemed so alone in the world, yet she knew he was happy and content and often told her so. But recently he had been working such long hours, at a time when there was really no need to strain.

She saw Stearne at his desk, leaning back in the leather arm chair she had specially chosen for him, fast asleep. She quietly slipped into the room and walked up behind him. In front of him *The Book* lay open on the desk where it could be found most hours of every day when he was at MAI. He would come in early in the morning, remove it from the safe in Dan's study and return in to the safe before leaving at night, or as he would probably do again tonight, simply leave it on the desk while he fell asleep on the sofa bed against the wall. Around *The Book*, the desk was covered with papers written in his fine, graceful handwriting. They appeared to be excerpts from *The Book* annotated with comments, definitions and cross-references.

She didn't want to disturb his rest, but she knew that if she did not wake him for dinner, he might sleep for an hour and then work till late in the night on two cups of coffee, a piece of fruit, a cup of yogurt or his favorite variety of Pepperidge Farm cookies which Rosa made sure were always in stock when she came to bring him fresh clothes on days he did not return up the hill. Reluctant to wake him, she looked down watching the slow rise and fall of his chest for a few more minutes, then laid her hands very lightly on his shoulders and began to ever so gently massage the muscles around his neck until he awoke. "I must have died and gone to heaven," he said, without opening his eyes. "Surely, there is an angel in my room. Dear God, I don't know what I have done in my life to deserve this, but thank you." Then a slow smile crept across his face and his eyes opened and looked up at her. She leaned down, her long hair falling over his shoulders, and kissed him on the cheek.

"Haven't you ever been in love, Joe?" she suddenly asked without having any idea why she said it. A momentary regret shivered down her spine at the thought that she might be trespassing on forbidden terrain in his life. She felt so close to him, yet she knew so little.

"My whole life has been a romance, Anya," he said, "and I never felt so much in love as I do just now."

"Seriously, Joe, has there ever been someone special who made your whole life light up with joy? You have never mentioned a wife or children. I never saw any pictures up at your house. I always assumed that you never married. I just wondered why?"

"We were too much in love, for that," he replied in a soft, husky whisper.

"Too much? What do you mean, Joe?"

"I mean too much to ever want it to end, too much to ever try to capture it and lock it up within the four walls of conventional marriage. You must know the old adage that romance ends when marriage begins. We were afraid we might spoil it. At least that was what we thought at the time. That was our ideal. Now I realize it was not necessarily true."

She swiveled his chair around so that she could see his face to be sure he was not playing with her. "Joe Stearne, you mean to say that love and marriage are mutually exclusive sets?"

He laughed gently and took her right hand between both of his. "Calm yourself, my dear. I only meant to say that is most often true and there was a time when I believed that it was always the case, like a universal theorem. As I grow older, I have come to realize that even universal laws have their exceptions, so my views are less orthodox now. But, in general, I acquired the view early in life that marriage and romance are two entirely different things and that one precludes the other. Marriage is alright for those seeking comfort, companionship, excitement, attachment, possessiveness, security, stability, convenience, domination, and social acceptance."

"And romance?" she asked.

“Ah, that is for those who seek adventure, the challenge of unceasing effort, the thrill of never ending mystery and discovery. Romance is for the bold and courageous who are willing to risk everything at every moment and expect or demand nothing as a precondition or assurance. As soon as anything is guaranteed, it ceases to be alive and growing. Marriage is a privilege you win once and encash the rest of your life. Romance is a treasure you have to win over and over again every moment of every day.”

“So you don’t believe that two people can be deeply and passionately in love once they marry?”

Laughing and squeezing her hands more tightly, he replied, “I didn’t say that. I only said it was not what I believed years ago when I was presented with that choice. I remember reading a line somewhere that the body seeks monogamy but the soul is naturally polygamous. The physical wants to possess a single person as an object of security. The soul recognizes and loves the soul in every other person it meets.”

“So there was a time you were faced with a choice. That means there was someone you loved and were tempted to marry. Do you mind if I ask who she was?”

Joe laughed gently and shook his head, then patting the chair next to him and he gestured for her to sit down. Suddenly she felt thirty years younger, like she had felt as a ten-year old child sitting next to her grandfather. Strange how that a tiny change in position can alter one’s perspective so dramatically. She looked up into his face and noticed for the first time how many tiny wrinkles were sketched around his eyes, like the fine etchings of an ancient historian recording all he had seen and lived through. But though she knew those lines were grooves carved by time, he seemed almost ageless at this moment, full of vitality and almost beautiful to her eyes.

“We met in grad school, here at Cal. She was doing a post grad degree in English literature, while I was just completing my thesis about the nature of consciousness. We used to spend hours debating the relative merits of the philosophical and literary view of life. She felt strongly that philosophers understand little of what it is all about, whereas the great authors are in touch with the vital core of life. I argued ably at the time, but realized later that she had been right. She was here when the Free Speech Movement broke out and I was torn between my responsibilities as a young faculty member and my youthful allegiance to ideals. Almost all my colleagues warned me to remain aloof, even if I disagreed with the administration’s stand. Mita alone urged me to do what I knew was right, even if I ruined my career and I lost everything in the process. That was the kind of person she was, that was what she would have done, and she helped me find the inner courage to do it. She helped to make me what I am today.”

“But I still don’t understand, Joe. If you loved each other, why did you part?”

“Roger. There was also Roger. He was my closest friend at the time and hers too. We three were inseparable, though we were so very different. He was an engineer, with a clear, logical, methodical, practical outlook on everything, about as different in mental outlook from either of us as you could imagine. I was the idealist. She was the romantic. He was Mr. Pragmatic. Yet we were a perfect fit and got along fabulously. Finally, they went off together and I remained.”

“You mean to tell me she fell in love with both of you and chose Roger over you?”

Stearne shook his head. “It wasn’t like that. You might say we both fell in love with Mita. Roger adored her, but left to her own feelings she would have chosen me.”

“Then why didn’t she? If she was such a romantic, how could she do anything else? If she was as wonderful as you seem to think, surely she would have understood what type of person you are?”

Stearne laughed again and stroked Anya’s cheek. “I’ll take that as a compliment. Thank you. No, as I explained, we both were as concerned about not spoiling the beauty of what we had, as we were in enjoying its intensity. And besides, Roger needed her. He was not like us. We both knew that he could not live without her, not without feeling empty or deeply disappointed in life. She couldn’t bear the thought of inflicting that pain on someone she loved and I couldn’t either. We never discussed it, but that was what I understood. Besides, she was under intense pressure from her family to marry him, as well. She had the strength to disregard their feelings, but not the heart to hurt them. Mita reminds me a lot of Vinay in a way. They both live their lives entirely for other people.”

“But, Roger, your friend, how could he ask you to make that sacrifice for his happiness?”

“He didn’t. He never would. He never knew what either of us really felt. He only knew he loved us both deeply and wanted our happiness. The three of us were like a triangle, an equilateral triangle with love on all sides.”

“So you both sacrificed your happiness for his sake. That’s what it amounts to.”

“I’d prefer to think we both gave to someone we loved and our lives have been enriched by it.”
At that moment Limpia knocked at the door and called them for dinner.

140. Evolve

Man is the individual human being, and yet he is all mankind, the universal man acting in the individual. He is all and yet he is himself and unique.

Each is the whole Eternal concealed.

The Book

Over the next few weeks Dan, Levin and Stearne spent long hours discussing portions of *The Book* and *Archives* related to the process of psychological growth and the development of individuality. They were clear on the essential process, because *The Book* constantly reminded them that the process of creation, material accomplishment, psychological growth, and spiritual individuality were all the same. There was only one process, a process which it described in terms of three aspects—self-conception, self-limitation, and self-absorption. Regardless of whether the goal was material, psychological or spiritual, the prime determinant was *human choice*. The conscious decision to create or become something better or higher releases the creative power to make it happen. It was easily seen in the life of entrepreneurs. They had seen it in their own case. Now it was simply a question of extending the same process to the psychological plane.

If self-conception is so important, then obviously growth depends on what human beings understand about growth. Therefore the new program they were working on would have to present each individual with a clear conception and set of choices, so that they understood the possibilities. It was up to each person to decide what they wanted to become. The cardinal law of growth is that you become what you really want to become. The person is always free to choose. There can never be any compulsion. The approach they evolved was to present the options to users in terms of the six dimensions of personality and show them that the opportunities for human development were unlimited. In the process they had to overcome the notion that growth was a linear process along one dimension. The dimensions were numerous, in fact, innumerable. There were hundreds of lines for human progress, hundreds of upward paths. For example, to grow in D-3 means to raise one's aspiration, to aspire to achieve more or be better than before. Aspiration expresses as will which generates energy for greater accomplishment. That much was clear. To grow in D-2 means to become more positive. One becomes more positive in relationship with other people. It means to shift from the egoistic urge to dominate and control others, the natural tendency to judge, criticize, resent, condemn, the urge to compete and conquer, the causeless feeling of ill-will and jealousy which are so deeply entrenched in human nature. And since many of these qualities are related to each other, progress on one also implies progress on others as well. To grow in D-4 is to acquire and express higher human values, such as greater patience, tolerance, sincerity, honesty generosity, goodwill, self-giving, or any one of dozens of positive human endowments. Once again, these values are related. Patience is an essential basis for tolerance. Generosity is a basis for self-giving. So progress on one supports and leads to progress on the others.

Following the same logic, they mapped out the options and alternative paths for progress and discovered that they were unlimited. They soon realized the severe limitation in most psychological models, which conceived of growth as progress along one or a few linear dimensions. That simply did not match reality. At this point, Levin came across an article in the *Archives* that depicted growth as a spherical process, an outward, expansive movement in concentric circles from a point to a sphere. The point represents the center of our present personality, the limited ego. The surface of the sphere represents the full development of human individuality at all levels. Each of the six dimensions represents movement from the center to the periphery along a different axis. Of course, the whole model was only a simplified metaphor. There is no actual surface, only an ever-expanding being whose boundaries keep moving farther outward until they become co-terminus with the universe. There are not six dimensions, but thousands or an infinite number of axes along which one can progress. But since each of the axes are related to all the others, so long as the self-conception of growth is inclusive rather than narrowly focusing on a very limited conception of progress, growth along any line will naturally lead to progress along other lines as well.

Once the overall conception was well-defined, they turned to *The Book* for knowledge of the underlying principles governing human progress. This was especially necessary with respect to D-1 and D-6. How precisely, for instance did one move along the continuum from manners—behavior—character—personality—individuality? To move from manners to behavior appeared fairly basic but proved to be quite significant. A person whose development has only progressed to the level of manners means that they have acquired the capacity for appropriate external forms of expression expected by society but that those manners do not actually reflect how they genuinely think or feel inside. To move from manners to behavior is to elevate one's thoughts and feelings to the extent that they are in harmony with how one behaves externally. Once again they found that examples drawn from literature were immensely helpful. In *Pride & Prejudice*, Darcy made genuine progress in the movement from behavior to character. He recognized that he

had been acting boorishly, selfishly, arrogantly and offensively. Rather than justifying or making excuses for his deficiencies, he made a heroic effort to refine his nature so as to express in thought, feeling and action nobler sentiments and genuine goodness. Elizabeth made a parallel effort to move from character to personality and individuality. When Darcy's aunt tried to use the power of her far superior social position to force Elizabeth to submit to her will, Elizabeth brought forth the courage and strength from the depths of her being to defend her position and fight back. That supreme effort to outgrow the limitations defined by the society in which she lived enabled her to rise to the very highest level of that society.

The principles governing development of the nine levels were by far the most complex. During the initial round of research they had only a vague understanding of what *The Book* was trying to tell them. To simplify the task, they focused first on only three stages of transition—physical, vital, mental—and found it far easier to comprehend. They understood that each of the three planes was essential to overall human development, but that each was impaired by negative characteristics which retarded the overall growth of personality. From *The Book* and *Archives* they drew up a list of twenty-seven negative characteristics: Stubbornness, laziness and unwillingness to change by the physical; greed, jealousy and excitability by the vital; opinions, preferences and constructions by the mind. Reducing the influence of any of these twenty-seven characteristics led to an expansion of personality and elevation of consciousness. Once again, they found Darcy's example illustrative and inspiring. When Elizabeth forcefully confronted him with the deficiencies in his personality, rather than reacting in anger or refusing to consider what she said, he made a supreme effort to examine her accusations patiently and impartially. When he did so, he realized the truth in her remarks and set to the task of removing the deficiencies from his character. The romantic love that blossomed between the two of them was the direct result of the willingness of both of them to strive for self-improvement. Rather than looking to find the perfect mate, they made the effort to make themselves more perfect. That formed the basis for a love that could endure a lifetime.

Once this framework had been laid out, they called in Anya to discuss how the concepts and principles of progress could be converted into algorithms. Their task was greatly simplified because all of the elements they were examining had already been reduced to mathematical expressions in earlier versions of AIS. The difference now was that instead of just mapping a users' current position on all these qualities, the objective was to help them move along a continuum of psychological growth from lower to higher levels of attainment on all six dimensions.

The first working prototype of the new program was ready far ahead of schedule. Stearne suggested that they name it *Evolve*. After initial testing, a beta version was released and became immediately popular. The company had initially expected that interest in a psychological version of *UNIAC* would be quite limited. But by the time *Evolve* was released, the popularity of *UNIAC* extended to all age groups, occupations and parts of the world. Once people had mastered the principles of *UNIAC* for material accomplishment, they found it surprisingly easy to make the transition to the psychological sphere. Gradually people were beginning to comprehend that the door to all accomplishment lies inside, it is an inner door, and that the key to that door is the development of individuality.

The launch of *Evolve* led almost immediately to formulation of Type 8 and Type 9 bead games. Type 8 games focused on progression along one or more of the six dimensions. Type 9 games focused on conscious efforts to evolve individuality by applying the principles of evolution of consciousness.

141. The Adversary

The atmosphere at MAI grew more expansive and buoyant with each passing month after the launch of *UNAC*, and the movement was given additional momentum by the astonishing success of the Game. According to Newton's Third Law of Motion, for every action or force in material nature there is an equal and opposite reaction or opposing force. According to *The Book*, there is a corresponding law of life but with one difference. The character of the physical plane is unchanging equilibrium or balance. The character of life is continuous change leading to an evolution of consciousness. If Newton's law was precisely true in the vital plane, then nothing could evolve. Nevertheless, harmony, balance and equilibrium are the governing principles of life as well as of matter, so every forward movement evokes a reaction from all the forces of life that resist or oppose it. They had come to jokingly refer to it as Stearne's Third Law, though everyone knew he was not the original author. The Restoration of monarchy in France after the Revolution, the rise of the Ku Klux Klan after the Civil War, the emergence of the Cold War in the 1950s after the end of what had been heralded as the war to end all wars—history was an perpetual tale of actions and reactions in a spiraling ascent of humanity by minute, imperceptible forward steps intermixed with momentary falterings, sudden retreats and an occasional sudden leap into the future.

It was self-evident to Stearne that the end of the Cold War, the emergence of the Internet and the sudden rise of Terrorism were all of a piece—interrelated and interdependent movements of the continent of human evolution as it moved forward. The end of the superpower rivalry had given birth to the greatest social institution of them all and the end of the threat of war between nations had opened the gates for an explosion of sub-national tensions that released into play the horrors of Bosnia, Somalia, Rwanda and the Sudan and released the genie of fundamentalism which lay hidden but impenitent deep in the human heart. This awareness had prompted Stearne to frame a corollary to the third law stating that the deeper the source of the social movement and more rapid the change, the more powerful the reaction when it comes. And according to a corollary to that corollary, if the reaction does not express progressively apace with the change, then it will erupt violently as an explosion.

By now Stearne was all too familiar with the rules of life to be surprised by opposition. But even he was caught completely off-guard by the events of January 19, 2009. In retrospect he told himself, it need not have been so. There were sufficient indications to alert anyone who was not too self-centered, self-satisfied or self-absorbed to see what was happening. He found himself guilty on all three counts. His project was on the verge of completion and he had lost sight of everything else. The dream of his life, perhaps the very purpose of his birth, was about to be fulfilled and would have been snatched from him in a single stroke had it not been for an infinitesimal detail. Something as insignificant as a tiny speck of dust had saved his work and, most probably, his life. How easy it is to be wise in hindsight! He used to refer to it as the historian's logic, the rationality that argues back from known fact to unknown cause by tracing the progression of events in reverse without ever piercing beneath the surface movement to discover the underlying current, the prime mover.

At least in his case, this could be no excuse. He knew very well where the movement originated and where it was headed. He saw the steps of its progression, past and future. He knew the prime mover, he perceived the source, and he also knew the Adversary. That is what he called it when thinking to himself, though he never used that word with others. It was too dramatic and too simplistic. The Adversary was not a person or a group. It was a Consciousness—a consciousness that opposed and resisted every step of humanity's evolutionary advance. It had many names and many faces. It took on the name of Right or Righteousness, which was even more dangerous. It acted in the name of God or Tradition. It assumed the illusory appearance of Justice and based itself on Law. But whatever the name and appearance, it always amounted to the same thing. It was the blind insistent hostility of humanity's dark past to the bright light and freedom of its future. Stearne knew the opponent well. He had studied it in his philosophies, attacked it with knowledge in the classroom, fought for it on the steps of Sproul Hall against his own administration and at the risk of his own career. He had also taken every opportunity he could to challenge and meet it in the subtle plane of ideas which, of all the three forces of Nature governing humanity, was the least tangible but the most powerful.

The Adversary took on many forms, but even one could be too many. Yet, these innocent kids—that's how he thought of them, although by now they were far from innocent and had stopped being kids before he ever met them—had to confront it in multiple incarnations. It attacked them as Power. It tried to dominate and possess them as Money. It came in the form of Science to scorn and ridicule. Finally it came as the herald of Truth to sabotage and scandalize their work as falsehood. And these opponents were not the abstract forms of the adversary which had threatened and nearly overwhelmed Christian in his journey from

the City of Destruction to the Celestial City in Bunyan's allegory. The opponents that they confronted had been real flesh and blood incarnations, agents and representatives of—of what? Stearne laughed at himself as the word popped into his mind—the *devil*. He laughed because he knew better than that and yet the habit of demonizing the adversary was so deeply entrenched in human consciousness that even he could not resist the temptation. He laughed at his own foolishness, stupidity. He of all people should know better. Hadn't he understood a single word in *The Book*? Humanity's definition of the devil was simple. It was everything and everyone that opposed one's ideas and the fulfillment of one's desires, everyone with different beliefs, values or behaviors than one's own. They used to burn people for that. Now that we are more civilized, we only mock or scorn them or regard them with patient condescension, which only humiliates.

He should have suspected something would happen. The atmosphere was so rich, buoyant and expansive. Only at rare moments can life sustain such an uplifting atmosphere without evoking a reaction from below. The increasing reports of the Descent should have placed him on guard, even if there were no other reason to be concerned. But there were other reasons. Along with the swelling tide of popularity, the company and its products were subject to an increasing stream of bitter, angry, hostile and explicitly threatening feedback of myriad kinds from sundry sources. Levin's team had been able to isolate and identify a few of them, but then success went to their heads and they all, including Stearne, chose to discount and forget about it. But not everyone forgot. In percentage terms, the volume of negativity declined rapidly until it represented a mere fraction of a percent of public feedback which they received. But as it became less significant statistically, it also became more vehemently intense and aggressive psychologically. Instead of merely decrying the company or its products or threatening legal action to protect the moral fabric of America, with increasing frequency it threatened action of other kinds—security violations, viral infestations, data theft, physical attacks on their families and even bombings. Bill had taken care to report all the more serious threats to the police and even the US District Attorney's office in San Francisco, through whom it was passed on to the FBI. Levin had periodic discussions with Luis Gavoché about measures to further enhance security. A month earlier, he had even requested Gavoché to assign staff to establish surveillance around Ray's home and around the house which Anya and Vinay now lived in, without informing any of them of his precautions.

All that day, Stearne had worked without interruption in his study at the Cloister. He had pushed himself harder over the past few weeks to complete his task, although his mind told him there was absolutely no reason to be in hurry or to strain his health in order to finish a few days earlier. What difference could it make? He had waited years, decades already. What difference could a few more days make? That is what he told himself. That is what he thought. But it is not what he felt. Something deep within him was pressing him to complete it and he surrendered to that impulse. He had been particularly productive that day since he had been left completely to himself upstairs all day. It was the first time he ever recalled it happening this way. Dan, Anya, Ray, Vinay and even Levin—who was not even a US citizen!—had flown to Washington for the presidential inauguration on the twentieth, on invitation from the new administration. They had been reluctant to go, but it was an amazing opportunity and he had encouraged them all to do it. Imagine, meeting the new President of the United States on Inauguration Day. It was an incredible privilege. Stearne cared nothing for political gestures, but he understood the significance of the invitation. They and their work had been recognized as symbols of a new America, of the country's hope for the future. It was good and right that they receive that recognition on behalf of the ideas and work they represented, on behalf of *The Book*, which few even knew existed.

So he was alone and had the place all to himself. Even Limpia had not come in today. She was the only other one with a key to the Cloister, so he knew he would not be interrupted. It was a rare opportunity in these days of endless discussion and excitement about the development of *Evolve*. It must have been past one in the morning when he fell asleep at his desk with *The Book* open in front of him. Knowing he was alone, Rosa had brought over some dinner for him and stayed around until about 8 pm to clear up. She would gladly have stayed longer just to be of help or even company to the professor, but when he was in a work mood like this one, he would not raise his eyes from his desk until he dropped with exhaustion. She knew his ways well enough to anticipate what would happen that night, at least as much as anyone around him could or did anticipate it.

At eleven Stearne had risen from his chair, walked into the kitchen and poured a cup of coffee from the pot Rosa had left for him on the stove. Walking back to his room with the cup in one hand, he stopped for a moment to glance out the window. It was a crystal clear night and he could see the outline of the City glimmering across the Bay. The view was breathtaking. With something akin to a romantic impulse, he flipped off the light switches in the living room so that he could enjoy the view even better. It was more than breathtaking. It was romantic. The city seemed to be wooing him. He chuckled. How many men in their seventies, he thought, were being capable of falling for a city? He could. He had fallen in love with Paris

during his very first visit in '68. He had never imagined that a city could be as lovely as a woman. That city was a woman. Tonight this city was wooing him and he was in a mood to be swept off his feet. He was half conscious of the reason. It was his recent discussion with Anya. She had probed his heart and he had opened the door just a peep to give her a glimpse of what was inside. He was not sorry she had asked. If there was anyone in the world he felt like sharing secrets with—anyone aside from Mita that is—it was Anya. Though twice her age, they were akin in spirit and the difference in age only added to the richness of their complementarity. If only Sonya could see her now! How proud she would be of this daughter who so exceeded their expectations. That thought only made him love her more. Standing there staring out the window at San Francisco he was lost in reverie and lost to time. Then a trickle of pain began to pass up his leg to remind him of his body's need for support. He brushed it aside for another minute or two and then turned to resume his work. At the door to his office, he reached down to turn on the light switch and then decided not to. "Why should I spoil this beautiful view, just because I am not watching it?" he spoke out loud. "Let the room enjoy it!" Then he went inside and closed the door. There was absolutely no need to close it, but that was his customary habit. That habit and the dark room were the only things that saved his life—and *The Book*.

A pain developed in his neck from the awkward angle in which he had rested it on the desk. Perhaps it was the pain or the ringing of the Campanile striking two in the distance that had startled Stearne to look up in a daze. Realizing where he was, he leaned over to flip off the lights and dragged himself over to the couch where Rosa had already spread sheets and a blanket before leaving for the night. Then he fell into deep, dreamless sleep.

The sound of the explosion was muffled but enough to awaken a much sounder sleeper than he was. At first he was not sure where he was or what had awakened him. He laid his head back on the pillow, but his mind began to work and he became alert. His very first instinct, his first thought, was not about himself or his safety. It was about *The Book*. He rose and went over to the desk to assure himself that it was still lying where he had left it. Then he picked it up and shoved it as hard as he could under the sofa. Then by a supreme effort, he lay back down, pulled the blanket over his head, and began breathing deeply with his nose pressed against the pillow so that it emitted a sharp rushing sound each time he inhaled. A moment later, he heard the door of his office open and from beneath the blanket he saw the faint beam of a red light moving toward him but stopping at the desk. Too terrified to even breathe regularly, he waited motionless. He sensed rather than saw someone walk around the desk and quietly open the drawers one by one. After an indeterminable interval, the figure withdrew and left the room, noiselessly closing the door behind it.

Stearne remained immobile for thirty minutes. He was taking no chances that whoever had searched his room might still be out there searching some other part of the Cloister. Let them search, if they wanted. The only two things of real importance were in here—*The Book* and his life. Finally he sat up, moving over to his desk, picked up the phone to call reception. The phone was dead. Pulling the instrument toward him, he saw that the cord connecting it to the wall had been cut. The figure must have done it as a measure of precaution in case Stearne woke up while he was still in the Cloister. The professor sat and waited for another twenty minutes, the only sound he heard was the beating of his heart. Then he stood up and walked noiselessly to the door and opened it slightly. The outer room was pitch dark, except for the faint light coming through the window from a nearby office building. He stood motionless, listening. Then taking a deep breath, he turned on the living room light. He was alone. He walked across the room into Dan's study and immediately saw the door of the wall safe standing open. Even from the door, he could see the few papers stacked inside as they always were. He walked around to the other side of Dan's desk and saw the drawers had been pulled open and not shut properly. He picked up the phone and found that it was working, so he dialed reception and asked the guard to inform the police and Luis Gavoché that there had been a break-in and attempted robbery. Then he walked through the kitchen and over to Levin's room. The door had been left open, so he could see from a glance that it was empty. He then went to the front door and tested it. It was locked. He opened the door carefully and peered into the stairway leading down to the executive floor. Then he went back inside and locked the door again.

He looked at his watch. It was going on 3:30 am. That meant 6:30 am in Washington. He picked up the phone and called Dan, who answered on the first ring. Before Dan could express surprise or start to worry at such an early morning call, Stearne spoke two rapid sentences which told him everything he needed to know. "Someone broke into the Cloister last night and went away. *The Book* is safe and I am fine." Then he added, "I have sent word to the police and to Gavoché. There is nothing more to be done just now."

Dan immediately replied that he would get on the first plane back to SFO. Stearne had anticipated his response and interrupted him before he could finish the sentence. "No. It will serve no purpose. Whereas staying where you are for another twelve hours will. Everything is fine now. Finish your work and then come. I am going back to sleep."

Stearne had said those last words to Dan in an effort to assure him that everything was normal. But in fact he was feeling far from normal. His nerves were on edge, his heart was beating irregularly and his head was splitting with pain. Yet, in spite of that, a great feeling a relief descended on him and an intense feeling of gratitude welled up from inside. "After all," he thought to himself, "we made it. We narrowly escaped the blow." Though he did not want to admit it even to himself, something in him felt a sense of exhilaration.

142. Inductions

At 10 am that morning, Levin and Lauren arrived at the professor's home. Juan led them inside without even announcing them first. Stearne was sitting in an easy chair with a blanket over his knees, dozing. Lauren ran up and hugged him. Levin noticed that he looked ten years older than when they had left the morning before, but in some strange manner more contented and less harried than the previous day. Stearne opened his eyes and an expression of utter surprise melted into a faint expression of delight that radiated from his eyes but did not reach his lips, like that of a patient who is too fatigued by illness to even smile. Then he sat up, looked at the clock and asked in wonder, "How could you possibly have come back here so soon.? You must have left the hotel immediately after my call without packing your bag."

"Something like that, Joe. I took just enough time to persuade Dan that the presence of a former Mossad agent would not be missed at the inauguration of a US President, whereas his would. I proposed it because I knew he had already made up his mind to come himself, regardless of the stern prohibition you placed on him. I think fear of your wrath was actually more persuasive than my arguments. Anyway, he reluctantly consented. Lauren picked me up at the airport and here we are. The office security told me you had gone home after meeting with the police this morning, so we came directly to see how you were."

Stearne threw off the blanket and patted his chest saying, "Fully in tact, as you can see for yourself. Now how about some breakfast or lunch. Nowadays the plane food is inedible. You must be famished. I know I am. Do you like German pancakes? Rosa makes terrific pancakes. I concede they have a faint physical resemblance to enchiladas, but the similarity ends there."

Over breakfast Stearne narrated to them the events of the previous night in great detail as he recalled them. He said he had already narrated his story twice this morning, first to the police and then to Bill, and was getting tired of repeating himself. He said if this went on much longer, he would start fabricating facts, just to keep up his interest level. With that admonition, Stearne repeated the questions which police Inspector Ronald Byrne had asked him when they arrived at 6 am, the answers he had provided them and the few pieces of information he had gathered from their discussion. Whoever had done this was an expert with explosives. That was evident. It is very unlikely he could have entered the building undetected, given the heightened level of security put in place the previous month. There had been no detectable breach of building security and no unaccounted faces on the security cameras. Furthermore, the person or persons had entered the Cloister without forcing the door which locked automatically. That meant he or they had to have had a key. Assuming that Dan and Levin still retained their keys, the only possible source was Limpia. She had not come to the office the day before and could not be reached at home or on her mobile this morning, so Inspector Byrne sent an officer to inquire at her home. Stearne says he assured Byrne that there was greater likelihood the crime had been committed by the Mayor of San Francisco than by or with Limpia's connivance, but the inspector insisted on making that determination by himself. Perhaps, Stearne jibed, the Inspector did not have very high regard for the mayor and so the analogy did not convey the full weight of confidence in Limpia that he had intended.

As for the rest, not much was known yet. It was obvious to Stearne that the burglar had been after *The Book*, but he had not shared his insight with the police for the simple reason that they would have impounded it and subjected it to all types of analysis. It might be months before Dan got it back. At the least they would try to photocopy it and if they discovered that was impossible, then questions would really start to fly. And if they did succeed in copying it, it might be at the cost of destroying the original. Stearne insisted that he could not bring himself to make such a momentous decision, especially considering that *The Book* was not his own. But he did not hesitate to add his view that Dan would be the biggest fool in the world to let *The Book* out of his possession for a single moment. So when the police asked Stearne about the contents of the safe, he pleaded total ignorance and said they would have to ask Dan. He refused even to examine the remaining contents to indicate whether everything was accounted for. That too, he insisted, only Dan could do properly.

Stearne's playful mood and humorous remarks about the whole incident finally persuaded Levin that the professor had escaped unharmed. He knew all too well the after effects that a traumatic event like that could have. At the very least, the professor did a masterful job of cloaking the damage. Stearne was deeply moved by the genuineness of Lauren's concern, but tried to behave as though nothing very extraordinary had happened. "Kids, its past noon and I haven't even had a shower yet. I have offered you my most gracious hospitality for nearly two hours. Now will you get out of here so I can return to my work?" Levin understood the intention behind the harsh bluffing words and they left with a smile. Stearne immediately went into his bedroom, dropped on the bed and fell fast asleep till early evening.

Levin called Dan immediately after leaving the house and gave him a brief version of Stearne's extended narration. He was particularly eager to alert Dan about the implications of mentioning *The Book* to the police. None of them had given thought to it up till then. The old man had been more shrewd than any of them. Suddenly Levin's comment prompted Dan to ask, "What about *The Book*? Joe said its safe. But where is it now?" Levin said he had meant to ask Stearne when he met him. But when he saw how aged and frail the professor looked, the question had gone completely out of his mind. He offered to go back inside, but Dan stopped him. "Don't," he said, "if the old man was smart enough to protect *The Book* this far, I trust that he has taken sufficient precautions to keep it safe for the time being."

Levin drove to MAI and met with Inspector Byrne, who had returned to the site for further investigations. Among the dozens of questions the Inspector asked was the possible motive for the burglary and possible suspects within the company. It was the first time Levin had time to consider the prospect that it had been an inside job. While they were talking, Byrne stepped into the other room to take a call. He came back and said that Limpia had left her home the previous morning as usual and not come home at all last night. The police had put out an alert and were looking for her. Levin repeated to the Inspector what Stearne had told him in the morning, this time without reference to the mayor. Byrne just listened and nodded his head.

Luis Gavoché came down from the Cloister with Bill after completing his own inspection. He was one of the few people in the world who knew about the existence of *The Book* and the reason for installing the safe in Dan's study, but he said nothing to the police. That was a decision for his client to make. He said that whoever had opened the safe had known before hand exactly where to look for it and what type of safe they would encounter. They had brought exactly the right tools and performed precisely the right type of procedure to open it. Without prior information, that was extremely unlikely. So already several things were clear. Whoever had done it had free access to the building, a key to the Cloister and prior knowledge about the safe. There was no other reasonable conclusion. But that seemed impossible. There was no single person who could possibly have met those three criteria—no one except Limpia. Levin dismissed the suggestion as absurd. But there did not seem to be any other logical explanation. Levin knew all too well that when the only logical explanation seems highly improbable, then most likely some crucial piece of evidence is being overlooked. They had to figure out what it was.

At 7 pm that evening, the mystery about Limpia was solved. The police called to report they had found her locked in the trunk of her car, which had been abandoned on a quiet street in Marin County. She was alive and apparently unharmed physically, though badly traumatized by the event. She had been taken to a nearby hospital and admitted for observation and her children had been informed. Levin and Lauren immediately got in the car and drove over the hospital. Although it was past visiting hours when they arrived, they managed to negotiate their way in to see the patient. She was awake and alert and smiled broadly when she saw them enter the room. She started speaking rapidly in Spanish with some broken English phrases inserted intermittently. Lauren translated for Levin. Limpia had left home for work as usual and then was stopped a few miles away by a car blocking the road. Two unknown men had forced their way into her car, blindfolded her, made her lie down on the back seat so she could not be seen, and driven her to a building a few miles away. She was locked in a room where she remained all that day and night. The next day, perhaps, about noon, she was locked in the trunk of her car and driven to the place where the police had found her. On Levin's prompting, Lauren finally asked her about the key to the Cloister. She looked around for her purse and recalled that it had been missing when the police found her in the car. Lauren asked further questions to assure herself that Limpia was unharmed. She kept trying to find what she could do to make her feel better, little realizing that her affectionate concern was more soothing than any material remedy could be. Before leaving, she promised to drop by again in the morning.

When Dan walked in at 3:30 am, Lauren was fast asleep on the couch, nestled in Haydee's chair. Levin was still awake, scribbling a list of irrefutable or highly probable facts, another list of questions, a third list of possible explanations, and a fourth, which remained blank, labeled conspiracy theories. Dan disregarded Levin's query about the Inauguration and asked Levin to bring him up to date. Other than the information from Joe, Limpia and Gavoché, there was not very much to tell.

143. Truth

At 7 am the next morning Stearne entered the Cloister with Rosa trailing behind him. “I have brought reinforcements!” he said in a boisterous voice that tried to sound stronger than it was. “Until Limpia returns, let me present the Cloister’s new chef. But the arrangement is strictly temporary, so don’t even think about offering her a job here, unless you need a roof gardener as well.” Dan and Levin were sitting on the sofa with coffee cups in their hands, just about to resume where they had left off their discussion to retire five hours earlier. Lauren sat opposite them in a chair. Stearne couldn’t help noticing that her disheveled hair made her even more attractive than usual. Thirty minutes later, Anya, Ray and Vinay came in. “Just in time for breakfast,” Stearne shouted, in a further attempt to appear far more natural than he felt. Right now his first priority was to see that none of them panicked, especially Ray. There would be time enough later to frighten them with what he suspected they would soon discover about the whole affair.

Stearne obliged the new arrivals with a further repetition of the previous night’s events, but he had already begun to embellish the facts in order to minimize the actual danger and exaggerate the heroic efforts he had made to apprehend the intruders. Levin saw through the act and his admiration for the professor’s thoughtfulness and self-giving rose to new heights. After they had all been reassured of his safety and Limpia’s as well, Dan turned to him and asked, “By the way, Joe. Whatever happened to *The Book*?”

Stearne smiled again, genuinely this time and replied, “I was wondering when you were going to get around to asking me that, Dan. Look at the untenable position you placed me in. I couldn’t very well allow the *The Book* to fall into the hands of our inveterate police inspectors. I might never see it again! I could not very well remove *The Book* from the building without violating the ‘prime directive’. What was I to do? I hope you appreciate my dilemma.” He paused just to tease them, then he extended his arm in the direction of his bedroom and pointed toward the sofa on the far wall. “If one of you young ones will kindly oblige me, I believe you will find the said object safely stowed were I placed it two minutes before the intruder entered my room.”

Levin, who was nearest the door, sprang up before anyone else could move and strode quickly into Stearne’s study, knelt down on the floor in front of the sofa, moved his arm back and forth underneath, and returned to the kitchen with *The Book* in his hand and an expression more of relief than of satisfaction on his face. Stearne beamed like a child overly proud of his own cleverness, but in fact he too felt a great relief in seeing *The Book* recovered safely from where he had left it.

Levin then pulled out his list and mentioned key points that required their attention. They had solved the mystery of how the intruder or intruders had entered the Cloister. They still did not know how they had entered the building itself. Initial review of the surveillance tapes had not provided any new information. Levin said that they must assume for the moment that the intruder was a MAI employee. That would not only explain how the person got in, but also how he knew in advance that Dan would not be present. It seemed obvious to Levin that the whole thing had been planned to take place on one of the rare occasions when Dan did not spend the night in the building. They may have planned the break-in months ago and simply waited for the right opportunity to act. Gavoche had assured him the safe could not have been cracked without prior information about it, which could only have been obtained from Luis’ own offices. Luis referred to the security breach which had occurred in his own company fifteen months earlier and told Levin that he believed that information about the safe must have been taken at that time. That meant that it was the same people who had broken into Gavoche’s company and who had planned the data pollution of *Accomplish*, which occurred immediately thereafter. “If these conclusions are correct,” Levin said, “then is obvious that we are dealing with a highly sophisticated and determined opponent, perhaps the very same people who attempted one or more of the break-ins at Dan’s apartment. This time they did not hesitate to commit a kidnapping in order to get what they want. These people obviously know about *The Book* and are willing to do almost anything to get it.”

“Not anything,” Dan said in order to quell the rising anxiety brought on by Levin’s words, “they decided not to awaken Joe. That suggests they would like to avoid confrontation.”

“That’s one possibility,” Stearne remarked in a light bantering tone intended to reduce the rising level of anxiety he saw in Anya’s face. “It is also possible that they were terrified of incurring my wrath, or convinced that I was too stupid and ignorant to tell them anything useful, or simply convinced when they opened the safe and found it empty that you had taken *The Book* with you on your trip. Let me remind you all that the activity we are engaged in, is what is known as induction in philosophic terms. As novices to the art of investigation you may be prone to the fatal error which most police inspectors fall prey to, including the famous Inspector Lestrade, whose remarkable capacity for quickly jumping to the wrong conclusion by

induction served as a brilliant contrast to Sherlock Holmes' profound powers of deduction. Our mathematician here, I am sure, knows what I mean."

Anya went up to Joe after breakfast, hugged him and whispered in his ear. "You three think I'm stupid, don't you, pretending this is some kind of joke to be made light of. You do realize, Joe, that if you hadn't been working late nineteenth night, we would have lost *The Book*, don't you?"

Joe only shrugged his shoulders and tried to look innocent. Anya may be anything, he thought to himself, but she was not stupid. Actually the thought had never occurred to Stearne or to any other them. Anya, no doubt, meant it as an expression of her gratitude for the help he was providing them. But she could have no idea of the significance which her words had for him. He had already taken the break-in as an indication that what he was doing was essential. It was the only sure way to preserve *The Book* from eventual destruction and his friends from likely harm, now or in future. But now that Anya expressed it, he suddenly saw that life itself sanctioned his act, *The Book* too approved of what he was planning, even if Dan and the others may condemn or reject him one day soon for breaking the 'prime directive'. Stearne looked up and smiled at her. She saw something new in his eyes which she hadn't recognized before and stared in a vain attempt to decipher what it was. Like so many of Ramanujan's formulas, it was easier to wonder at their mystery than to decipher their meaning.

At 9 am Inspector Byrne returned to meet with Dan. He was particularly interested to learn about the contents of the safe.

Dan was faced with a terrible dilemma. If he revealed the existence of *The Book*, he knew he was placing directly in harms way the single most valuable thing in his possession. He could risk almost anything, all his accumulated wealth even, but not that, not *The Book*. At the same time, he knew, he had come to understand and believe that the very existence of *The Book* was founded on the principle of Truth. Truth was the foundation of creation, Truth was the essential nature of the Infinite Creative Consciousness. To compromise on that single principle was to deny and undermine everything he had been working for. Dan was not a dogmatic person. He was not one prone to regard things in overly simplistic terms. He knew that life was complex, that the highest of ideals was tarnished and corrupted the moment it was expressed in action, the highest knowledge was distorted and often perverted the minute it was expressed in mental terms, that was almost inevitable because of the simple fact that they were governed by ignorance (unconsciousness), division, and ego.

But this was different. It was one thing to realize life corrupts and mind distorts. It was another thing to consciously justify and participate in that corruption. He knew that if he revealed the existence of *The Book*, the most understanding of his partners would think him a fool. The thought of that disturbed him deeply. How could it not? The possibility of losing the respect of people who meant so much to him was painful even to contemplate. But he knew that would not stop him, if he really believed what he was doing was right. The problem was that he did not know for sure what he believed. He was afraid of violating a letter of the principle of Truth. He was equally afraid of ignorantly mistaking a metaphor for a literal truth. Wasn't truth more a matter of intention than of action? It was the spirit of truth that mattered, or so he told himself. It was not as if he was doing this for some selfish gain. He was doing it so he could share that knowledge with the world. Or was it? Could he honestly say he was not attached to *The Book*, possessed by it as much as its possessor?

Dan faced a dilemma, but it was not a moral dilemma in the normal sense. For him, it was not a question of right and wrong. He was not afraid of sinning or incurring God's wrath or generating karmic consequences that would later come back to haunt him. No. He was afraid of not knowing the Truth, the truth as it should govern his life. There was no question in his mind that if he did what was True, it would lead to the best possible outcome, regardless of present appearances. He believed completely in the power of Truth to accomplish. He had total faith in it. His problem was that he did not really know what Truth meant in this circumstance. Was it something as simple and literal as a factual statement or was it something more subtle and complex that could only be known by viewing this act from the wider perspective of all humanity and the whole universe. He knew very well that Truth was not what he wanted or what would benefit him personally. But then what was it?

At the same time, he wondered, even, whether he had a right to consider *The Book* in any sense his. Did he have any greater right to speak about it than Stearne? Was he under less of an obligation to confidentiality than the professor? Hadn't *The Book* made it clear from the very beginning that confidentiality was the condition for its collaboration? Hadn't it communicated almost as clearly as if it had spoken that efforts to reproduce it would only lead to its disappearance? Perhaps, this situation had come

precisely because he had to be willing to give away *The Book* in order to fully qualify himself for the knowledge it had to offer. Perhaps this was a test, an ultimate test, of his commitment to the principles *The Book* represented. Why had this happened? What was life trying to tell him? He could not see his way clear to an answer.

As he went downstairs to his office to receive Inspector Byrne, nothing had been resolved in his mind. He had no idea what to say. When they were introduced, Byrne recognized Dan, but could not immediately place his face. Byrne summarized for him the initial police findings regarding the burglary and then said he wanted to ask Dan some questions. He asked Dan whether he had any idea what it was the burglar was after. Dan paused to take a deep breath and then nodded his head. He told Byrne that he knew exactly what they were after. They were after a book which contained the knowledge on which all MAI products were based. Byrne listened with great interest and a sense of satisfaction. Finally he was getting somewhere. The intruders had been after some kind of computer designs or code book. He had encountered numerous cases of this type. They were one of the most common forms of white collar crime in the Bay Area where half the computer software companies in America conducted fundamental research. It was also one of the most difficult types of cases to solve. Once confidential information was stolen, it was so easy to reproduce it, conceal it or transport it, that even if the perpetrator was found, it was rarely possible to prevent the damage done by the crime. You can recover money or property, but how can you recover confidentiality once it is lost? This was clearly a case of industrial espionage, not burglary in the normal sense. That was imminently clear.

Then Byrne asked whether the intruders had succeeded in getting what they were after. Again, Dan shook his head and explained that fortunately the book had not been in the safe at the time of the break-in. "That's very fortunate," the Inspector said as a genuine expression of goodwill. "I am relieved and delighted to hear it. Do you keep anything else in the safe of value, Mr. O'Hara? Money, perhaps?" Dan shook his head again. "Now can you give me any idea who might have wanted to steal this book?"

Dan said that he they had been aware for years that someone was trying to steal information vital to the success of the company, but they had never been able to figure out who it was. He mentioned the break-in at Gavoché's company fifteen months earlier and said that might explain how the intruders were so well prepared to open the safe. Byrne was delighted by this information. The case was clearing up far more quickly than he had dared hope. He already knew that the thief was most likely a company employee. Although they had no description to go on, they were now in the process of studying employment and attendance records to narrow down the list of suspects. More than five hundred people worked in this building on a normal basis, but on the nineteenth only four hundred twenty had actually been present. Now in most cases of this type of insider crime, the employee disappears immediately after the crime is committed, but not always. It depends how likely the criminal thinks it is that the crime can be traced back to him. If the probability is low, then it makes sense to stick around, because his very departure becomes a confession of guilt. In this case, they could not assume the guilty person had left. They would check for the abrupt departure of any employee, but barring some good luck, they were unlikely to discover the person in that manner. In fact, without more information, it was unlikely they would ever be able to identify who had done it. That was another common characteristic of white collar computer crime.

But there was one difference in this case, Byrne explained to Dan. Whoever entered the Cloister was an expert safecracker, one of perhaps less than hundred people in the country capable of opening that safe. Now that narrowed the field enormously. Unless, as Dan pointed out, an employee had been specially trained just for this single task, because those behind it knew precisely what they were dealing with. Byrne's enthusiasm waned as he conceded the truth in that point. Frankly, Dan was so relieved that the conversation had been diverted from *The Book* that he did not mind whether the prospects of catching the thief were improving or declining by the minute. Just at this moment, Dan was more afraid of the police than he was of the Adversary, as Stearne liked to call whoever it was who had broken in. While Byrne was reflecting on the possible ways to identify the employee, Dan was reflecting on the power of Truth that had spared him the necessity of lying. He breathed more easily now and a glow of inner joy welled up that he struggled to keep from expressing on his face.

Finally, Byrne asked Dan to accompany him back to the Cloister to examine the remaining contents of the safe. Dan readily agreed, silently praying that the Inspector did not again come back to the subject of *The Book*. The safe door was still standing open as Stearne had found it thirty-six hours before. The locking mechanism had been destroyed beyond repair and would have to be replaced. Dan wondered if a position under the sofa might not be a better hiding place in future than a safe. Byrne removed the papers from the safe and asked Dan to go through them. He knew that nothing he had placed there had value to another person. Everything was replaceable. The papers mostly consisted of confidential concept plans for *Accomplish*, *UNIAC*, and *Evolve*. He also had kept some notes from their first meeting with Stearne about

Theon and the history of the book, the Round Table and other organizations. He leafed through the papers with apparent interest and concern in order to lend the impression that he was taking the exercise seriously.

Suddenly Dan came to a sealed envelope which he did not recognize. It had his name on it. He broke the seal and removed the contents. The message had been scrawled by a thick black marker pen.

Give us what we want or next time it will be more serious!

Dan had no time to reflect on whether to show the message to Byrne or not. The Inspector had been leaning over his shoulder watching him leaf through the papers. He read the message almost at the same moment that Dan read it. Byrne walked around to the other side of the desk and sat down directly across from Dan. "I think you better explain to me the significance of this message, Dan. This matter does not sound to me like a routine case of industrial espionage." A minute before, Dan had thought he was on safe territory. Now suddenly the foundation had collapsed and he was floundering for something to hold on to and guide his next words. At that instant Byrne recalled the details of their last meeting. "Now I remember!", Byrne said with a smile of self-satisfaction. "A few years ago you reported a gunman tried to rob you of your briefcase while you were stopped at a traffic signal." Clearly impressed by his own prodigious memory, he continued, "I especially recall it because the incident seemed so unusual for Berkerley. But at the time you said you said you had no idea what the robber could have been after. Perhaps you were not being perfectly frank with me then. A glint of suspicion sparked in the inspector's eyes.

144. The Heretics

Dan was relieved to see the professor walk into the room the next moment. Stearne greeted the Inspector and sat down without saying anything. Dan held out the message to Stearne who read it three or four times and handed it back. Dan was scrambling in his mind for something he could say to Byrne, but his mind had gone blank.

"I assume from this message," Byrne resumed in a tone of voice that was noticeably less cordial and more forcefully inquisitive than a few minutes earlier, "that these people are after the book you referred to, Dan. Am I correct?" Dan simply nodded. "People trying to steal other people's industrial secrets for monetary gain do not write messages like this one, I can assure you. So something else is going on around here and I need to find out what it is. First I want to know exactly what this book is that they are after and why they want it badly enough to threaten you like this. Where is the book anyway? I would like to see it for myself. And I will need to get some department experts to examine it as well." Dan was filled with dread and fumbled for words to respond.

"I believe I can be of some help in answering those questions," Stearne said in a commanding authoritative, almost pompous voice that was in sharp contrast to his usual mode of speech. "You see that is why I have been invited to work at MAI as a consultant. I am the world's greatest living expert on this subject." Byrne examined the professor carefully, apparently trying to ascertain how much reliance he could place on the man's words. "Have you ever heard of Max Theon, Inspector?" Then seeing no response, he continued. "I thought not. Very few people have, actually. He died eighty years ago. He was an instructor to Madame Blavatsky, who founded the Theosophical Society and also to Mirra Alfassa, who went to Pondicherry to collaborate with Sri Aurobindo and became known as The Mother. "

A look of annoyance came on Bryne's face and he interrupted. "Why are you telling me this, professor? What does all this have to do with the case? And if you know so much, why did you not tell me about it when we met the first time?"

"That is precisely what I was getting at, Inspector," Stearne replied. "This has everything to do with the case. I apologize for not speaking more frankly then, but I was invited to MAI as a paid consultant under a strict confidentiality clause. You see if the information contained in these documents leaks out, it could cost the company billions. So you can understand my reluctance to speak without permission. Well, as soon as Mr. O'Hara returned, he instructed me to fully cooperate and authorized me to disclose all relevant information, barring of course the essential coded secrets and algorithms that have no value to the police but are of inestimable value to the company."

The Inspector listened carefully but still was not fully blinded by the wool the professor was trying to pull over his eyes. "First, I would like to see this book, if you don't mind. Where is it?"

"Do you read Sanskrit, Inspector?" Stearne asked. Then, seeing the puzzled look on Byrne's face, "Of course, you don't, nor is it likely that anyone on your staff reads Sanskrit either. After all, it has been a dead language for more than two thousand years. The Vedas go back at least five thousand years, but between you and me I believe they are even older. The Upanishads, which came two thousand years later, are probably five thousand years old themselves, which predates the Bible. The point is, Inspector, I am an expert consultant in these precise matters. I have been called in by the company to help them decipher the meaning of the document to which Dan refers. If the police would like to obtain an independent opinion, I can refer you to an expert with comparable knowledge to mine who lives in London. Or you can engage me. But perhaps I can save you some time. Take a look at this, Inspector." Stearne pulled a sheet of paper filled with hand written material out of his coat pocket and handed it to Byrne.

Byrne read the page slowly and carefully. "Why, this is some kind of philosophy or metaphysics or religious doctrine. What does it have to do with the work of MAI?" he asked.

"That is precisely my point, Inspector. As a philosophy professor of forty years standing, my assignment is to decipher and interpret the meaning of this document and help the mathematicians and computer scientists at MAI convert it into practically useful knowledge. Contrary to public opinion, not all of us philosophers are lost in the clouds, Inspector. We too can make a practical contribution to society."

"So you are saying that your job is to translate this document into English and explain it to the people here so they can use the ideas to design their products, is that it?" Byrne asked.

"Actually, the precise technical term is transcribe, but that is the general idea. Now I have in my office hundreds of pages of material like this. The company is paying me a small fortune for that work. As

long as you can assure MAI of absolute and total confidentiality, I am sure you are welcome to the documents.” Dan sat through the conversation, utterly speechless and growing more amazed by the moment. Stearne had managed to give a perfectly plausible explanation for the entire affair without actually saying one thing that was false. He was not sure he could apply the word Truth to what had been said, but at the least it was a borderline case and even if stated under oath would be free from any possible charge of contempt.

“Let’s come to the next point, professor. Who in the world could possibly be interested in stealing this material and why do they want it so desperately,” he asked.

“That is precisely the next point I was coming to, Inspector. You see for Dan and his associates, these documents are a means to earn billions of dollars. But the people who kidnapped Limpia and broke in to this room are fanatics, religious fanatics, fundamentalists who desperately want to obtain this document because they believe it contains justification for their violent and intolerant religious beliefs. These people regard Dan and his colleagues as some sort of mercenary heretics, a kind of Indiana Jones breaking into a temple to steal the Holy Grail so he can make a fast buck.”

Stearne’s last comment suddenly made Byrne think of something. Stearne thought of it too, but when it was too late for him to withdraw what he had said. “Come to think of it, Dan. Where did you get this secret code book?”

Now that was one question Dan could readily and honestly answer. “Believe it or not, Inspector, I found it at Moe’s bookstore on Telegraph in 2004. Swear to God.”

Byrne shook his head in wonder at how serious people could get about mystical doctrines from a used bookstore available a dime a dozen. Even his daughter had done it for awhile, casting horoscopes for every member of the family and giving Tarot card readings over dinner. The world was full of crazies, he thought to himself. “Now I am beginning to understand what this case is all about,” he said. “Tell me, professor, do you have any idea about the identity of this group and which country they come from? Are they Palestinians, Muslims, Jews, Nazis, Buddhists or what?”

“Well, barring the Buddhists who rarely take to fundamentalism, that is a pretty comprehensive list, Inspector. You might have added Shintos and Hindus, though Hindu fundamentalists are more fanatical about politics and nationalism than about religious issues. I am afraid I can not help you much on that score. My advice would be to start with groups that are closest to home, right-wing, radical Christian fundamentalists right here in the USA, in Georgia or, perhaps, Louisiana.”

Stearne saw that his listener looked somewhat incredulous. “If you doubt me, Inspector, I suggest you go through a sample of the fanatical hate mail MAI has been receiving lately. In fact, the company has already filed a complaint with both the police and the USDA’s office reporting threatening mail. It actually started eighteen months ago. Perhaps you know that MAI was the victim of an insidious attack of data pollution last year that resulted in total failure of its new product, *Accomplish*, and cost the company hundreds of billions of dollars. That was shortly after a break in at Oxford Security, Luis Gavoche’s company, which possessed all the computerized access codes for MAI’s mainframes.

Byrne’s interest was ignited and he began making notes of what Stearne had told him. “Can you be more specific about which fundamentalist group might be involved, professor?” he asked.

Stearne nodded. “As a matter of fact, I can probably send you a list of a few hundred groups that might be behind this crime. But, mind you, I have absolutely no concrete evidence pointing to any specific group.”

Byrne turned the conversation back to the book again. Dan was sure he was going to insist on seeing it and perhaps photocopying it. Then suddenly Stearne introduced a whole new subject. “I also think I can give you some leads about who might have been the inside person responsible for the job, Inspector.” Byrne looked at the professor with growing appreciation, confidence and respect and asked him to explain. “Well, according to HR, five hundred thirty-two people work in this building on a regular basis. Of those, only four hundred twenty entered the building on the nineteenth. That is because MAI runs a seven day week, so 14 percent of the staff are off on any given day. Taking into account normal absentees, it averages only about four hundred twenty on any given day. Obviously we can eliminate those who did not come on the nineteenth. I would suggest we can also eliminate those who did not come on the twentieth. I say that because judging from this note, the intruder plans to remain employed at MAI, at least until he gets what he is after. So that narrows down the number of possible suspects to about three hundred eight, give or take one or two either way.”

“That is still a very big number of suspects,” Byrne said, “Almost a haystack full.”

“I agree, Inspector. That is why we have to narrow it down further and I have an idea how we can do it.” Not only Byrne, but even Dan, was almost mesmerized by Stearne’s analysis. “As Luis Gavoche explained, the person who broke into that safe knew what to expect before ever entering this room. The only possible explanation is that they were the same people who broke into Oxford Security fifteen months ago. Now it makes sense to assume that only after they obtained that information could they decide who to recruit to handle the break-in. If that is the case, then the employee could only have joined MAI after November 2007. By that time MAI already had four hundred people working in this building. Then they began constructing the new building. Let us assume that out of those four hundred, fifty have since left the company and another hundred have shifted to the new building, then two hundred fifty of the three hundred eight remaining employees have been with the company too long to qualify as bona fide suspects. Of course, these are only rough numbers. HR will have to work out the list precisely. So you see we have already narrowed it down to about sixty people.” Byrne seemed pleased and impressed by Stearne’s analysis and expressed his appreciation. “But we are not quite through yet. I think we can also assume that the person who did this has been around here for some time, since the hate mail is not a new thing. Supposing we assume that the person has worked with MAI for at least three months, it may reduce the list by another ten people or so. That leaves only fifty.”

Stearne saw he had won over the inspector. He himself was feeling fatigued by his effort to think on his feet and formulate a plausible explanation *ex tempore*. He began the last phase of his argument and hoped it would be enough to fully satisfy Byrne. “Now, whoever did this could not be just an ordinary MAI employee. It had to be someone who knew that Limpia had a key to the Cloister. It had to be someone who knew or had access to information that the four partners would be away in Washington on the nineteenth. Most importantly of all, it had to be someone with access to the executive floor, which is the only way to reach the Cloister by stairs. Now I grant that internal security is fairly lax around here. My Rosa comes and goes pretty much as she wants. But still, we are probably talking about someone in the middle to upper ranks of management or at least someone who works for those people and moves among them. I would guess that this will narrow the list to less than twenty. If I am correct, then one of those twenty should be an expert safe cracker and just may be on record somewhere. If am not correct, I apologize in advance for sending you on a wild goose chase and hope I can help you come up with a better theory next time.”

Byrne did not know whether Stearne was correct or not, but it gave him something solid to go on. He could put people on the job immediately and then get back to some of the more serious cases he was working on. After he excused himself, Dan and the professor sat for several minutes without exchanging a single word. Dan was looking at him, searching his face, wondering what was going inside that amazing head. Stearne was glancing down at the paper on the table lost in thought. Finally he raised his eyes and they met Dan’s. A silent understanding passed between them and a glimmer of smile appeared at the edges of the professor’s mouth. Then it was Dan who glanced away, looked down and noticed the paper. “Lucky for us you happened to have that piece of paper with you, Joe. You seem to have copied one of the pages word-for-word.”

Stearne swallowed and nodded his head, “Yes, this is an interesting passage. I wanted to see if copying it would help me absorb the thought. As you say, we were lucky. It came in handy with Bryne.”

145. Avatars and Asuras

Later Dan, Levin and Stearne met in the Cloister to review the situation and decide on next steps. Dan thanked the professor for taking over the discussion with Byrne and distracting his attention away from *The Book*. “Did you really mean what you said about Christian fundamentalists, Joe, or was that just part of your effort to distract Byrne?” he asked.

“Of course, I meant it,” he replied. “Do you think you are the only one who believes in the power of truth? Granted, I may have been a little fuzzy at points or told the inspector things he did not really need to know, but essentially I told him the truth. I told him that I could not tell him which specific group was behind the intrusion and that it made the most sense to start with those closest to home. What possible reason do you think Islamic, Buddhist, Hindu or Shinto fundamentalists would have to get at *The Book* anyway? I cannot think of any. First of all, very few would understand it. The Islamists already believe that they know the ultimate truth and everyone else is steeped in falsehood. What possible concern could they have for one more variety of that falsehood? Hinduism already encompasses and tolerates so many different and conflicting sides and aspects of reality, they couldn’t care less about a conflicting view. Besides, *The Book* is consistent with all the most fundamental tenets of Hindu philosophy. Buddhist fundamentalism is a rare breed and the Shintos regard the rest of the world as if it belonged to another planet, so who is left? Christians and Jews, that’s who. And that is what I told him.

“But if you noted my words precisely, I said that I could not tell him more than that. I could not tell him because, if I did, he would definitely not believe me and might end up demanding once more to look at *The Book*. I could not let that happen. The Adversary we face is way beyond the comprehension and capabilities of Inspector Bryne, so I gave him something I thought he was better qualified to handle. I pointed him to the infestation of self-righteous, fascist, reactionary, war-mongering, anti-democratic forces that are threatening to take our country back to the time before we were a country. That represents a real danger which I have been fighting for decades and most of the time the police have been supporting the other side! I have received a lot from those people and thought it was time to return the favor. So I simply took this opportunity to encourage the inspector to do the job he is competent to do and should have been doing.” Stearne spoke strongly but with a gleam of mischief in his eyes which belied his strong words.

Dan was finding it more and more difficult to clearly discern what Stearne really believed or intended anymore. He had tried to teach himself to distinguish the professor’s words from his intentions, his surface intentions from his deeper understanding, and his deeper understanding from his ultimate central motives and values. But there were as many layers to the man as there are to every human being. But in most people those layers are subconscious or unconscious and the individual himself does not understand his true motives and the forces that drive him. But Stearne was different. His self-awareness went deep, plunged through so many layers and depths, yet each was allowed to freely express itself in the appropriate context without interference from the rest. He seemed to consist of a bundle of multi-personalities living in peaceful and harmonious co-existence, yet there was a hierarchy of command that was always in-charge, ready to restore order and direction when it was called for. That depth of self-knowledge was the source of Stearne’s penetrating insight into other people, his capacity to perceive in them what they were not altogether conscious of in themselves. Much of what passed for wisdom in him was not knowledge in any traditional sense, certainly not facts. It was the power to perceive, clearly, deeply and broadly by a greater power of consciousness. Consciousness is the original source and the essential medium for all knowledge.

Stearne went on to explain that the Christian fundamentalists he believed were behind MAI’s troubles were not the conservative, right-wing evangelical Christians that dominated the far right in America. Though, he personally regarded many of their political ideas as suicidal for the future of America, their religious beliefs were of no particular concern. Rather he was talking about a far more ancient line of Christian thought, more particularly, a branch of Gnosticism that dated back to the third or fourth century AD and drew inspiration from more ancient Indian teachings. “Many of the ideas in *The Book* are consistent with fundamental concepts in early Gnostic teachings, although most of them have undergone major distortions and revisions in later centuries. For example, the Gnostics believed that all powers in the universe were emanations or expressions of the One. In pure Gnosticism there is no fundamental dichotomy between what is divine and undivine. The Gnostics viewed this world as an inferior representation of a higher divine reality or consciousness, but not as inherently false, evil or illusory. They understood the Fall of Man as symbolic of the process of involution, the descent of consciousness that made creation possible, not as the result of human weakness or attraction to evil.”

Stearne went on to explain that there had been a revival of interest in Gnosticism at the turn of the twentieth century as part of the broader interest in mysticism that surfaced at that time, led by people such as Theon, Blavatsky, Aleister Crowley and many others who founded literally hundreds of secret societies

based on various combinations and interpretations of ancient and modern Christian doctrine. Although membership in these societies was often kept secret, the existence of the societies themselves was well known and sometimes even publicized. That added to the mystique of being a member. But there were some societies which maintained such strict confidentiality that none but its own members even knew of their existence.

“I told you during our first meeting that Max Theon was associated with the origin of *The Book*, but that he was definitely not its author. But there were some things about Theon I did not tell you, because I was quite sure you would not believe me and it seemed unnecessary at the time. Theon was a very powerful occultist and a very dangerous man. He was more than that. He was what is referred to in the spiritual tradition, as an incarnation. Incarnations are of several types and many different degrees. The most powerful positive incarnations are the *avatars* that work for evolution of humanity and the divinization of life. The most powerful negative incarnations are known as the *asuras* who oppose the evolution. Theon was believed to be an incarnation of an *asura* and his specific mission was to steal the knowledge of Life and employ it for his own egoistic purposes. He was an extremely powerful occultist. According to one first hand witness, he had the power to deflect a lightning bolt from its course by a sheer act of will. It was said that he would stop at nothing to achieve his purpose. However, he failed. The reasons and circumstances do not concern us at this moment. It is enough you understand that he failed, but he did not give up. He failed in the sense that *The Book* was written and printed—at least one copy. We do not know whether more were printed and later destroyed or whether only one impression were taken of every page on a hand set letter press, entailing an enormous labor of typesetting to produce this one tiny object. Theon also failed in the sense that he was unable to obtain a copy of *The Book* and possess it during his lifetime. We know that for sure because he continued his desperate quest right up until his death in 1927. Had he done so, the course of human events over the past century may have been very different than it has been.

“You may find this very difficult to comprehend or believe because for you *The Book* is merely a source of inspiring ideas. But that is not the case. *The Book* is a source of *knowledge that is power*—only, the knowledge and power we derive from it is limited by the powers of our own consciousness. In other words, what we get out of *The Book* depends very much on who we are. It depends on our aspiration, our sincerity and our consciousness. Theon had an aspiration of the most intense variety, but it was not an aspiration for ultimate Truth or ultimate Good. It was an aspiration for ultimate Power. It was an aspiration to obtain and exclusively possess the power of *The Book* to aggrandize ego. In metaphysical terms means to serve darkness, falsehood and evil which are the roots of that impulse.

“For a long time I wondered why only one copy of *The Book* was ever printed. It did not make sense to me. If the author had intended that it benefit all humanity, why print only one copy. If everyone had access to the knowledge, then Theon would have been powerless to possess it.”

“Excuse me for interrupting, professor,” Dan said, “but I am confused. If many copies of *The Book* had been printed, then Theon could easily have obtained a copy. Is it possible that only one copy was printed in order to keep it away from him?”

Stearne nodded. “For many years before we met, that was precisely what I believed. But something you said during our very first meeting led me question it. You told me that when you attempted to make a copy of *The Book*, the pages of the original disappeared. I replied by telling you about the existence of occult spells that could generate such an effect. After you left, it occurred to me that I might have been under the wrong assumption all these years. Perhaps it was not the author who had decided to limit the number of copies of *The Book* to prevent Theon from getting one. Perhaps it was Theon who had exerted his power to prevent more than one copy from being printed and circulated! The idea occurred to me, but at first I had no way of making sure. But after I had an opportunity to read and study *The Book* in depth, I became convinced that the latter was a far more likely explanation. The knowledge contained in *The Book* is an all-inclusive knowledge. The more widely it is disseminated, the greater its power for good. The main obstacle to the dissemination of that knowledge is the lack of human receptivity. An all-inclusive knowledge does not appeal to the human impulse for smallness. Man loves the infinitesimal, not the Infinite. I now believe that Theon’s goal was not just to obtain that knowledge. He wanted to obtain it exclusively for himself, so that he alone possessed it. That is the very nature of the asuric consciousness. Now in order for my explanation to be plausible, it is not necessary that you believe in *asuras* or that Theon was one or even that *The Book* has the power I say it has. It is enough that Theon and his followers believed it. As for the power to prevent reproduction of *The Book*, why that is something anyone with a little knowledge of the occult would know is completely feasible. Far greater things are done routinely.”

146. The Marvel

Dan found it difficult to concentrate any longer on what Stearne was saying to him. His mind was too full of thoughts and insights. It was too busy filling in crevices and making connections. Suddenly many pieces of the puzzle fell into place for the first time. He knew nothing of *avatars* and *asuras*, but he very well understood the reality and power of the ego and its desire for exclusive possession and power. He had felt it in himself and struggled against it many times in matters great and small. His whole life had become an unending war, a continuous succession of intermittent battles within himself. By now he knew and recognized the real Adversary. It was fear, jealousy, insecurity, possessiveness, self-importance, self-righteousness, selfishness—or rather these were some of its many forms and disguises. Behind them all, expressing them all, there was Ego. It was ego that told him he was a separate being living isolated, unconnected and helpless in an oceanic universe in which he must struggle every moment to survive against and even at the expense of others, to carve out for himself some safe territory and modicum of security, to acquire the power to protect himself, which could only be done by dominating over those around him. It was ego that urged him to seek the sense of enjoyment that issued from being more important and successful than others, demonstrating one's superiority, having more than they had, achieving more than they achieved, knowing more than they knew. He knew the adversary well enough in himself to recognize it in other people.

Dan always reminded himself of what he had learned in *The Book*. The problem was in him, not in others. The ego of other people came to act and impinge upon him only in the measure that he lived in and asserted his own ego. That was the spiritual mechanism, the secret formula that revealed the *marvel* of life. Life, as *The Book* said, was only a cosmic dance of Spirit seeking to manifest itself in an evolutionary progression. Every dancer requires a partner. Then how could the One dance? It could dance by becoming the Many and orchestrating the movements of each of its million selves to precisely coordinate with those of each of the others in order to at all times maintain the harmony of the underlying oneness, no matter how rapid, complex and violent the movement of its steps. His ego participated in a cosmic dance of all the egos with whom he came in contact—colliding, bruising, hurting, offending, dominating, submitting, regretting and rejoicing successively and sometimes simultaneously—until ego gave way in the infinite expansiveness of spiritual individuality so that the psychic behind it could come forward for a diviner dance of soul with soul.

As with individuals, so with tribes, classes, castes and nations. They too had their own narrow egoistic identities which they struggled to maintain and assert against others. They too participated in the cosmic dance, bumping up against each other, pushing, shoving, rising, falling, hurting and being hurt, aggrandizing themselves at the expense of others and in turn serving as fodder for the self-aggrandizement of their former serfs, slaves and subordinates. Here too he had come to perceive the cosmic mechanism at work orchestrating the movements for the progress of each and the evolution of all. He now understood what *The Book* meant when it said:

Every problem has a solution. The solution to every problem lies within the problem itself.

He had been baffled by this statement when he first read it. Later he had been frustrated by his inability to apply it practically to resolve the problems confronting him in his own life. Occasionally he had succeeded, but was not sure how. Often he failed and was not sure why. Now both the successes and failures came back to him in a progression of rapid flashes of consciousness—more in the form of conscious knowing than as formed thought. He now understood why intractable problems such as Palestine persisted in spite of the sincere efforts of so many people on so many occasions. The solution lies within the problem and the *problem always lies in us*, but the human tendency is always to discover the problem in others, to project it on our adversaries. That was the real *problem*. If life is a perfectly orchestrated cosmic dance than every problem that comes to us from others is a reflection of a corresponding element in our own nature, either something of the past that needs to be transformed or something of the future that needs to be born. In either case it requires a pressure and a circumstance to aid that transformation or that birthing.

An aphorism he had read in *The Archives* suddenly came to mind and made him laugh to himself:

God created the sense of sin so that human beings could recognize the limitations of their own consciousness and overcome them. Man outsmarted God. He has employed that capacity to discover the sins in others, rather than knowing them in himself.

There was a cosmic humor in that thought which was liberating. It gave Dan the freedom to laugh at his own folly. The solution to any problem lies not in changing others or waiting for them to change, but rather by changing the corresponding element in oneself that attracted or created, sanctioned or necessitated that problem in the first place. For every external force, influence or event that impinges on our lives, there

must be a corresponding inner supporting element. The solution lies in finding and reversing that, not making other people change. If other people are adamant or insistent, defensive or aggressive, selfish or blind, impatient or intolerant, that characteristic could not and would not have the capacity to touch our lives and consciousness if there were not something corresponding within ourselves. What comes from outside comes with a mission and a purpose—regardless of the conscious intention that motivates others. It comes to liberate us from our own limitations, to help us become more perfect in our own consciousness. That is the knowledge needed to solve any problem of any type on any scale. According to *The Book*, when consciously applied, that knowledge has the power to accomplish in an instant what might otherwise take a seeming eternity of years, lifetimes or generations to achieve. Thus, the Berlin Wall crumbled virtually overnight.

Without that inner corresponding element, even the tiniest problem could not exist. For the existence of even a single, infinitesimally small problem that is not related to our unconsciousness is an indictment of the whole cosmic scheme. It is to declare the world as *maya*, an illusion, or worse still as a hell or purgatory in which what happens to us is unrelated to what we are and what we can become. It makes of the world an existential nightmare of meaninglessness, a real chaos or quantum world. Whatever the ultimate truth may be, Dan was absolutely positive of one thing. The world was no illusion, no hell and no nightmare. He knew and felt from the deepest core of his inner being that it was a progressively unfolding miracle and a marvel.

Dan suddenly arrived at the end of his thought and became conscious again of what was around him. Stearne was sitting quietly opposite to him gazing gently and patiently into his eyes with a benevolent expression and a hint of a smile. Dan felt as though the professor had been seeing into Dan's inner being through his open eyes, the lens of vision turned inward for a few moments, permitting them both to look on things that were normally beyond perception. The thought of being seen for what he was did not disturb him. It was not a violation. It was a shared intimacy. He knew he owed his heightened sense of awareness to Stearne's presence and his insights. He liked the idea that someone else, someone he could trust implicitly, knew as much or more about him than he knew about himself. It meant he did not have to rely entirely on himself anymore. There was a greater consciousness to support him, even if the aspiration and the decisions would always be his own. Perhaps, he thought, the essence of the guru-disciple relationship is not a sharing of knowledge or technique or method at all, but a sharing of consciousness between two beings at different stages of the same ascending journey.

147. Disciples

Levin too was sitting motionless, apparently lost in his own thoughts. Dan had absolutely no idea when Stearne had stopped speaking or for how long they had been sitting that way. A slight sense of embarrassment came over him. He smiled at Stearne who smiled back and said, “Are you ready to resume?”

Dan nodded and the professor continued his narrative. “As I said, Theon failed and *The Book* was printed. But that does not mean his aspiration died with him. Theon did not create an organization in the sense the Theosophists and many others did. But, nonetheless he had a group of followers dedicated to fulfilling his mission who succeeded him and still strive to do so up to the present day. Individually they may lack his power of consciousness and will. But collectively they represent a most formidable Adversary. They are not anxious to be known. Quite the contrary. They have only one goal, to obtain and possess the power of *The Book* entirely to themselves.

“Now it really does not matter what name these people go by, but I can make an educated guess about who is behind the attack on MAI. Among the many organizations that sprang up during Theon’s life, there was one known as LAP, *Librum Arcanum Potestas*, the Order of the Secret Book of Power, whose members considered themselves his direct disciples. This particular group based itself on a prophesy about the appearance of a book which would carry with it the power for divinization of life on earth. While most societies were anxious to generate faith among their adherents regarding the authenticity of their doctrines by tracing them back to earlier traditions, this particular order rejected that means of proof. They argued that past belief was in itself no proof of present validity. Instead they insisted the truth of their teaching must be judged by its efficacy, its power. The prophesy proclaimed that this book would reveal itself and manifest its power beginning in 1914 and with progressively heightened intensity and wider reach in a sequence of years.” Pausing to withdraw a small notebook from his coat pocket, Stearne read: “1914, 1917, 1919, 1921, 1956, 1964, 1968, 1971, 1989, 2000, 2004, 2008, 2012, 2021. Note the sequence falls into unevenly sized and unevenly spaced groups. First five dates between 1914 and 1921, then five more from 1956 to 1971, a single year 1989 and then four more years starting with 2004.

“Now, if you recall the discussion we had in my home the first time you came to call on me, the first three dates in these series correspond exactly with the years in which *The Book* first made its appearance and the second set of three dates correspond exactly with years in which we have first-hand testimony of particular individuals with no prior knowledge of *The Book* that they had seen it or possessed it for some time during these same years. Equally important, there have been no confirmed sightings of *The Book* in any years other than these.

“Since our first meeting fifteen months ago, I have been trying to verify the continued existence of this group and at the end of December I obtained what I consider conclusive evidence that my suspicion was correct. It has even occurred to me that my effort to detect them may have been the reason for their precipitate action on the nineteenth. You might say that my curiosity prodded them into it. If I am right, I am afraid that neither the FBI nor any other intelligence organization is going to do us much good. If I explained to you the means by which I verified their existence, you would probably just laugh. The FBI most certainly would. That is a main reason for the Order’s capacity to survive so long. No one can touch them because no one knows they exist.

“Now, so far I have said nothing that suggests that the Order would resort to violence in order to fulfill their objective, which means to get their hands on *The Book*. In my view, if rightly understood, nothing in *The Book* can serve as a justification for violence. Unfortunately, in my experience that has never been an obstacle to human beings seeking to justify their acts. Human resourcefulness can interpret or pervert any truth to suit its own purposes and inclinations. I am speaking generally about human nature. However, speaking specifically about the people who belong to this order, I believe they will do anything and go to any length to obtain *The Book* and possess it *exclusively*. That is their one mission in life, a holy mission in their view. I have no doubt that they would be willing to sacrifice lives, if necessary, to achieve it, though they may not wish to unnecessarily attract the attention that would result from such an act if it could be avoided.”

“So you see,” Stearne continued, “knowing who our adversary is may not help us very much in this particular instance. We must accept the fact that Inspector Byrne and his department can do very little in a situation like this, even if we could provide them with a substantial lead regarding who might be behind this whole affair. As he said, even in cases of industrial espionage there is little he can do. So I am afraid that we have no alternative but to come up with our own strategy.”

Levin pointed out that they were working against a deadline without knowing precisely what that deadline was, so they could never be sure when time might suddenly run out. The people who broke into Oxford Security, organized a thousand-pronged attack on *Accomplish*, kidnapped Limpia and managed to break into a high security safe in a high security building were obviously opponents to be reckoned with seriously. Their attempts so far had failed and they had already threatened that next time there may be a higher price to pay. The problem is MAI had no way of knowing when that next time would be. The next threat could come even tomorrow.

“I agree with you, Kurt,” Stearne said. “Our first priority must be to stall for time. We have to buy some time. So what are our options?”

Levin suggested that if the police launched an intensive investigation of MAI staff, the efforts of the intruder to escape detection might temporarily place him on the defensive. Stearne agreed it was a possibility, though they could not be sure it would not have the very opposite effect. They may want to hasten the process of confronting MAI with fresh demands before the police had time to figure out who was behind the attack. Dan pointed out that so far few people in the company knew about the break-in or felt it touched their lives. A sweeping police investigation could have a major impact on employee morale.

“That’s true, Dan” Stearne said, “but which would you rather have, a police investigation or a bomb threat?”

Dan was startled by the professor’s question. Did he really believe these people would resort to violence of that type?

“What would you do, Dan, in their position?” Stearne asked. “If you wanted to force management to give up *The Book*, what would be the easiest, fastest way to do it? I’ll tell you what I would do—if I were a radical fundamentalist, that is—I would threaten MAI with the worst possible scenario. They have already tried a more moderate approach by going after *Accomplish* and found it did not stop you. If I were them, I would threaten the people. I would not necessarily have to carry out the threat. It would be enough that I made you believe I was prepared to do it. The fact that they did not hurt Limpia is encouraging, but it only means they were not eager to commit violence, if it was not necessary. So our first objective has to be to persuade them that there is an alternative way for them to achieve their objective. The challenge for us is to find one before we are left with no other choice.”

Levin proposed to tighten security measures at the company and at the homes of Ray, Vinay and Anya, and Stearne himself. Then he said he was in favor of encouraging the police to conduct an intensive investigation of employees, but with a twist. “Instead of going after the most likely candidates, what if we go after a small group of people whom we know for a fact are innocent, but against whom we can fabricate a rational justification for suspecting them. That would isolate the witch hunt and help control the impact on employee morale to some extent. We can select people whom we are so sure of that we can afford to take them into confidence and ask them to go along with the show. I am thinking of people like Bill, Lauren, Jean, Allen Shores, and Ed Chow. They are all people with access to the executive floor. They had all been inside the Cloister at one time or another. Most important of all, they were the only employees, apart from Limpia, who we are sure know about the existence of *The Book*, so they have already been taken into confidence. Based on these criteria, the choice might appear plausible even from the intruder’s point of view. If I were the intruder and I thought that the investigation was moving away from me, I might be willing to wait until the investigation cools down before acting again, because if I act now, I would be exonerating the known suspects and forcing the police to look elsewhere. Perhaps we can buy a few weeks that way.”

Dan liked the strategy as the best of the bad options. He also pointed out that it was at best a temporary expediency. They would still have to expect another threatening approach sooner or later. Stearne agreed, but was in favor of adopting Levin’s proposal. “At least it buys us some time to think of an alternative. Time is precious just now. I am in favor.” So it was agreed.

Meanwhile, the three of them agreed to keep knowledge about the threatening note and their fears about another possible attack among themselves, so as not to unnecessarily heighten the alarm among their partners. But they would have to provide Ray, Anya and Vinay with a plausible explanation for the personal investigation of key employees. They decided to attribute as their motive the desire to distract Bryne’s attention from further questions about *The Book*. Levin agreed to accept responsibility for briefing Bill and other employees. Dan agreed to speak with Ray, Anya and Vinay. Stearne said he was studying *The Book* for clues to a permanent solution and would focus all his time on that until the situation was resolved.

From that moment onward, Stearne rarely left his study in the Cloister. He worked from early morning until late each night for the next seven days, insisting that he not be disturbed, politely refusing all

offers of assistance, and apologizing to Dan for monopolizing use of *The Book*. Rosa came daily with a fresh change of clothes and some of his favorite dinner dishes, then complained vocally that he refused to eat properly at a time when his body needed the nutrition to support his strenuous effort. He jibed at her and tried to mollify her anxieties, but she was completely immune to all his tricks.

148. See No Evil

The police investigation of MAI was completed on the twenty-eighth and, as expected, did not result in any leads. It bought them four more days' time; but without a permanent solution, that would hardly make much difference. Nevertheless, Stearne seemed to be satisfied with the result and congratulated Levin more than once for coming up with that ploy. As if to prove that their adversary had only been waiting for the investigation to be concluded, the threat they had been waiting for came the very next day, but in a manner that no one had expected.

Early on the twenty-ninth morning, Berkeley police received an anonymous phone call claiming that explosive devices had been placed on campus in Cory Hall and across the street in Soda Hall. Both buildings were immediately evacuated and a bomb squad rushed to the site. The squad did find two live explosive devices set to detonate on timers at 11:30 am. The bombs were dismantled, but all classes on campus were suspended for the day while a thorough examination was made of the two buildings and other nearby buildings.

News of the incident spread rapidly through Berkeley. MAI employees who had brothers, sisters and friends attending the university received phone calls informing them almost immediately. The news gradually trickled up the office hierarchy until it reached Bill, who passed on the information to Levin without really knowing why he did so. Levin did not immediately catch the connection, but Dan did since he was far more familiar with the UC campus. Cory and Soda were both buildings belonging to the Computer Science Department. They were both situated on Hearst Avenue, less than a mile east of MAI's own offices. Dan concluded that the incidents on campus were a direct message to them. If they were correct, they would probably be contacted by LAP or whoever else was behind the incident very shortly.

When they shared these suspicions with Stearne, he fully agreed with their conclusions. He said he felt near to coming up with a permanent solution to the problem, but he needed another 96 hours to complete it. Stressing that it was essential that they avoid interaction with LAP during that period, he asked Dan to take the other four partners and leave Berkeley until the following Monday. "That way they cannot contact you, even if they try. But they should not suspect your motive for leaving. We must let them conclude that you failed to connect the campus bomb incident with their threatening message. They probably hoped to frighten you sufficiently without leaving any evidence that such a threat was really connected with MAI. Once they understand that their indirect message did not get through, they will make their threats more explicit. So we need to create a pretext for your departure and I believe I have a good one. There is a major AI conference this weekend in Santa Cruz. Take Ray, Anya and Vinay to the conference. Leave Saturday morning and come back Sunday night. By that time I am hopeful of being ready with a solution. Dan and Levin agreed to the plan and then persuaded the other three that they should use the occasion of the conference to get away and spend some time together. Anya, Vinay and Ray all welcomed the idea of some fun for a change to break the unremitting tension of the past few weeks.

That evening Stearne looked more relaxed and cheerful than Dan had seen him in weeks. During dinner, the three of them discussed the chain of events over the past few years since the first near accident in front of the State Department thirty months earlier. Dan could understand people's greed for money, possession, power and influence. Everyone felt those things at some time in some measure. But it still amazed him to think that people were willing to resort to murder, even the threat of mass murder. It was the one thing he found most difficult to reconcile with the knowledge presented in *The Book*. If the original source of all creation is an infinite and eternal Existence, Consciousness and Bliss—*The Book* sometimes used the Sanskrit term *Sachchidananda*—what could possibly explain the impulse to evil and the willingness to murder? How could those two extremes of existence be reconciled?

"That is the ultimate question in philosophy, Dan," Stearne said sitting back in his chair with a satisfied expression on his face after finishing a second portion of Rosa's Reversal. "Religion and philosophy have tormented themselves for ages over that question and come up with every variety of resourceful answers. Buddha did it by declaring the whole universe a terrible mistake, a wheel of suffering, for which the only remedy is a return to nothingness. Shankara did it in his non-dualistic philosophy, *Advaita*, by declaring the whole world is an illusion and advising us to get out as quickly as possible. The three great Abrahamic faiths based on the Old Testament declare that evil is personified as Satan, the fallen angel who defies God's will, or exists as an inherent perversity deep in the human heart. The essential difficulty with all these explanations is that they effectively undermine the very concept of monotheism they purport to support. No matter how clever the explanation they may give, they all pit God against Devil, Good against Evil, Truth against Falsehood, Existence against Illusion, and demand that man choose between them.

“I confess that I have always found these explanations unsatisfactory and at variance with my deepest intuition about life and reality. It was only when I read *The Book* that I found a truly coherent and satisfying answer. Yet, for others, *The Book's* explanation might be even more difficult for many people to comprehend or accept. We all find the answer we are looking for that is best suited to our own needs, temperament and consciousness. *The Book's* answer satisfies me deeply. It resolves the problem by stating that there is no such thing as evil. Now that is a pretty hard assertion to swallow on the day we just heard about a failed or intentionally flawed attempt to blow up two buildings occupied by hundreds of innocent students. I don't mention the professors, since establishing their innocence has always seemed to me a more difficult proposition.

“Evil is a fact of life that we confront directly or indirectly every day in our study of history, in contemporary events that we hear or read about, occasionally in our own experience and, for the sincerely perceptive, in our own consciousness. For anyone who has ever honestly looked within himself—I leave aside the rare saint and person of pure goodness—has seen the seeds of evil in their own consciousness. I am not speaking of the everyday, trivial sins of greed, lust or envy that religions make such a fuss about in order to establish the guilt of their followers and keep people under their thumb. I am speaking about the capacity for ill-will and hatred, the will to harm or will for harm to other people, no matter how cleverly it is cloaked by self-justifications or a missionary zeal to destroy God's enemies. The capacity to harm others for one's own gain or simply for the delight of harming them is the seed of evil in human consciousness. It is undeniable.

“So how then, do you ask, does *The Book* reconcile this undeniable impulse with its declaration that evil does not exist? It does so in two fundamental ways. It begins by providing the first totally coherent explanation of how and why evil can exist in the first place in a universe created by an omnipotent and omniscient Divine Being. If you recall, Dan, we have already been over much of this territory in one of our earlier dinner discussions about the origin of Falsehood. The origins of Falsehood and Evil are the same. They both find their source in the existence of Ignorance and Ego. In other words, the very moment you create a world in which consciousness is involved or buried in ignorance, and emerges progressively in a divided being that believes itself separate and independent from the rest of the world, i.e. ego, then both falsehood and evil are inevitable results. Put prosaically, if I wake up one morning in a world surrounded by strangers who I do not know or recognize as aspects of myself because I do not know my own true identity, and if I discover that in this strange world I have to defend myself, protect myself against so many kinds and numbers of potentially threatening beings and forces, and if at the same time I have to find a way to survive and thrive by conquering and devouring other beings, physically for food, socially for a dominant position, mentally for self-affirmation and a sense of my own self-importance, it is at least natural, if not inevitable, that I may resort to methods that appear rather ungentlemanly, nasty and even dastardly to a more enlightened and civilized intellect. These tendencies are a natural, even if undesirable, result of my ignorance and egoistic identity.

“In other words, falsehood and evil exist for the same reason that ignorance exists—because the one infinite Consciousness has manifested itself as universe through a process of involution in which it consciously limits and loses itself in self-absorption within the forms which it creates out of itself, so that it may have the joy of self-discovery in a progressive evolutionary unfolding of its infinity in the terms of a finite universe. As for the reason that the One chooses this apparently imperfect method for manifestation — This process of creation by self-conception, self-limitation and self-absorption—that is another question worthy of another dinner on another day with another of Rosa's fabulous desserts. Let us not go there now. I will only say two things on the matter tonight. First, according to *The Book* it does so for the sheer Delight of self-experience. Second, and this I consider an even more authoritative explanation so please listen carefully. I have not been able to figure out any other way in which an infinite, omniscient and omnipotent oneness could create a universe of individual forms—that includes the three of us—each with its own individual center of consciousness, its own aspirations, its own will, its own emotions and its own self-experience. In other words, I consider that it is only through a great act of condescension and benevolence by the almighty Spirit that I, Joseph Stearne, and you, my friends who I love dearly, even exist. I admit that greater minds than mine may see no difficulty for the One to do anything it likes, but I believe that absence of difficulty in most cases simply reflects an absence of serious thought on the matter. At least that is certainly not an accusation that anyone can justifiably apply to the author of *The Book*.

“I hope I make myself clear, though I fear Rosa's dessert may have gone to my head, but I have yet to come to the most crucial part of my argument. For if you have not been utterly bewildered or totally bored by what I have said thus far, you would have noted a minor but significant inconsistency in my argument which was perfectly intentional. To save you the embarrassment of asking and the pain of having to endure a repetition of the whole affair, I will summarize that inconsistency and then proceed to make it disappear. The problem can be briefly stated this way: According to *The Book*, falsehood and evil are a natural consequence

of the process by which the One manifests itself as the Many. However, elsewhere in *The Book* it states that evil does not exist. Barring a resort to Shankara's *maya*, how are we to reconcile this apparent dilemma? Fortunately, we don't have to, because *The Book* does. It does so by explaining that the perception of evil arises only because and as long as we live in the egoistic consciousness. It is the ego that sees and experiences evil, not the spiritualized individual who lives in his psychic consciousness of unity with the Eternal and Oneness with all existence.

"Now that might sound like a small concession to mere mortals like you and I. It amounts to saying that get out of your ignorance and ego and you will no longer have any problem. Personally, I can accept it as a more comforting theory than the one that says I will be plagued by the devil until by some unknown process I decide to be good and worthy of eternal life in heaven. But that is merely my personal preference. As an overall panacea for humanity, I admit it is not entirely satisfactory. Fortunately, *The Book* offers something far better, which I consider the single most important and liberating idea in the whole librum. For this single idea, I would gladly read a thousand times the thousand pages of this book—which amounts to saying I would be willing to read approximately four hundred fifteen million words, if I could find the time. If any one has ever read that many, I sincerely doubt they have come across a more valuable idea than the one I am about to share with you. Enough drama and suspense, you say? Very well.

"*The Book* resolves the dilemma in the simplest and most rational of manners. It tells us that our perception of evil only exists so long as we require evil to help us emerge from the egoistic ignorance in which we are involved. In other words, evil is not an unpleasantness to be endured or an error of God to be excused. It is a Divine instrument to aid us in discovering our own divinity. Once we understand that, once we recognize that, once we come to perceive the reason for the impact of evil on our lives, we possess the key to exterminate it—not by fighting on God's side but by becoming God in our own consciousness. In sum, the evil that comes to us from outside—and I do not for a moment deny that it looks, feels, tastes and resembles evil in every respect—looks, feels and tastes that way only to our egoistic consciousness that needs to make progress and needs evil as a mirror to help it make that progress. This is not new knowledge to the world, but it is a knowledge that has been lost to the West. It was expressed succinctly more than two thousand years in this passage from ancient Tamil Sangam literature,

Good and evil do not come to you from outside.

"Now just one further—and for tonight, at least—final step. When we possess this knowledge—not as a mere mental or intellectual formula—but when we are able to perceive the truth of it in our own lives, there is only one more step we need take to conquer. We have only to look beyond the appearance of evil, look behind the horrible and ferocious veil, and we will discover the *Marvel* waiting to reveal itself. That is the essential message of *The Book*. When we are able to do that, we discover that the thing we found so abhorrent, horrible, detestable vanishes. Whether it vanishes merely from our own personal lives or from a wider sphere of human life depends on the power of personal consciousness we have acquired, a power that is progressively enhanced each time we succeed in this attempt. Then we discover that there is no ultimate sanction for evil in the universe, except for our attachment to it and our desire for an enemy to fear and fight, our need for a devil to vilify.

"During the past two years you have been subjected to more than the typical dose of ill-will. By some power I can only call Grace, you have emerged from these attacks on life, property and work without serious damage. But I think if you reflect back, you will discover that this experience had been an essential spur for your greatest outer achievements and deepest inner accomplishment. The treachery of Tony Preston was directly responsible for bringing you, Kurt, to MAI. I find it difficult to imagine this company without you. The wanton destruction of *Accomplish* by pernicious data pollution became the means to liberate you from Oppenauer's crushing grasp and the fertile soil for the emergence of *UNIAC*. Had it not been for the last break-in attempt at Dan's apartment, I might never have had the pleasure of your acquaintance, a loss that I would profoundly regret.

"It requires objectivity, insight, sincerity, vision and courage to discover the secret of life - most particularly, courage. Those that have the courage to look within themselves and search for the sources of the inner darkness that generate the need for the evil that comes to them from outside are qualified for this knowledge. Those that persist in condemning others, the world, life and God for their sufferings and those of their fellow man may find this explanation unsatisfying, heartless and abhorrent. I respect that judgment, even if I do not agree with it, for it is extremely difficult to look upon the external appearance of things without concluding that something is terribly wrong with the world, and since few people have the insight to see deeply within or to grasp the wider evolutionary movement, any accusation may seem justified. *The Book* does not offer a rationalization to the world. It offers a key for those who seek to eradicate evil from

their own consciousness and life. By that effort, I believe, they do more to free the world of this scourge than all the loyal soldiers fighting on God's side."

Pushing back his chair, Stearne rose from the table and bid them goodnight with these parting words, "I promise, gentlemen, after tomorrow not to subject you to another outburst of this type and duration for quite some time. You have my word on it. But in exchange for that magnificent gesture on my part, I ask you to bear with me and grant me one request. Grant me the pleasure of your company for breakfast up on the hill tomorrow morning and persuade your dear associates to join us as well."

149. The Five Elements

By 8 am the next morning, Dan, Anya, Vinay, Ray and Levin had arrived at Stearne's home, both pleased and intrigued by his invitation. Bill and Lauren remained at MAI to carry out the last stages of the charade with the police. This had only been the second time in fifteen months that he had extended a formal invitation to them all. Momentous consequences had issued from their first invitation to the barbecue. The professor had talked non-stop the whole evening. He had explained the significance of multi-dimensional inversions and how it could be incorporated into AIS⁹ to make a quantum leap over earlier versions. He had revealed to them the hugely lucrative opportunity in investment banking, which had already generated billions of dollars in revenue for MAI. He had gifted Anya Ramanujan's notebook. He had provided a crucial hint for solution of the Palestine problem, though they had not yet found an opportunity to exploit it. He had shared with them profound insights he had derived from *The Book*, insights that even Dan had been unable to arrive at through his own prodigious effort. All this he had done though a bantering monolog over a casual dinner without the slightest pretension or hint that anything significant was taking place. It was only natural that they came to the suddenly proposed morning breakfast with at least a mild degree of expectation.

If they had learned one thing over the past months about Joseph Stearne it was that he was very difficult to anticipate. That proved to be the case once again that morning. For, during the whole breakfast, he exhibited no inclination to speak about business at all. He did not offer them a single new idea, no secret formulas, no hugely profitable business opportunities. He simply wanted to talk about them and the significance of their work, and he did so in his own characteristic manner through his two favorite subjects—philosophy and history.

“Let me start with the philosophy, so we dispense with the ballast at the beginning and can travel more lightly at the end,” he began. “Are any of you acquainted with the ancient theory of the five elements?” he asked casually as Rosa cleared the dishes and served heaping portions of brightly colored fresh fruit topped with whipped cream and almonds. Stearne had absolutely banned any reference to dietary rules or nutritional theories at the dinner table. He said it was bad for digestion.

“I recall a reference to it in *The Book*,” Dan replied, “but frankly it seemed a bit out of place and archaic in the light of modern scientific knowledge about the nature and composition of matter, so I haven't given it much attention.”

“Beware of first impressions, Dan. That casual—I might almost say negligent attitude to the acquisition of knowledge so common these days—led you to overlook the one passage in *The Book* directly addressed to the five of you. I would even say it was written for you.”

The five of them looked at the professor in bewilderment and he responded with a bemused expression followed by mild laughter. “I am quite serious, really,” he said. “That passage is about you. It uses an ancient symbolism to deliver a profound truth of life—of your lives. The passage comes at the beginning of the chapter on Conscious Force. It explains the process by which pure, intangible, subtle Consciousness manifests itself through five stages to create the material world. Each stage is represented by one of the five elements and one of the five senses. The process it describes is applicable to all creation in all planes. It is the universal process of creation. Elsewhere *The Book* describes it from the perspective of the Infinite Consciousness that initiates. Here it describes it from the other end—from the perspective of the material result that issues from that process. The process begins with pure Consciousness or Spirit and ends with Matter.

“Imagine the initial condition as an infinite ocean of energy at rest. In the first stage, a wave of vibration passes through that ocean. That is represented by the element ether and the sense of hearing. That is why all spiritual traditions proclaim that creation begins with sound—the Word or AUM. That is the first stage of manifestation. I am well-aware that modern physics has heartlessly dispensed with the concept of ether as an unnecessary encumbrance. But I humbly submit that what appears unnecessary to the physicist trying to understand the material world is absolutely essential to the Consciousness that has created it—as essential, as Dan has been to the creation and success of MAI. There may be many who wonder what he does spending all his time up in the Cloister in meditation, but none of us can be in doubt about his creative role. That, in my understanding, is why *The Book* came to him. He represents the stage at which the primal movement begins that leads to all consequences—momentous consequences for not only you, but for the world in this instance. Without this principle, this stage, this element, nothing would ever be created. It is the foundation.

“So a vibration in the nebulous ether of oceanic being or consciousness is the first stage of manifestation. But by itself, it can accomplish very little—no offense, Dan, I assure you. It is like a wave falling upon the sand, even though there is as yet only ‘proverbial’ sand at this stage in my explanation—a mere wave or current of movement. Now in the second stage, several of these waves come into contact and interact with one another to form a play of vibrations. Listen carefully, Ray, this is where you come in. Creation means generation of form, and form requires contrast, differences and distinctions. How does pure infinite consciousness create forms? It releases vibratory waves of energy that make contact with each other, forces colliding, like two waves in the ocean meeting head on to generate a magnificent though ephemeral image for a Japanese painting. This is the stage represented by the element air and the sense of smell. It is a good description for the mental plane in which ideas are generated out of the ether of mental consciousness. These ideas emerge, apparently out of nothing. Once set in motion, they come into contact with other ideas, clash, create waves and spew forth many ephemeral droplets of thought that quickly lose their form and melt back into the ocean of mental consciousness. I like to think of this as the stage when philosophy was born—the first of all sciences by this reckoning, since prior to this stage there is very little to study, though I am sure the physicists will vehemently deny us that position. It is the stage of unembodied ideas or idea-forces. I do not use the word unembodied in a pejorative sense, but only to indicate they have not yet acquired the capacity to materialize. This is the creative stage at which consciousness manifests as formed ideas, which become the seeds for all that subsequently takes material form. Ray has played that role marvelously at MAI, constantly extending the reach and application of thought to new fields of work.

“All this is wonderful, but it is insubstantial and impermanent. We need to add a sustaining principle which holds things together. Now, you may ask, where are we to find such a sustaining principle and from what will it emerge? The answer is very simple, as all good philosophy should be. It emerges from the clash of forces itself. And what emerges is the element of fire and the sense of light. How can fire and light emerge from the clash of forces, you ask? Because this clash of forces is nothing other than moving waves of pure consciousness. Consciousness consists of Knowledge and Will. Light is the expression of knowledge. Fire, heat, electricity and all other forms of energy are expressions of will. The fire that emerges from the clash of forces is an inner fire. Spiritually, fire is aspiration. Materially, it is the release of energy involved within the forms, like the spark created by striking two stones together or the fire generated by the combustion of organic material or the infinite energy released by nuclear fission. Light and fire provide the spark that gives life and vitality to ideas. I suppose it is unnecessary to ask you where the source of that fire is at MAI,” Stearne said as he turned to Anya with a brilliant smile. She laughed and everyone else did too. “Functionally, it is Anya’s task to embody concepts in operation processes that direct the flow of energy for productive purposes. Psychologically, by her spark she gives life to us all.”

“So far we have created heat and light out of the movement and clash of the ether, but we have nothing tangible or permanent to show for our prodigious efforts—something like the net result of a brilliant lecture in philosophy. We may feel inspired and even ignited for a moment or two, but walk away empty handed. For permanence, we need to discover a principle that will attract these impermanent forms together so that they can coalesce into more stable formations. We need also a counterbalancing principle of repulsion so that everything does not mass together into a single, ungainly and unexceptional clump. This principle of attraction and repulsion is symbolized by the element of water and the sense of taste. We see it everywhere in nature from the attraction and repulsion of subatomic particles to the gravitational forces that benevolently guide the movement of celestial objects through the oceans of non-existent ether. We see it also in the most remarkable of its manifestations, as the force of attraction between people that binds us in consciousness to one another. This principle manifests at MAI as the power of human relationships—relationships between the partners as well as between the company and its employees, customers and its contractors. Vinay is the epitome of that power at MAI, the power that binds countless individuals through an attraction of mutual understanding, enjoyment and material benefit into a living and vibrant commercial organization.

“Finally, we need a principle capable of generating stability and permanence in this nebulous, ethereal, evanescent, ebb and flow of forces interacting with each other in a perpetual dance moved by the charming allurements of attraction and repelled by oppositions and incompatibilities. In a word, we need cohesion. The principle of stability and cohesion is represented by the element of earth and the sense of touch. It provides the strength, resilience and capacity for endurance necessary for all accomplishment. As I understand it, that is what Levin has brought to MAI. Without him, I doubt very much whether the company could have survived all the pressures, pitfalls and attacks to which it has been subjected. He has laid the firm foundation, grounded it firmly to withstand the quakes thrown up from below as it rises tier by tier to higher levels of accomplishment.

“Now, I suppose you may be wondering why I have gone to such great lengths and taxed your patience so unreasonably to depict the relationship between abstract philosophical concepts in *The Book* and the roles and relationships of the five of you at MAI. Apart from the obvious and undeniable impulse to impress you with my wisdom and eloquence, I profess I had two additional motives. First, to illustrate in the most practical and personal terms the relevance of *The Book*’s knowledge to your lives. Second, and more importantly, to make more conscious and explicit to everyone here the significance of you five coming together for this enterprise.

“Over the years I am sure each of you has wondered about why and how you found yourself engaged in this apparently mad pursuit of the unknowable and impossible. I am trying to tell you there is a meaning and rationale behind it all. It is not chance or coincidence that brought you together. Although each of you is wonderfully gifted in your own way, no single array of gifts, no matter how brilliant they may be—even to the level of genius—is sufficient to accomplish what you are in the process of accomplishing. It is not a peak of perfection that is required, but rather a perfection of all-inclusiveness and all-encompassing comprehensiveness. For the knowledge you are giving expression to, is a knowledge of wholeness, a knowledge of oneness. That could only be done by a combination of shared aspiration and complementary capabilities. Manifesting infinity is no small order. No human being, no matter how extraordinary or versatile possesses the range, depth and complementarity of character and capabilities required for this enterprise. It requires a comprehensiveness and a wholeness that can only be created by a blend of diversity with integrity. I have tried to recount this morning in philosophical terms the essential and complementary nature of the diversity which you each bring to this effort. As for the integrity, that which attracts, unites and binds you to one another and to your goal, the only explanation I can give for your extraordinary success is egolessness. Ego destroys the underlying integrity of existence. The absence of ego, self-importance, the urge to dominate and possess makes possible the highest human accomplishments. That is a secret few have discovered, even though many have practiced it unconsciously. Here, for the first time in my life I have seen it emerging as a prevailing consciousness among a small group that enables work and life to expand to the borders of infinity. Its foundation is trust. Its name is love.

Stearne paused and turned to look at each of his guests in turn. His eyes glistened like deep reflecting pools about to overflow. Then blushing several times to restrain the rising tide of emotion, he reassumed a philosophical poise and added, “The genius for practical organization has made America the most prosperous and powerful nation. No other nation or people can match this nation’s capacity for material organization. But there is a higher power of organization beyond that, something infinitely more powerful which has yet to emerge in the world. I have often thought it might evolve in some other place, in Europe or Asia, where the culture of human relationship is far more advanced. But those traditional societies are encumbered by social traditions that prevent its emergence. I never dreamed until recently that this higher power might manifest right here in America, in Berkeley of all places, where it briefly showed its spirit and power during the days of the hippy movement. I see that power of a truly human organization, a living psychological organization emerging, feebly perhaps, but substantially, at MAI. That is what I mean by integrity. Whereas the physical organization binds by policy, rule and procedure and powers by efficient utilization of physical energy, the psychological organization binds by shared aspiration, harmony and complementarity and releases the true power of individuality. If that becomes a model for business in America, it will ensure this country’s leadership position far into the future.

“I trust you get the point of this morning’s philosophical escapade. I am trying to tell you that you are not here—by here, I mean at MAI,—you are not here by chance; and what you have created is not by luck. There is a reason *The Book* came when you four were together and that it brought Kurt at the crucial moment when you could not proceed, perhaps even survive, without his support. If you want a big, dramatic, fancy word for it, you can call it destiny. I prefer the more expressive phrase used in *The Book*, it is the *logic of the infinite*.

“Now, enough of philosophy. Let me proceed to history.”

Interrupting, Dan said, “One moment, Joe. I think you have forgotten something.”

Stearne gave him a quizzical look and replied, “Don’t you think that is quite enough philosophy for one morning?”

“Not quite,” Dan responded suppressing a smile. “You have spoken about all of us, but what about you? Where do you fit in? And, please, do not try to tell me there is no room!”

Stearne’s eyes sparkled enigmatically as he replied, “I regret, Dan, however prodigious my powers of creation may be, I am unable to fashion a sixth element simply for the satisfaction of fitting in, as you call it. I am not sure I ‘fit in’ anywhere. That’s been a problem my whole life. But if you insist on

accommodating me in the divine scheme of things, I suppose you can call me a catalyst. Every good reaction needs a catalyst to help it along. Yes, that is what I am. I am a catalyst. I kind of like the sound of that.”

“My own view, professor,” Dan continued openly smiling now, “if I am permitted to have a view in your august establishment, that is, I would say that you are the Consciousness that releases the vibrations of movement (me) which collide with each other (Ray) and release from within a sustaining spark of fire and light (Anya), which causes the attraction that brings forms together (Vinay) so that they may adhere to one another in a coherent and stable formation of creation (Levin). How’s that?” And all six of them burst out laughing simultaneously. “And may I add,” Dan continued in a pompous tone mimicking their host, “that I have never come across such an unusual embodiment of elements in any person before—such a remarkable blend of mysticism, philosophy, social idealism, love of life, dramatic flair, activism, capacity for conspiracy and intrigue, and practical knowledge of the under side of life which seems so vital for higher accomplishment. I sometimes think that you are the embodiment of all of us rolled up into one—the only really whole person I have every met.”

150. Recent History of *The Book*

“Enough philosophy,” Stearne said in a commanding tone. “On to history! A knowledge of history is essential for young minds to fully grasp the significance of ideas. Today’s lesson focuses on personal history—your personal history—but I need to start with some impersonal history to put my argument in perspective.

“Our lesson focuses on the years 1914, 1917, 1919, 1921, 1956, 1964, 1968, 1971, 1989, 2000 and 2004. I am sure Dan and Levin recognize the sequence, since we discussed it a few days ago. Let me briefly review for the sake of the others. According to the most reliable sources, writing of *The Book* began in 1914, the year WWI began. Volume I consisting of twenty-eight chapters was completed and seen in St. Petersburg, the year of the Russian Revolution. The first complete sighting of *The Book* occurred in Calcutta in 1919. That year the Treaty of Versailles was signed ending WWI and the League of Nations was founded, the first fragile and flawed attempt to establish a world government. It was also a year in which freedom movements either culminated or began, including the Estonian Freedom War, the Spartacist uprising in Berlin, the Turkish War of Independence, the first Communist International in Moscow, revolution in Egypt, and the war of Afghan independence. *The Book* was next sighted in New York in 1921, which marks the beginning of the Roaring 20s, the greatest economic expansion the world had ever seen until then. As I mentioned earlier, we have reason to believe that the knowledge of *The Book* was directly applied or, I should say, misapplied during that period leading to tragic consequences. It was also the year of Irish Independence, a fact that is linked to the subsequent role of *The Book* in resolution of the Northern Ireland conflict.

“Now let us shift to the modern era. We have no reliable information regarding where *The Book* was or who possessed it over the next three decades years, until it reappeared briefly in 1956 at the time of the Hungarian Revolution. The next confirmed sighting was in Berkeley in 1964, at the very dawn of the Free Speech Movement and the hippy movement, which symbolize the dawn of social and mental individuality in America. Next, Prague in 1968, at the time of the Prague Spring, the next concrete step leading twenty years later to the final eradication of authoritarian government in Europe. It was also the year when the anti-war protests exploded in America and elsewhere. That was followed by St. Petersburg again in 1971. Mainland China, representing 20 percent of the world’s population, occupied its rightful seat on the UN Security Council that year, giving the UN real legitimacy as a global organization for the first time. It was also the year the US went off the gold standard. Many conservatives mourn it as the end of real money; but I prefer to regard it as the year money was liberated from limitation to gold bullion, the revolutionary step that has ushered the world into unprecedented prosperity over the following three decades. This was also the year that Texas Instruments developed and Intel commercially launched the first microprocessors—the essential precursors for the birth of the PC. The first email messages was transmitted between host computers, the precursor of the Internet. Then, 1989 in Berlin, the end of the Cold War and the Soviet Empire. It was the same year that the idea of the World Wide Web was first conceived by Tim Berners-Lee. Finally, 2004, the year Dan found *The Book* in Berkeley.

“So much for general history. I said I wanted to make it personal. I have already related to you my experience in Budapest in 1956. Then again in 1964 a very close friend of mine at Cal spoke to me about seeing what I am now convinced was *The Book* just at the time the FSM began. Then in 1989 Levin saw *The Book* in Berlin and he has told us how it changed the very course of his life and launched him on the search that finally brought him to MAI. The last appearance was in 2004 when Dan found it. So you see between the six of us, we already have some kind of relationship with the 1956, 1989 and 2004 appearances of *The Book*. That leaves three dates unaccounted for—1964, 1968 and 1971.” Dan had been wondering what Stearne was trying to accomplish by going over facts they had already discussed more than once. The old man always knew more than he expressed.

“My father was an American journalist in Prague on that very day!” Ray said.

“Really!” Stearne replied with a look of surprise. “That is an amazing coincidence. Do you ever recall him mentioning *The Book* or a book under similar circumstances?”

Ray shook his head. “No, I don’t think so. He only used to speak of the sense of shock and bewilderment he felt when he saw the spirit of freedom being crushed before his eyes. He said it changed his whole life. That’s what made him apply for assignment with the *Times* in Vietnam and later as a backup at the *Post* on Watergate. I think it had an impact on who I am as well. Perhaps, I should ask him?”

“I think you should, Ray,” Stearne agreed. “He may be able to shed some additional light on what transpired at that time. If he knows anything about it, that would give us a link to all the years except St. Petersburg, 1971.”

Anya had not really been paying much attention to the discussion. Her mind kept drifting back to what Stearne had said earlier about her role as the fire of aspiration that ignited their group. She liked hearing that. Even though she knew it was childish and silly at her age, she was pleased being the center of attention and the professor had situated her right smack in the middle of things. But when she heard Stearne mention St. Petersburg again along with the year 1971, she was pulled back to the here and now. “My mom and Dad were from St. Petersburg,” she exclaimed. “They were married in March, 1971. And I was born that year too!” she said with a playful exclamation. “Is that significant enough for you?”

Stearne smiled broadly. “It’s significant to all of us, Anya, and to *The Book*, since you are the one who has been translating it into the algorithms of AIS. Dan wondered whether there was more than met the eye to the professor’s apparently casual references to the past. Did he know something that he wasn’t telling them?

“Not everyone!” Anya said. “What about Vinay?”

Stearne suddenly became flustered as if he had made a terrible mistake, then quickly recovered his normal poise. “My mistake, Anya. Of course, we have not found a link with Vinay as yet.”

“My father was at Cal in 1964,” Vinay remarked.

Stearne expressed a pleasant sense of surprise. “Then it is worth asking him whether he recalls anything about it.” Vinay nodded and said he would.

“Good,” the professor continued. “Now there is only one more point to note. That is the Millennium AI Conference in 2000 when all five of you came together and met each other for the first time.”

“Don’t forget yourself, professor,” Anya added. “You were the main attraction in Fort Lauderdale.”

“What about 2009?” Dan asked, closely observing Stearne’s face as he did so. “I believe that is the next date on the list. Do you have any idea what might be the significance of this year for *The Book*?”

An inscrutable expression came over Stearne’s face as he looked directly into Dan’s eyes trying to find out how much his spiritual son really knew. Then without responding, he shrugged his shoulders and his face became blank. The professor looked down at his watch and then abruptly remarked. “Oh, I see it is getting late. We better pack off to the office, otherwise the whole day will be over before we know it.”

“Is that it?” Ray asked with a look of confusion on his face, as if he had missed something. Dan understood what Ray meant. He too had the distinct feeling they were leaving things in the middle, half said and half complete. It was awkward and unsatisfying. He saw by their response that the others were feeling the same way, but no one wished to disappoint the professor by expressing it. Dan knew and admired Stearne too much to underestimate the importance of what they had discussed. He would just have to wait to find out what it all meant.

The professor turned to Ray and replied with an enigmatic smile, “I always advise my students never to draw final conclusions until you have completed your research and all the facts are in.”

Several weeks would pass before they understood the full significance of what had transpired that morning.

151. Eternal Romance

*Eternal adventure of emotions is romance.
Adventure for the unattainable is eternal Romance.
Romance is the eternal of the ephemeral. Love is the
eternal emerging out of the Infinite.
The soul flowering in life as love is Romance.
Romance is the soul's love for God in all souls.
Eternal Romance is Eternity in Infinity.*

Messages

Late that same evening Anya opened the door and walked into Stearne's study in the Cloister. It had been weeks since she found time to sneak upstairs to look in on him. These had been hectic, trying times for her, both professionally and personally. The break-in, the threats and the ever looming danger of more serious consequences had taken a toll on Anya as much as on any of them. She and Vinay were still at the beginning of their lives with so much to look forward to, so much joy yet to come. So much to lose. She had been raised to hide her fears rather than express them. That only made it worse. Stearne had tried to reassure her in so many different ways that everything would be fine, everyone safe. His jokes, his pompous displays of wisdom, his criticism and his complaints all had that single end in view. To distract all of them, but most especially her, from the imminent danger, and the drastic steps that he had contemplated to address it. But there was only so much he could explain now. She would understand soon enough. It was so difficult for him not to speak, but he had resisted the temptation, for her sake.

Then there was work. Stearne knew that the development of *Evolve* had been the most challenging endeavor of her career. It had stretched her in all directions, physically, mentally, and emotionally. Concentrating on the principles that constituted its structure had forced her to look more deeply into her own character and personality, into all the tiny crevices, hidden alcoves and dim passages of the past, where the multiple strands and threads of human nature wove themselves into an ever tighter, more entangled web of inflexible habits and uncontrollable tendencies. Creating *Evolve* had been like recreating her own personality, letting light and fresh air into stale, dark, unpleasant, long forgotten places. She felt much younger now than she had for years, less confident and sure of herself, less competent and assertive, yet more alive; weaker and more vulnerable in one sense, stronger and more courageous in another. She felt less steady when she walked, but moved more gracefully without even knowing it.

On this particular afternoon, what she felt most of all was exhaustion and a mild sense of depression that she could not shake. So she had simply walked out of the lab without thinking about it beforehand and headed up to Stearne's office for relief and solace. She found him at his desk sitting back in his chair. His desk was clean now. All the papers were gone. He had been staring out the window at the setting sun when she entered. Looking up, he gave her one of his warmest smiles and she felt a soothing wave of relaxation pass through her body, like knots being untied. She walked over without speaking and sat down on the sofa behind him so that he had to swivel his chair around 180° to face her. He immediately noted the lines of fatigue on her face and perceived beneath them the shade of disappointment and pain she was feeling. Then smiling he said, "So you have quarreled, I see."

Shocked by his remark, she replied, "How on earth did you know that?"

His eyes twinkled as he chuckled, "It is the only thing that ever robs you of your beauty. No matter how hard you work, how exhausted you are, how frustrating the problem you are working with, a certain glow remains beneath the paleness. But when you quarrel with him, it vanishes totally."

"How wise you are, old man. Is there anything you do not see or do not know?" she asked. Then seeing he had no intention of replying with other than a smile, she continued. "I don't know why it happens. I get so angry sometimes in spite of my determination not to. He can be so kind at times and at other times so blind, so irrational and thoughtless. It amazes me that one person is capable of such extremes."

Stearne couldn't suppress a smile. He could not help thinking that what she described was a perfectly apt description of her own behavior. "There are different sorts of rationality, my dear. The best of them are not very rational. Vinay's rationality centers around other people. Yours centers around yourself."

"Joe, if I didn't know you better, I would swear that you just called me selfish! Here I come to you for solace, and you deliver bitter truths. Isn't that cruel?" She tried to sound serious and offended but could not carry through with the pretense.

He laughed and replied, "Make up your mind. Do you want flattery and lies or wisdom? I am prepared to offer whichever suits you, but I cannot give you both at the same time."

She went over and hugged him gently, then returned to the sofa. Shaking her head in acknowledgement, she confessed, "I know Vinay is one of the least selfish people I have ever met. He lives for others. I admit I am selfish and self-centered. I often wonder how he ever was attracted to me."

"Now who is being cruel?" Stearne asked. "I see that the effort to develop *Evolve* has touched you deeply. It has made you more conscious of what is there inside and often the first touch of greater consciousness can be painful or disappointing. Later you will see it differently. The pain will give place to greater capacity for joy."

"What I said about myself and Vinay is true, Joe. I am selfish. But somehow we seem to fit each other. I don't understand how it is possible, but it's true. How can two people who are so very different fit? I never could figure out how profile matching works."

Stearne laughed again, more loudly this time, as if a private joke had been suddenly made public for the first time. "The truth is, my dear, romance can never be predicted by a profile, not even by AIS¹⁰, *UNIAC* or *Evolve*. Romance honors many rules of life, but its secret lies beyond all rules in the realm of freedom. Oh, the rules work well enough for choosing a compatible companion or marriage partner, but when it comes to romance, they have their limits. In the case you describe, the explanation is fairly simple. Maximum divergence within a similar range of character. In spite of your cruel self-analysis, I would say that you and Vinay are of a similar type. Vinay would do anything for anyone and give away anything as well, as I have seen him offer to do on more than one occasion in a board meeting. I've never seen generosity like that. It runs in his family. You, on the other hand, can no doubt be demanding and thoughtless at times, but when it comes to the important decisions that guide your life, you are the same way. His generosity comes from affability and culture. Yours comes from idealism and goodness. He relates to everyone as he would to his own family members. For you, the generosity comes from higher ideals. I know tomorrow you would both readily give up your shares in MAI. He would do it for you. You would do it for the world, if you thought that was right."

"You know," he continued, his face brightening into a glowing smile, "the very first time I saw you two, you reminded me of my favorite love story. It's very hard to find truly romantic literature. There are lots of novels about sex, courting and marriage, but very few about real romance. *Romeo and Juliet* is a tale of passionate, vital infatuation that cannot be sustained. One moment Romeo is in love with Rosalind, the next minute with Juliet, who is still nothing more than a child. *As You Like It* is the closest Shakespeare or any Englishman ever comes to true romance. It has the passionate intensity, the danger and the joy of romance flowing through it, as well as the power, the power of love that transforms tragedy into comedy. But my real favorite is a play by the Indian mystic, Sri Aurobindo, entitled *The Viziers of Bassora*, which Kristy once gave me as a birthday present. The hero in the story is a young Arab named Nureddene, the son of a nobleman who served the King of Bassora. He is handsome like Vinay and full of mischievous delight. The heroine is a Persian slave girl of incomparable beauty and angelic charm named Anice-aljalice, who was raised and educated to be a fit companion for a king. Nureddene's father is commissioned to find a magnificent slave for the king and purchases Anice on the King's behalf for an enormous sum. But when his son and the slave girl cast eyes on each other by accident at his home, they are lost to the rest of the world. So pure and intense is their devotion to one another, that all the forces which conspire against them are finally forced to submit to the supremacy of their love. It is a story of conflict, danger, adventure, the threat of death, the very conditions in which real romance flourishes." As Anya listened to his tale, Stearne watched the sadness, shadows and fatigue melting from her complexion, and the lustrous glow of beauty returning in full measure. "If you really want to understand your relationship with Vinay, you need to first understand romance," Stearne continued. "There are so many myths and superstitions that confuse the issue. Are you sure you want to hear about this from an old bachelor like me?" She nodded, "Just now romance is more difficult for me to comprehend than Ramanujan's notebook." "OK, then. First, you need to make a distinction between the initial attraction that spontaneously arises between two people when they first meet and the relationship that results from that attraction. They are two different things. In most cases, those that feel the initial attraction find that it disappears after some time and they come to the conclusion that they have made a mistake and chosen the wrong person. That is not true. In reality they did not know how to convert that attraction into a lasting romantic relationship. The attraction occurs spontaneously, but converting it into romance and sustaining it requires effort. The problem is that people want the whole thing to happen by itself in spite of what they are and what they do. That's simply a pipedream."

"Anyway, let me start with the first point, the spontaneous attraction. The question is why do some people feel so powerfully drawn to other people, often during their very first meeting? Our bead game profilers are searching for a formula to anticipate and predict that spontaneous romantic attraction. And there is one. But it does not simply reduce itself to a question of similar or contrasting development on L1 to L9 or even on the six dimensions. The first rule of romance is the principle of complementarity which underlies all

events and relationships in life. Everything in the world is a complement to everything else. Everything that happens to us, everyone we meet, represents a complement to some aspect of our being. Your partners, your friends, your family members—each represent an expression of something in you. Each presents you with the necessary conditions and opportunity to perfect a portion of your being. But they are all partial. It is only the man-woman relationship that represents complete complementarity on all planes—physical, vital, mental and even spiritual. That is why no other relationship can generate the intensity, the ecstasy and the pain that romance can, none except the relationship between the soul and God, which is a higher, all-encompassing form of romantic relationship. But leaving that aside, the love between man and woman provides the greatest opportunity for enjoyment, fulfillment, growth and even spiritual development.”

“What do you mean by complement, Joe? You suppose you mean opposites, “she replied to her own question. “But I don’t think Vinay and I are as different as all that implies.” “The basis of complementarity is sameness with a difference, not opposites. By sameness I mean there should be a basic compatibility of tastes and needs—physical, cultural and temperamental. But without difference, there is no energy, no flow. Variation generates intensity which is enjoyment. That difference may be of intensity, degree, direction or something else. It may be that one person is strong in an area where another is weak. Or one is very positive and good where another is negative and bad. One may be generous, the other selfish. One quick to anger, the other extremely patient. In any human relationship there is at least one such point of complementarity. In the man-woman relationship, it occurs at all points. There may be marked similarities of temperament or habit, but it will always be complemented by marked differences in other areas. People may have exactly the same qualities but at different levels of intensity or exactly opposite qualities of the same level of intensity.’

Anya tried to quickly correlate Joe’s formulation with what she knew about Vinay and herself, but then similarities and differences seemed to blur together and defy analyses. Stearne cited the characters in *Gone with the Wind* as an example. “Scarlett and Rhett are both strong characters. Rhett constantly tells her that they are the same as each other, both unscrupulous rogues. But he is a conscious rogue who knows exactly what he is and makes no pretenses about it, while she is unconscious and trying to conceal her false, ruthless nature from others. That’s the difference. She is attracted by his roguish arrogance, yet at the same time repelled by it. She pretends to be a lady, while underneath she is really still the daughter of an Irish peasant. He is the son of an aristocrat who knows what gentlemanly breeding is and has rejected social conformity because of the hypocrisy he sees everywhere. He is attracted to Scarlett whose surface behavior is pure hypocrisy, because he sees the strength and boldness of a demanding, selfish nature beneath the surface which she hesitates to express until circumstances compel. Rhett coaxes her to bring out the native, ruthless strength that enables her to survive and protect her family and property during the war. He is intensely attracted to her because she is the only woman he has met that he is unable to win. When she realizes her need for him, he immediately leaves her.”

“So you are saying, Joe, that there is in fact a perfect complement for every person?”

“Yes, and the moment a person is really ready to find that complement, the complement appears the next instant, the way Darcy suddenly materialized at Pemberley when Elizabeth realized what she wanted. But whether that person’s coming results in romance depends entirely on one’s response to it. Whoever you feel romantically attracted to is qualified, because that attraction is the sign of an inner complementarity. Of course, if the complementarity is merely physical, it cannot be long lasting, because physical characteristics themselves change rapidly over time. I am speaking of complementarity at the psychological level. Appearance has little to do with it. Romance is not created by beauty or physical attraction. It is created by goodness. Those who choose merely on a physical basis are not yet sufficiently developed in their consciousness for true romance. There is a charm in finding what we do not possess in ourselves. If the right person does not come, it means we are not ready. We may be looking for something, but it is not romance.” Stearne then returned to the example of Elizabeth and Darcy.. “They created an intense relationship the very first time they met. She saw that he was arrogant and disliked him for it. Then she accidentally overheard him refer to her appearance as ‘tolerable’ and decided to hate him because he hurt her pride. His arrogant pride and her prejudice are of a similar type. In addition, at heart they are both good, honest above average people of high character and values. But within that field of similarity, they are very different. He is aloof and everyone is submissive to him. She is submissive to no one and that makes her very attractive. He struggles to act properly but is awkward and ill-at-ease, while she is natural, free and independent. She is conscious of her imperfections and able to laugh at herself, while initially he is conscious only of his superiority and takes himself very seriously. The gap in their social positions creates the tension. He is from the highest echelons of society, but senses that his family lacks the strength and stamina needed to cope in these times of rapid social change. She is the daughter of a gentleman and a lawyer’s daughter. He is attracted to the polished mind she inherited from her father, but also the vibrant energy that comes from her mother. From the very

beginning of the story they relate intensely, but negatively. The intensity of their reaction to each other is a measure of their complementarity, an indication of their eligibility for romance.”

“Joe, you say that romance comes to those who intensely aspire for it. Well, I know lots of people who intensely want romance, but never seem to find it,” Anya replied.

Stearne shook his head. “I think if you look closely you will see that what those people really want is to take something from life. They are looking outside to find a way to fulfill their inner emptiness. But the movement of taking only evokes a similar response from life. Life becomes more demanding and the people you meet present you with precisely the same attitude as that with which you seek them. They may be seeking comfort, acceptance, security, pleasure, companionship or anything else, but that is not the seeking for one’s true complement. That is not really a romantic aspiration. Romance, like everything else in life, is governed by the same process—the process of creation. It issues from inside us. It does not just happen to us by chance. We create romance by intensely aspiring for.” Aspiration for romance is an outward going, expansive movement. It is the movement of aspiration issuing from inside that attracts the perfect complement instantaneously.”

Anya then asked him about the second part of the romantic equation. “Once a complementary partner presents oneself, what is the process of converting the opportunity into a romantic relationship that really lasts?” “First of all,” Stearne resumed, “there are some essential minimum conditions that have to be fulfilled. They are not the things that generate a romantic relationship, but they are essential for sustaining it. First, true romance has nothing to do with age or social position or money. In fact, very often it arises between people who are separated by social barriers like Romeo and Juliet, Rhett and Scarlett, Elizabeth and Darcy. External social obstacles of one sort or another are a common characteristic of true romance. Only when the individuals are willing to ignore and brush aside those barriers are they qualified for the adventure. All negative traits have to be absent for romance to flourish. Selfishness, meanness, the desire to dominate, and falsehood act like acid to destroy the most romantic of relationships. People must be incapable of ill-will toward each other. They may get angry or irritable at times, but the underlying goodwill must never be tarnished. Sincerity, good manners and human values are an essential condition for lasting romance. Or to state it differently, romantic couples who never allow their conduct toward each other to degenerate below the level when they first met qualify themselves to preserve what they have found forever. We all know how to behave so as to win the approval of another person. The problem is that as soon as we have done so, or at least after the wedding, most people want the freedom to behave as they naturally are and be accepted or admired for characteristics that they assiduously controlled and suppressed while they were wooing. The romance and the honeymoon can last just so long as people behave the way they did at those times. When they change, romance disappears. It is not because they have chosen the wrong person. It is because they have stopped trying to deserve the other person.”

“Your formula sounds a bit philosophical and pedestrian to me,” Anya replied. “It may result in a long lasting, harmonious relationship, but that’s not my idea of romance. Where’s the fire, Joe? What’s to keep the flame of intensity alive? Where’s the adventure you spoke of?” “Spoken like a true romantic, my dear. I would expect nothing less from you as an embodiment of elemental fire. But I’m not sure even you will be prepared for the answer.” “Try me,” she related with fire in her eyes. “At the heart of romance lies a mystical secret. The real essence of permanent romance is self-giving. What works is not the personality profile. It is the willingness for genuine self-giving. When people first meet, they are willing to do everything and anything to please the other. That attitude and that effort bring out the best in the other person. Romance is possible not because the other person is perfect, but because we chose to regard them as perfect. We refuse to see anything else. We relate only to the soul which is divine. Romance is a chase in endless pursuit of something that does not exist for the sake of creating joy in the other person. Whatever the defects the other person possesses, the effort to give and to please will help one develop the complementary aspects of one’s nature needed for one’s own growth. I am not saying that romance should be always blissful and harmonious. The closer you come, the deeper you relate, the more you will become conscious of the contradictions between you that can be converted into spiritual complements. Every time you see a defect in the other or have the urge to correct him, it is an opportunity for your own self-improvement and self-development. The more you are able to accept what is generally considered negative in the other person without reacting to it, preferably without even seeing it, the more positive your own inner being grows. The spiritual truth is that the lover is the perfect complement attracted to you for your spiritual perfection. When your lover abuses you and you refuse to react or when your lover taxes your patience and you remain calm, you discover deeper, richer aspects of your own personality coming to the surface. No other person can provide you with the same breadth and intensity for spiritual progress. True romance helps you develop true individuality which is spiritual. Neither Scarlett nor Rhett were willing to make that effort, so they lost their child and their relationship ended in tragedy. Both Elizabeth and Darcy were willing to make that effort.

They aspired to become better people. Their meeting, interactions, even their confrontations helped them become more conscious and better individuals. “In the ultimate analysis, romance is not something you find in other people. It is something you create in yourself. It is not something you *wait* to happen to you. It is something you *cause* to happen by your aspiration, your choice. Romance is an expansion of personality that exceeds all normal limits. A person cannot just be romantic in one thing with one person. Romance is an attitude toward life, a seeking for the unknown. The aim of romance is a self-existent joy in ever-increasing intensity seeking to become infinite. There cannot be romance without some element of Infinity.”

The worried look gradually appeared on Anya’s face as she thought about what Stearne had said. “Do you really think anyone is capable of meeting these conditions, Joe? It doesn’t sound possible.”

“I never said it was easy,” he replied. “How many truly romantic people have you met or read about? They are rare, even in literature. But, if you are asking me whether it is possible, my reply is ‘yes’, it is possible. I know it for a fact. The problem is that most people do not know what it requires or have not committed themselves to the effort, because they have no conception of how great the reward is or they foolishly hope to win the reward without qualifying themselves by taking the effort. But I suspect that what you are really wondering is whether you personally are capable of that effort. As I said to you once before in a different context, you were born for it!”

Anya leaned over and hugged him, then she got up to leave the room. Suddenly recalling something Stearne had said early in their discussion, she turned to him and asked, “Joe, you said you had never known anyone as generous as Vinay, that it runs in his family. How could you possibly know that?”

Stearne looked surprised, as if he had been caught unprepared for once. She could see that he was hesitating, trying to decide how he should answer her. “I have met his father, Raj, when he was at Cal in the 60s during FSM.”

“And you knew each other?” she asked in surprise.

“He used to call himself Roger then, to make his name sound more American,” he replied. Anya thought she could detect the glistening of moisture in his eyes, then suddenly he closed them and turned away.

Her mind was crowded with questions and her heart jumped. Stearne’s comment had too many implications for her to digest. She was utterly speechless. And she suddenly became aware that she had ventured to the very borders of personal intimacy, beyond which no one had a right to transgress. So she turned, left the room and noiselessly closed the door.

152. Theft

That night Stearne worked until late at his study back home. He typed the last word of the document—*infinity*. How very appropriate, he thought to himself. He pushed back his chair from the desk and read the title one last time, “Eternal Romance”, then he clicked the upload option that sent the document to a host site on the web. “That’s the last one, for a while at least. I wonder if she will find it?” he thought to himself.

Finally he was able to enjoy some peace and quiet in his own home, he chuckled softly. It had required the best of his persuasive capacities to convince Juan and Rosa to accept his invitation for a one-week paid holiday in Mexico City. Since the break-in, Rosa had been after him like a Jewish mother, constantly pestering him to eat this or drink that or take some rest. She had seen right through his pretensions of normalcy. Without understanding what was happening, she had sensed the pressure and strain he was under and, he thought, probably also with the intuition of a woman toward those that she loves, sensed what was coming. Finally he had succeeded in dispatching them, and it gave him the greater freedom of action he needed at this crucial moment. There was so much to be done and the stakes were so very high.

He dressed, ate a light breakfast and headed down the hill to MAI as usual. It was a cool, bright Saturday morning with little traffic and very few people on the road. He had hoped to see Dan, Levin and the others this morning before they went off to Santa Cruz. It had been ages since the five of them had spent any time together outside of a conference room. With the mounting tension of recent days, it would do them all good to relax, walk the beaches and hang out together without any agenda between conference sessions. If nothing else, it might ease the growing anxiety in the others which he, Dan and Levin had been unable to quell in spite of all their assurances and pretenses that everything was normal.

When Stearne arrived at MAI, the security guard informed him that the five of them had already left in two cars together with Bill, Lauren, Rana and Jamie. Stearne went up to the Cloister, opened the safe and walked back to his own office with *The Book*.

Dan and Levin returned to MAI about 11 pm the following night. The lights were out in the Cloister. Stearne had promised to sleep there Saturday night and wait for them to return by 6 pm on Sunday. Obviously he had become impatient and decided not to wait any longer. Dan could not blame him. He would have returned earlier, but he saw how much the others were enjoying the time they spent together, he decided to forget the clock and join in the spirit of the hour. They had returned by Route 1 so they could enjoy the coastal view and then stopped at Sausalito for a late seafood dinner. Lost in reminiscing, the hours had passed unnoticed.

Monday morning Dan woke at 6 am, made some coffee and opened the safe to take out *The Book*. He was startled when he saw that *The Book* was not in its usual place. There had not been a single occasion that he could think of during the past fifteen months, when Stearne had not been meticulously responsible in returning *The Book* to the safe before he left at night, unless of course he handed it directly to Levin or himself, Dan thought. The professor was never careless. Then it occurred to him that perhaps Stearne had not left at all. He must have decided to spend the night and had fallen asleep in his study. Dan walked over to the closed door of Stearne’s room and opened it very carefully so as not to make a sound. He peered in through the crack and saw the office was empty. There was no sign of either the professor or *The Book*. He looked at his watch and wondered whether it was too early to call Stearne at home. He hated to disturb the old man. Assuming he had decided to take *The Book* home with him, what possible objection could Dan raise? But he knew as he soon as he thought it that it was impossible. Stearne would never have done that. He would never have violated what he so mockingly termed the ‘prime directive’.

Then Dan began to worry. He picked up the phone and dialed Stearne’s home. There was no answer. That was in itself quite extraordinary. If Stearne did not answer on the first or second ring, Rosa always picked up by the third. She made it a rule. He suddenly recalled the professor mentioning to him that Juan and Rosa had taken a week off for a holiday in Mexico and felt somewhat relieved, but only slightly. Perhaps Stearne had gone home with *The Book* and knowing Dan would miss it, he was already on his way back to MAI right now. In that case he would arrive in an hour at most. It all seemed too strange to Dan. He finished his coffee, went into the bedroom and dressed, then went down to his car and drove along the route he thought Stearne would follow. He traced it up the hill all the way to Stearne’s house, got out and rang the doorbell, and finding no one at home, returned in the car by an alternate route to MAI. By the time he reached the top floor he was so full of anxiety that he nearly burst through the door, startling Levin who was sitting up with a cup of coffee on the living room sofa. Dan explained briefly what had transpired since he

arose an hour before. They both went into the study, examined the safe and looked around the room and in the drawers. Levin then went into Stearne's office and checked in the desk as well.

By this time both of them were feeling more anxious about the professor than they were about *The Book*, so they suspended their search and sat down to calmly consider the possibilities. The problem was they could not think of any plausible explanations, not even one. If only Stearne had not been too stubborn or old fashioned to carry a cell phone, it would have made things so much easier, Levin thought. Actually, they both knew there was one plausible explanation, but they resolutely refused to even consider it. Not yet, anyway. By then it was already 8 am. Ray, Vinay and Anya would be in soon. If he called them to inquire whether they had seen Joe, Dan thought, it would generate a terrible fright, so he decided to wait until they arrived on their own. Without Dan saying anything, Levin had the same thought and went down to the executive floor to casually bump into them as they arrived. He returned twenty minutes later. None of them had seen the professor since Friday evening. Next, Levin called all the local hospitals, but none of them had any record of treating a patient named Stearne during the past three days.

Try as they might, neither Dan nor Levin could come up with a plausible explanation. Then Levin went downstairs to the first floor to talk with the security guard on duty. He knew the man was unlikely to be of any help, since his shift had begun only at 6 am that morning. He asked the guard to check the log and tell give him the names of those who had been on duty over the weekend. Then he phoned Luis Gavoche at Oxford Security and explained their concern. Luis agreed to contact the guards who had been on weekend shift to see what he could find out. He also suggested they review the weekend security tapes to find out when Stearne had left the building. Instead of alarming anyone at MAI, he said he would immediately send over two people to do the screening, as if it were a routine systems check.

Dan and Levin spent the rest of the morning in the Cloister doing almost nothing, but assiduously avoiding contact with others so as not to reveal the level of their concern. Just before noon, Levin received a call from downstairs asking him to come to the security room. The Oxford technician played back a portion of the tape from a rear door of the building between 11 am and noon on Saturday. It showed two burly Hispanic men in hooded ski jackets, which prevented a clear view of their faces, drive up to the back of the facility and enter through a door that required special security codes to open. Fifteen minutes later they left through the same exit with Stearne between them. The professor appeared to stumble at one point and it looked like the two men had dragged him to the car.

Levin immediately picked up the phone and called Inspector Bryne. Twenty minutes later the inspector arrived along with three police cars and a team of six officers. Dan and Levin met Bryne in a small meeting room on the first floor to avoid alarming staff throughout the building. Bryne insisted on examining the Cloister along with two other officers. Meanwhile he assigned one officer to review the security tapes and sent two up to Stearne's home. The sixth officer got on the phone with Oxford Security and requested that the Saturday morning security guards report to the police station in an hour for questioning.

Later, none of them were able to clearly recollect what happened during the rest of the day. The police followed every available lead, but came up with no immediate information. Anya rushed into the Cloister at 1 pm with anxiety all over her face demanding to know what was going on and burst into tears when Levin explained what they knew. Vinay, Ray and Lauren came up behind her and stood paralyzed with disbelief, until Levin insisted they sit down. Bill joined them a few minutes later. Once he was briefed, he returned to his office to coordinate with the police. The rest of them sat in the living room the remainder of the day, waiting for information, praying or doing whatever it is people do when they feel totally helpless and terrified.

Dan struggled to remove the blanket of oppression that covered his thoughts, so he could think and feel clearly. But for hours all he felt was numbness. No one had any ideas or any words of encouragement to share, though each of them was struggling for something to say that would relieve the anxiety of the others in the room—anything at all, as long as it was true. They had come too far to try to delude themselves or fool each other. Something kept pressing to break through the clouds in Dan's mind, something that had occurred to him a few days earlier when Stearne had been speaking with Levin and himself about Theon. There was a clue there, but he could not catch the end of the string of thought to bring it back to his surface consciousness. He tried to think back to their dinner discussion on Thursday night and the breakfast meeting Friday morning for any possible explanation. He recalled being confused by several things Stearne had said and even more so by the sense that he was not saying everything he knew. But nothing Dan could recollect helped clarify the situation.

At 7 pm on Monday night, Bryne called, but he had absolutely nothing to report. An all-points alert had been put out in Northern California in the afternoon. He had just requested that it be extended to the rest of the state and neighboring states as well. After the call Ray went home to be with his family, but Anya

refused to budge an inch from Haydee's chair for the rest of the night. Lauren fell asleep on the carpet next to her.

Dan woke by 5 am the next morning but remained in bed reviewing the events in his mind. Suddenly the missing thread of thought appeared. It was connected with his realization about the *marvel*. He had realized that any problem could be solved by discovering the inner elements in oneself that corresponded to the elements posing the problem or creating the pressure externally. That was the thought he had been trying to remember, but now he could not see the connection. What did that thought have to do with this situation? he wondered to himself.

A brief report appeared in the local newspapers and on TV and radio. All were minor variations of the same story. This report was from the *Berkeley Daily Planet*.

Joseph Stearne, the renowned Professor of Philosophy at UC Berkeley, disappeared over the weekend while working on a confidential project at MAI Inc., the well-known software house, creator of AIS⁹ and UNIAC. A top-secret software code book was also removed from company premises at the same time. According to Berkeley Police Inspector Ronald Byrne, two unidentified men were photographed entering the company premises through a rear security door on Saturday morning and leaving along with Stearne a few minutes later.

Bryne called Levin at 9 am to inform him that he had nothing further to report. Anya was still sitting in the corner and had refused to take anything but a cup of black coffee which Lauren forced on her since the previous afternoon. Thirty minutes later, Bryne called back and spoke to Levin in an excited voice which was sufficiently loud to be indistinctly heard by everyone else in the room. A bewildered look of surprise appeared on Levin's face as he listened. When the call was over, Levin shook his head and explained to them that Stearne had been recorded on videotape at the international terminal of San Francisco airport Saturday afternoon between 2 and 3 pm. The identification was positive. He appeared to be alone, in normal health and pushing two large suitcases on a trolley. Airport authorities were searching airline records to find out his destination and would report back shortly.

The first response of everyone present was a tremendous sense of relief. Dan felt he could start breathing again. Anya hugged Vinay and giggled out loud, as if the old man had played a joke on them. Then she suddenly became angry and loudly abused Stearne for subjecting her to such terror. Then she sobbed with relief again as tension drained from her body. "How could he do such a thing?" she blurted out, followed by a string of questions addressed to no one in particular. "Why would he do it? Where could he possibly have gone and why? Who were those two men? Why didn't he tell us? How could he give me, give all of us, such a horrible fright?" Vinay stroked her hair. No one else ventured to answer, because no one had any answers.

Dan recalled his early morning musings about the inner solution to any problem. Suddenly the answer occurred to him and his face lit up in surprise. Since the nineteenth, Dan had been feeling intensely that something must be done to protect his people, the company and *The Book* from those that threatened them. Earlier he had thought *The Book* was not even that important anymore. The people were all that was important. But after Joe explained to him who was after *The Book* and why, he thought it would be criminal to hand it over to them. He had been filled with an intense aspiration to act, but he had felt powerless to do anything. So what was the result? Joe had acted in his place. Joe had done precisely what he thought could be done to protect all of them—the people, the company and also *The Book*. He had taken it and run away, so there could be no further point in Theon's disciples threatening the company to make them hand it over. It was a stroke of genius! Once his mind was clear, Dan explained it to the others. It was the first time he had spoken more than two words in succession since early morning. "I think I see what he is up to. He has just announced to the whole world that *The Book* has been stolen! And he did it in a manner that ensured the world would hear about it."

"But why do it this way?" Anya asked in a plaintive voice. "Why create such a confusion, mystery and drama? And why didn't he tell us what he was planning?" She knew the answer to the second question even as she voiced it. He wanted to be sure that everyone believed the news was real. What better way to do that than convince his closest associates at MAI?

Dan continued his explanation. "Joe, Kurt and I have not been completely frank with the rest of you since the break-in on nineteenth." Anya stared at him with a mixture of curiosity and suspicion. "On the twenty-first we discovered a note that had been left in my safe by the intruders, threatening more serious action if we did not hand over what they wanted. Joe was convinced that he knew who was behind the attempt to steal *The Book*, that they meant what they said and had the capacity to carry out their threats. The three of us spent every waking thought trying to discover a way out. The problem was that we were unable

to think of a single plausible solution that did not involve either relinquishing *The Book* or endangering other people. Earlier I would have said let us give up *The Book*, if that is what life is compelling us to do. But when Joe explained the motives of these people, that seemed like a cowardly, unacceptable way out. These people were after the power in *The Book*, so they could exclusively possess it for their own egoistic self-aggrandizement, while consciously withholding it from the rest of humanity. Giving them *The Book* would be like giving Hitler the formula for the atomic bomb in 1940 and making sure that he had control over all the atomic physicists in the world, so that no one else could develop one. I know that sounds melodramatic. Perhaps I should have said it would be like controlling access to the Internet, so that only a few hundred or few thousand people in the world could enjoy the benefits from the greatest social organization ever invented.”

“And you did not think you could trust us to share that knowledge and that burden,” Anya said in an accusing tone offset by a tinge of affectionate gratitude.

Dan smiled meekly and shook his head. “There is still more we haven’t yet told you. I believe that the bomb threat on campus last week was planned by the same people who wrote the threatening note with the specific intention of demonstrating to us what they are capable of. The bombs were planted in two buildings, both belong to the Computer Science Department, just a mile due East from here. It was clearly meant as a warning to us.” Only now the others began to grasp how serious the problem really was and how great a burden Dan, Joe and Levin had taken on themselves. “Now you can probably better understand how desperate Joe was to solve the problem,” Dan continued. “He told Kurt and I he thought he was very near to a solution, but he needed a few more days. He never told us what type of solution he had in mind and we did not press him. He wanted us all to leave town over the weekend so there would be no way for those people to contact us to make their demands before Monday. He said that was essential, but, of course, we had no idea why or how he thought it would make any difference. Now it is clear that Joe needed a little more time to arrange his departure. He also sent away Rosa and Juan to avoid implicating them or having to answer their questions. I believe he staged it purposely to look like a kidnapping so that the news would be sure to reach the public. He wanted to ensure that the bombers heard about it immediately from a source they could not doubt. The media may not have carried a report about a stolen code book, but he must have been confident that if a distinguished professor was involved in a case of kidnapping and industrial theft, it would make headlines, at least locally. You have a right to accuse or abuse us for not confiding in you, but frankly we thought that you were all under too much pressure as it was. We all were. We needed someone to keep up a bright face before our employees and knowing what we knew would only make it that much more difficult to do.”

The phone rang again. Byrne informed Levin that Stearne had flown to Singapore. He asked if they had any idea why or who he might be in contact with there. All of them shook their heads and Levin relayed the negative reply. Before he had put down the phone, Anya exclaimed ecstatically, “Raj and Mita!” Then seeing the blank expression on the faces of Dan, Ray and Levin, she said, “Vinay’s folks! Joe knows them. They were close friends in the 1960s when all three joined FSM. In fact, ...” then she stopped abruptly and looked around in embarrassment. She had promised Joe she would never mention his relationship with Mita to Vinay. In her enthusiasm she had almost broken that promise. She turned to Vinay, who looked totally surprised. He wondered what more Anya had been planning to say, then suppressed. “I’m sorry, Vinay. I meant to tell you. Joe told me late Friday evening, when I met him up here. He spoke some beautiful things about love and romance which were really moving. I planned to tell you everything, but when I got home I had to rush to pack for the weekend and it all completely went out of my mind until this very moment. He must be headed for Chennai. I am sure of it. That is probably why it was the last thing he mentioned to me. He gave us a hint of his destination before leaving.”

“Well, it won’t be a secret for long,” Ray said. “The police will discover his ultimate destination very quickly now that they know his route. They may even know it all ready from his reservations. Then what?”

Levin replied, “I would not worry about that, Ray. Remember, Joe has not actually done anything wrong. He has not broken any law. He simply exercised his normal right to leave the country. It is we and the police who jumped to the conclusion that a crime has been committed. Of course, he did take *The Book*. But, unless MAI presses charges, that is hardly an offense worth prosecuting. He could always plead that he had just borrowed it, which would sound plausible in any court of law and hardly grounds for punishment.”

By this time it was 5:30 pm. Vinay went to the phone and called his parents’ home in Chennai. His father answered in a sleepy voice. Vinay apologized for waking him so early, then asked if his parents had heard from Joseph Stearne. His father sounded surprised by the question and hesitated a moment before answering. Then he replied that Stearne had arrived the day before and met them, but he had told them that

he would be totally occupied in some urgent work for the next two weeks and would contact them again after that. Vinay asked his father to inform him if he heard from Stearne or found out where he was staying and to ask Joe to call MAI at the earliest. They were all relieved to learn that Anya's hunch had proved correct, yet frustrated by their inability to reach him and get to the bottom of the mystery. At least they knew where he was and knew he was safe. That night Dan insisted that they all go home and get a good night's rest, promising to call immediately if there were any further developments.

The next morning additional reports appeared in the local press. This report from the *Oakland Tribune* is typical.

Yesterday's report that Joseph Stearne, the Cal Philosophy Professor, may have been kidnapped by two unidentified men now appears to be unfounded. The authorities have since ascertained that Stearne left the country last Saturday of his own free will for an unknown destination. However, police still believe that without the company's knowledge or permission the professor carried with him a top-secret software code book belonging to MAI Inc., where he worked as an adviser. University authorities were unwilling to comment on these events.

Around 10 am Bryne phoned to say they had called off the manhunt and suspended the investigation, since all the facts were apparently known, except for the identity and role of the two Hispanic men who accompanied Stearne from the building. Since there had been no evident of a forced break-in or burglary, the police had to conclude that those men aided and abetted Stearne in some manner as accessories, but without a license plate number on the car or finger prints, there was insufficient evidence to trace them further.

Later that afternoon, Dan returned to the Cloister after a series of meetings, the first semi-normal business activity he had conducted since the break-in. When he entered his study, he was stopped in his tracks by what he saw lying on his desk. It was *The Book*. He went over and examined it. It was fully intact, just as when he had last seen it five days before. He could not imagine how it had gotten there. Levin had been downstairs in the lab with Anya most of the day and had not yet returned. No one else had access to the Cloister except Limpia. Suddenly he heard a door open and turning around saw Limpia emerge from Stearne's study. He called out to her. She came almost running, pointed to *The Book* and exclaimed in broken English that when she was cleaning Stearne's office a few minutes before, she discovered it on the floor pushed under the sofa. She said she had no idea how it could have gotten there. She continued speaking in an excited manner until she saw a huge smile cover Dan's face as he fell into his chair laughing.

153. Fusion

Beyond becoming there is Being.

The Archives

Dan was astonished to discover that while his personal world seemed to have stood still since January nineteenth in a paralysis of doubt, fear, confusion and inaction, the forward momentum of life at MAI continued to expand at an accelerating rate, like an oblivious vine of roses growing wantonly and blooming joyously in the middle of a battle field unmindful of the dangers all around them. It took a great effort for him to realize that everyone else was not as preoccupied and consumed by the drama as he was.

As the actual chain of events that had taken place became clearer, many of the phantom fears and imagined possibilities dissipated. The mental clarity and emotional focus which were his greatest assets gradually returned. By an effort at first and then progressively by a reawakened aspiration and renewed determination, he refocused his attention back to the immediate work at hand—guiding the creative invention and expansion of a company rapidly entering the highest echelons of global business eminence. But the thought of Joseph Stearne was ever-present at the back of his mind, whether whispering encouraging words or jibing like a coach to spur him to greater expansiveness or simply lurking like a silent shadow watching every move he made with a curious blend of benevolent understanding, humor and love. Only now Dan began to realize how much the professor's consciousness and personality had become a part of his own or, rather, to what extent he his own personality was immersed in the consciousness of a greater being than himself.

Often during these days he had the feeling of being in the driver's seat of an airplane flying on remote control. In truth this feeling had developed over a considerable period of time as he learned to let go of the wheel and controls so that Bill and others more competent than himself could handle them on his behalf. In one sense he regretted that Bill was not still part of the inner circle or Cloister as he liked to think of it - for he now regarded the Cloister more as a Being than a place, a set of illimitable relationships defined by Trust—as he had been during those crucial first months after his joining, so much so that at one time Dan had believed he was the missing fifth element required for realization of their work. He now realized he had been wrong and hasty in his actions, but somehow life had set right what his enthusiasm and impulsiveness had set off-kilter, as it had done on many other occasions. Dan was sure if life did not provide the restorative balancing mechanism, things would have gone hopelessly wrong long ago. He was more patient now than before, more adept at reining in his own impulses and initiatives, stepping back and moving inside to a deeper center of harmony so that life could do its work without constant interference from his own personal need to think, feel and act as though he were making a difference, like the music copyist who tries to improve on Beethoven's Ninth or the actor who improvises during Hamlet's soliloquy.

Levin had advised him that now was the right time for an IPO. He knew Levin was right from a business and money point of view. Bill had been advising him the same thing for many months, but as long as the company was so vulnerable to unexpected attacks by unknown assailants, subject to so many intangible pressures, he resisted the temptation to think of money. His first priority had to be safeguarding, preserving and strengthening what they had created. He did not need Bill to tell him what it could mean. He had been a witness at the time when Google went public in April 2004, barely five years after its founding. At the time the company had been approximately equal in revenues to what MAI was presently earning, but MAI had been able to accomplish it with less than 25 percent of the staff and five times higher net income than Google's had been at that time. He used to joke with Ray about the fact that they would have been far better off investing all their savings in Google at that time rather than putting it into MAI during that nascent period when all they got in return were pressures, problems and rising levels of debt. Within six months of the IPO, Google's share value had risen by almost 90 percent and the company had a stock market capitalization of fifty one billion dollars, more than hundred times its net income. Three years later, its market cap rose to one hundred eighty eight billion dollars and its share value to seven times the initial price. Already on course to earn twice what Google was earning at that time, it was not difficult to understand that MAI might break all the existing records for an IPO.

These considerations did not weigh very much with Dan or with any of them, he was pleased to note. Such unconscionable wealth would pose enormous problems and responsibilities and provide nothing of real value in return. The last thing he wanted was to set up another foundation to generously bestow on others what he had earned from MAI. He respected those who did it, especially in comparison to those that tried to become commercial aristocrats while the world was moving rapidly toward an age when money would be as commonplace as cars and mobile phones. But he understood the impulse that drove people to do it. It could be seen in every bygone age. The freshly elected representatives of the free peoples of revolutionary France promptly elevated themselves to the status of the nobility they had put to the guillotine.

The entrepreneurs of free enterprise who had fought against taxation without representation quickly became the magnates of business who used their wealth to ensure that elected politicians levied most of the taxes on those who did not have it. In an age when for the first time in human history the basic necessities of life were almost universally available to all in many countries, people vied with each other to acquire elitist symbols of brand elegance and pay higher prices for the sole privilege of their exclusivity. Dan understood this as a social process and accepted it, but it had no fundamental attraction.

For him, there were two compelling reasons for going public when the time was right. First and foremost, to create such a wide ownership of shares in the company that MAI could establish deeply rooted foundations in society sufficient to withstand any kind of attack. For ultimately, the only thing that was safe was that which society as a whole regarded as part of itself. It was dangerous for the tree to stray too far from the stream that nourished its roots. Second, AIS⁹ had already identified the means to effect enormous change in the world, but mere knowledge was not enough. Power was also needed and money was power. With rare exceptions that power was now utilized for personal gain, to aggrandize the ego of a person, a family, a group or an entire nation. But that was not the only possibility. It could equally well, far better in fact, be applied for the benefit of the whole. Dan's conception was not charity, philanthropy or purchasing of political influence. He had no faith in those things. The money could be directly utilized to apply the knowledge generated by AIS⁹. The opportunities were boundless. But he knew where he would start if he had a choice, exactly where Ray, Kurt and Bill would choose to start as well—at the ancient origin and infinitesimal core of the knot that divides the world today—Palestine.

But before an IPO, he wanted to accomplish two other things. First, the release of *Evolve*. Second, the creation of *Fusion*. The first of these objectives was now well on its way to fruition. He had been surprised by the report from Anya's team on their progress during the past two months. The application of growth principles to the six dimensions had generated a seven dimensional model of evolving human consciousness—the seventh dimension being time. The capacity to graphically represent this evolution from a point to a multidimensional sphere had come as a gift from the Bead Game, where advanced gamers had already been working for months on how to modify personality profiles. The imagery was so pleasing and expressive that they had decided to launch *Evolve* as a game instead of an application. Dan was happy with that decision. Psychological growth was too serious a matter to be taken seriously. Growth could only be fostered in an atmosphere of total freedom and a spirit of joyous expansiveness—precisely the true atmosphere and spirit that makes play at once the most creative and delightful of all human activities.

It was only a matter of weeks now before they would be ready for the beta-launch. Hopefully, the last seeds of any threat would have been dissolved by then, though Dan wasn't sure how that would happen. After all, so long as *The Book* was somewhere in the world other than in their own possession, the adversary would pursue it and eventually find it. Stearne had deflected the danger from MAI, perhaps permanently freed them from attack, as long at least as others believed that *The Book* had really been stolen. The moment they discovered or even suspected that it hadn't been, the danger would return in full or heightened measure. To buy MAI that freedom, even temporarily, Stearne had paid an enormous price. He had put his very life in danger. He had called down on himself the full wrath and determination of an organization with global reach. It would not take long for them to find out where Joe had gone and where he was in hiding. How could one old man ever protect himself? And for how long?

Dan was deeply grateful for the professor's sacrifice, yet he was also deeply sorry Stearne had done it. "Why didn't I think of that?" he often berated himself. "It should be me wandering the world in hiding, not Joe." But Dan hadn't thought of it and Stearne had both conceived and executed, with a precision and perfection that was amazing and magnificent. He laughed to himself again at the extraordinary capabilities of this old man.

Then there was *Fusion*. Dan's ideas about it were still hazy. It represented for him the ultimate product. It would go beyond AIS⁹, *UNIAC* and even *Evolve* in many ways. As *Evolve* had shifted the focus from action by the user in the world for material and social accomplishment to the growth of user's own personality, *Fusion* would shift the focus from psychological growth to spiritual evolution. *Evolve* was intended to help people become better, happier more fulfilled individuals. *Fusion* was intended to help people elevate their consciousness, to grow spiritually, to transcend ego and become universal beings. As *UNIAC* created prosperity and *Evolve* generated personal happiness, the purpose of *Fusion* was to *create consciousness*. He succinctly summed up the theoretical difference between the products this way: "Mind creates by division into parts that which equals less than their sum by destroying the integrity of the whole, i.e. fission. Consciousness creates by unification and integration of the parts into a whole that is greater than their sum, i.e. fusion. They had the knowledge of the process, because the process of creation is the same at all levels, but Dan was not yet sure of the mechanism for converting it into a product. If they succeeded, it

would be a supreme and an ultimate accomplishment. It was difficult for him to even imagine something beyond that.

He sensed that *Fusion* would be different in other ways as well, which he was not yet able to clearly define. Ironically, it would reverse the growing dependence of human beings on the instruments they had created by largely dispensing with the importance of the computer it operated on. Of course, computers would still be needed, but their role would be reduced to that of minor intermediaries aiding the interaction of the human being with his own consciousness, which was ultimately the basis of all human action. The person would be central and primary, the instrument merely a tool or a mirror to help reflect back to the consciousness the knowledge it needed for its progress. *Fusion* would shift the center of knowledge and action from outside to inside, from the external world to the center of one's own conscious being.

He sensed also, though could not clearly explain, that *Fusion* would transcend structure and rules. Structure and rules were the very foundation, heart and soul of computing, but they were not the soul of human consciousness. Mind worked by structure and rules, personality acted according to fixed habitual patterns, but not consciousness. Consciousness was free and defied all limits of structure and rule. But the freedom he had in mind was not freedom from the world or from responsibility. It was a freedom to expand infinitely and create without limit. It was a freedom in the world and of the world. It was not an escape from the imprisoning boundaries of life, but an abolition of those boundaries in life so that it could reveal its true infinity. It was a freedom from ego that would make possible the free development of spiritual individuality.

All these thoughts passed through his mind in a stream as Dan applied his energies to the work at hand, all the time with a portion of his mind continuously thinking of the professor and half expecting him to reappear as suddenly as he had vanished two weeks earlier.

154. The Departure

Everything had gone exactly as he had planned it. Juan's brothers, Luis and Jose, had followed his instructions to the letter, having no idea of the appearance they were creating for others to examine a few days later. He had felt somewhat guilty in involving them, but he had taken all possible precautions to see that no harm came to them for the role they played. First he had insisted that they wear the hooded ski jackets and park the car far from the parking lot security cameras. Then he had left them with the letter in a sealed cover instructing them to hand it over to anyone who contacted them regarding his departure. That letter clearly exonerated them of any possible blame.

He was not really worried about Luis and Jose. He was far more worried about the response of Rosa and Juan when they returned to an empty house the following week. He had asked Luis to call them on Wednesday and explain that he had urgently left the country and would contact them in a couple of weeks. That would at least alleviate the fright, though he knew Rosa would never pardon him for what he had in mind.

Then he had drafted, printed and addressed the press statements for the Oakland Tribune, the San Francisco Chronicle, the Berkeley Daily Planet, the Berkeley Voice, the East Bay Daily News, and, most importantly, the Daily Californian—confident that because of his reputation and former celebrity status, DC would definitely investigate the story and publish it, even if no one else did. He sent the draft press statements in a sealed envelope with his lawyer, instructing him to post them the following Monday. That way he made sure that the press received word first of his abduction and then of his voluntary departure. He had enjoyed drafting those statements and wondered whether the actual press reports would be as dramatic and colorful as his versions. Journalists often have a way of taking the élan out of life by their pedestrian mode of expression, he thought.

When Stearne got off the plane in Chennai, a tall, handsome, man in his mid sixties moved quickly and gracefully up to him and embraced him. "It's been a long time, my friend," the man said in a soft, enchanting mellow voice, "too long."

Behind him, a slim, elegant woman with long black hair and a smooth golden complexion was waiting. She came forward to embrace him. "Your boy is beautiful, just like Raj," Stearne whispered in her ear. "And so is she. Just like you. And, if I am not mistaken, you might be seeing them both sooner than you think."

Later back at their home overlooking the Bay of Bengal just south of the city, they sat reminiscing about old times. While Mita was in the kitchen preparing lunch, Stearne turned to his old friend and said, "Raj, there is something rather urgent I need to attend to and I need your help. I need a printer, the best and fastest available, to print a book for me. It's essential the printer is capable of doing this as fast as possible without a single mistake. I will need help from you and Mita for proofreading, too."

"Another book, Joe? I would have thought you had exhausted all you had to say by now and would have the common sense to know when to keep quiet." Raj's voice belied his words. It was filled with deep admiration and respect. He knew Stearne preferred that to any flattering compliment. "And, I suppose you will expect me to read it?"

"Actually, Raj, this book isn't really mine, so it entails no obligation on your part."

"A translation, then?" Raj replied.

Stearne shook his head. "I guess you could most accurately call it a transcription. I have a feeling you will find the temptation to read it irresistible once you learn more about it. Remember that book you found in Moe's in 1964 the day the FSM protests first broke out?"

Raj stared at his old friend in amazement as an enigmatic smile filled Stearne's face.

"Oh, I need to ask one more favor from both of you. Not a word about this to anyone until I say so, not even to Vinay."

155. Simultaneous Integrality

Inward absoluteness of self-existence is the essence of matter.

The Book

It was Saturday, February twenty-first. Dan and Levin were sitting in the living room of the Cloister discussing one of the most difficult chapters in *The Book*, which dealt with the concepts of Space and Time. The explanation was clearly expressed by the author but extremely difficult to grasp, because it required a complete reversal or inversion of the normal egoistic human mental perspective.

Space and Time are names for the self-extension of the one Reality... Space is self-extended status. Time is self-extended movement... Space is the Spirit's objective experience of itself as object to its own experience. Time is the Spirit's subjective experience of itself as change... [But in reality] Subjectivity and objectivity are only two sides of one consciousness... The fundamental truth, the original status of Time, is nothing else than the eternity of the Eternal, just as the fundamental truth of Space, the original sense of its reality, is the infinity of the Infinite.

They both struggled to convert this abstraction into the terms of their own experience. *The Book* clearly confirmed from spiritual experience the conclusion of Einstein that Space and Time are relative rather than absolute, but it went beyond the Theory of Relativity in two essential ways that were crucially significant to the future development of humanity. Einstein's theory of relativity was truly intelligible to very few people, most of them physicists, and that led to the common misconception that it was relevant only to physicists as well. But that was far from true. In actuality, Einstein's theory had had a profound impact on the entire development of modern thought and civilization over the past nine decades since he formulated it, and the scientific and technological impact represented the smallest part.

Einstein's theory reinforced the existentialist doctrine that life, existence, knowledge and truth were only relative, that there was no underlying foundation of essential truth and reality on which existence was founded and based. Viewed in this light, Existentialism was only a new version of Shankara's doctrine of *maya*, one more instance in which a partial, relative truth had been mistaken for the whole truth and the fundamental reality. In its original conception, which predated Shankara by three thousand years or more, *maya* was viewed as the creative power of the Absolute, the power of the Infinite to manifest itself as and in terms of space and time. The ancients did not view *maya* as a force for creating illusions—the capacity to create illusions is only a power of mind. *Maya* is the Spirit's power to manifest the infinite aspects of an eternal reality in relative terms. Like Shankara, the existentialists mistook a lesser truth of mind for the whole truth. It is self-evident that our mental view and valuation of reality is as relative as it is partial, ignorant and egoistic. But just because our view of existence is limited, does not mean there is no underlying reality to what we experience. It is our consciousness that is relative, not Truth, not Existence.

The sages and rishis of all ages had discovered that ultimate Reality and recognized it for what it was, just as the physicists have discovered or are on the verge of discovering the ultimate reality of matter. But there was a missing link that prevented the rishis from connecting the two. They knew the Reality. They knew it had manifested the world. But they did not know the *process* that converted the Infinite into the terms of the finite and could be used to convert the finite back into the terms of the Infinite—or in the phraseology of *The Book*, *to discover and release the Infinite in the finite*. The essential message of *The Book* is that Existence is real, Truth is real and the world is also equally real, because it is a partial manifestation of that Infinite and Eternal Reality in finite terms. But it goes one step further, and this was the crucial point that Dan and Levin were struggling to comprehend. Beyond Time and Eternity, it speaks of a third view of time, what it refers to as the *simultaneous integrality of Time*. According to *The Book*, one who has the complete knowledge, one who knows the complete process of creation, has the power to manifest the Infinite in life. And when that power manifests, it does not take time. It generates results instantaneously. The aspiration, the decision, the action and the result are simultaneous and fully integrated with one another.

This was the process that humanity had been applying partially and unconsciously to create the phenomenal achievements of the past two centuries. This was the knowledge, more consciously perceived and applied, that empowered AIS⁹ and UNIAIC and made them so productive. This was the knowledge that when fully comprehended and expressed could wipe out poverty, war, and every other human scourge in an instant. This was the ultimate goal of their quest.

They knew they were very close now. They both knew it would have been so much easier if Stearne had been there with them. The professor had a clarity and breath of grasp they could not match. Yet, somehow, even in his absence they were progressing far more rapidly than ever before and coming nearer to a momentous discovery.

It was at that moment that the parcel arrived. Dan received a call from the front desk that FedEx had just delivered an international package from India in his name and asked if they should send it up. A few minutes later Dan received it and recognized the sender's name was N. Raj. He opened the parcel and pulled out two brown leather-bound volumes that looked extremely familiar. They were an almost an exact replica of *The Book*, except that the leather binding was obviously brand new. He took one of the volumes, opened the cover and looked at the title pages. It read

The Infinite Game

Advanced Users Manual

Transcribed from the original by Joseph Stearne

Dan turned to the first page of the text and recognized it immediately. It was a word-for-word reproduction of *The Book*. He opened the second volume and saw that it was identical to the first. With a trace of emotion he was unable to suppress, he handed it to Levin and said, "I believe this copy is intended for you."

Anya and Vinay had decided to spend the day at home doing absolutely nothing at all. She had been unable to hide the overwhelming sense of loss she had felt after Stearne's sudden departure. Even after she knew he had arrived safely in Chennai, she could not shake off the sense of loss. Vinay had never seen her like this before and he had felt helpless to heal or soothe her wounds. Now finally she was coming out of it. The last one week her mood had improved daily and with it her appearance. The care-worn look of a lost child was gone now. Her native energy and cheerfulness had returned and the healthy glow of a woman in bloom. She had decided to trust her feelings, and her feelings told her things would work out in the end. Joe had always told her that her emotions were more true than her thoughts. It arose from the fact that she was a pure No. 5 with a touch of the psychic, he had explained.

This morning she felt particularly happy. A warm feeling welled up in her as she rolled over on the bed and looked at Vinay lying face up with his eyes open staring at the ceiling. She was not just happy. It was something more. A feeling of inexpressible joy coursed through her nerves. Vinay turned his head toward her and saw that her face was glowing with light. He had been waiting weeks for the right moment to speak to her and propose the trip, but he had never felt it was the right moment until now. She was about to get out of bed, when he reached out and pulled her back down on the mattress saying, "Anya, wait a moment, there is something I want to talk with you about." Her curiosity was alerted by an unusual tone in his voice. She looked him straight in the eyes with a full smile on her face. It was almost impossible to think, let alone speak, when she looked that way.

Suddenly the doorbell rang. Anya jumped out of bed and ran downstairs to the front door, shouting back to him to wait there for her to return. She received the FedEx package and signed for it. The moment she had closed the front door, she noticed that it came from India. Then she recognized the sender as Vinay's father and was extremely surprised to see that it was addressed to both of them. Pleased and curious beyond measure why his father would be addressing a package to her also, she rushed back upstairs into the bedroom and threw herself on the bed. She was like a child who had just received a mysterious present and could not wait to open it, but at the same time is eager to prolong the joy of suspense. She held up the package so Vinay could read the label, but when he reached to take it from her, she withdrew it playfully and said it was addressed to her. Then she tore the perforated tab and withdrew two bound-leather volumes. She opened the first volume to the title page and then exclaimed ecstatically, "It's from Joe!" Handing that volume to Vinay, she opened the second and saw it was the same as the first. It was only then that she noticed the inscription on the inside front cover:

Dearest of slave girls, like Anice-aljalice, may you find eternal romance with your Nureddene in the garden of life. Joe

Taking the other volume from Vinay's hands, she passed this one to him with the page open so he could read the inscription. "Who is this guy Nureddene?" he asked, feigning a look of suspicion.

"Just a guy," she replied. Then she read the inscription addressed to him:

There are only two men I truly envy in this world, one is your father, the other is you. But I love you both more than I envy you. Joe

Anya burst out in tears and fell into Vinay's arms where she lay motionless for half an hour. The last trace of sadness dissolved. Then she lifted her head from his shoulder, looked in his eyes and asked, "You said you wanted to talk about something. What was it?"

Vinay replied, "Oh, I was just going to suggest that we get away for a while. Maybe a trip to South India. Then on the way back, we could swing by St. Petersburg. I've never been to Russia, you know. Besides, I've heard that Russian women are particularly beautiful. I would like to see for myself." She covered his mouth with her hand, then fell back into his arms without a word. She felt too full and too happy to speak.

Two hours later, she and Vinay were still lounging on the bed when the doorbell rang again. This time, Vinay jumped up, went downstairs and opened the door. He saw Ray standing before him with a beaming smile on his face and a book in his hand.

Juan was sweeping the front walkway when the FedEx truck pulled up. He informed the driver that the owner was not at home, and then was surprised to hear that the parcel was addressed to him and Rosa. He took it inside and called her to the table, then opened it and withdrew a letter, some printed documents and a leather-bound book in English. "Why would the old man send us an English book when he knows neither of us can read it?" he wondered out loud.

"Maybe it's a book of English lessons," Rosa replied. "Maybe he thinks he can order us around and give us assignments like his students. Well, we'll see about that." The accompanying letter was hand written in Stearne's characteristic script in perfect Spanish. She read it and threw it down angrily. "Who does he think he is, going away like that without saying goodbye. Now he thinks he can make it all up by giving us this house and property. Why in the world would I want a huge place like this? What would I do with it? Who will clean it? Some day that man will be the death of me, yet!" Then she broke down sobbing and refused to listen to Juan's soothing words. As he spoke, he glanced at the printed pages which appeared to be some kind of legal document. Among the strange words, he could clearly make out his own name and Rosa's along with Stearne's at the top of the first page.

The following Monday morning a FedEx truck drove up to the delivery dock at MAI and unloaded 30 heavy cardboard boxes containing a total of six hundred books.

When he heard that the books had arrived, Dan chuckled to himself, "Joe is not taking any chances. He wants to be absolutely positive that our adversaries get what they are looking for, in duplicate."

156. Scandal

On February twenty-fourth, another series of articles appeared in the local press regarding the strange events involving Stearne, MAI and *The Book*. Had it been a story regarding any other company or involving any other person, it is unlikely that the newspapers would have even bothered to carry the follow-up. But Stearne had written it in such a manner that he was sure at least one - and he hoped more - of them would pick it up. The first report came in *The Daily Californian* just four weeks after Stearne's mysterious disappearance. The newspaper was not particularly concerned about the commercial and criminal aspects of the case, but any intriguing event involving one of the most admired, eminent and controversial professors in the university's long, illustrious history was too important to pass over. The editor had immediately contacted Levin, as suggested in the press note, and Levin had verified the authenticity of the report by fax. The editor had also sent a senior student reporter to interview Juan and Rosa, but Rosa sent him packing empty-handed. The report in the DC read as follows:

Joseph Stearne, distinguished Professor of Philosophy at Cal, disappeared mysteriously four weeks ago and left the country taking with him a confidential document belonging to MAI Inc. For the past two years Stearne has served as a senior adviser to MAI, the highly celebrated Berkeley-based software house.

For years it has been rumored that MAI's products were based on knowledge obtained from a mysterious philosophical treatise of unknown authorship and origin. Although the company has repeatedly refused to comment on this assertion, the near full-time association of Stearne with the company lent credence to these reports. According to a senior executive of MAI, Stearne surreptitiously reproduced the one thousand seventy page book, and then removed it from the company's premises and left the country.

Three days ago six hundred copies of the book which Stearne had removed without permission arrived unexpectedly at MAI and were distributed to MAI employees. The book is a philosophical treatise entitled 'The Infinite Game', transliterated from the original by Joseph Stearne. Stephen Graham, professor of computer science and one of UC's most reputed experts on artificial intelligence, states that the book appears to be unrelated in content to the programs developed by MAI, though he speculates that it may have served as a personal source of inspiration to the founders. MAI's management refuses to comment on the professor's motives and has thus far refused to press formal charges or cooperate with the police investigation.

Stearne's career has been surrounded by controversy since the mid 1960s, when as a young faculty member, he took a bold position in support of the Free Speech Movement and in the anti-war protests that broke out on campus in subsequent years. Based on the professor's history of vigorously defending the right to free speech, there is speculation that Stearne may have stolen MAI documents and published them on the grounds that the knowledge they contained rightly belonged to all humanity.

Academically, Stearne is considered one of the leading philosophers in the USA today, although his recent pronouncements regarding an alternative hypothesis to explain the process of creation have met with strong opposition from both scientists and theologians.

The University administration would not comment to DC either on Stearne's abrupt departure or his alleged actions.

When Ray brought up the copy of the DC and showed it to Dan, he said, "The crafty old man is smarter than the whole lot of us—and better too!"

Inspector Ronald Byrne was among those who read the DC report that morning. "That clever old man," he mumbled to himself as he read it. "I knew he was up to no good the first time I met him."

Suddenly the whole looming catastrophe had been dissipated in one sweep and replaced by a clear route into the future. Stearne's initiative offered a permanent solution which was so simple. Dan was amazed that he had never thought of it himself. Stearne had explained on the very first night they met him that *The Book* might have been subjected to a spell that prevented it from being physically reproduced by a photocopy machine. It could only be accessed by human consciousness. Knowing that, Stearne had passed the entire one thousand seventy pages and four hundred fifteen thousand words of *The Book* through the medium of his own consciousness and written it afresh by hand. He must have tested this hypothesis months

ago and found that it worked, then set himself to that arduous task. No wonder he spent such long hours working with *The Book* in the Cloister. He was not just trying to understand it. He was reproducing the knowledge of *The Book* in a new form, while remaining absolutely true to the original text. Not a single word had been changed. Considering his age, Dan estimated that he must have spent over three hundred days working on the project between other obligations. He must have anticipated the danger and foreseen the need soon after their first meeting with him.

Surely this man had the genius of a Holmes. Had he been bent on crime—an utter absurdity for a man of his native goodness—he would have exceeded the capabilities of Moriarty. The whole plan was so wonderful and magnificent that Dan rejoiced to think about it over and over. Looking back, the past two years seemed to him like a Shakespearean comedy with a streak of tragedy running right through it. All Shakespeare’s comedies contain powerful elements of tragedy that could have led to disaster under different circumstances. In spite of the sprinkling of farcical scenes, they are filled with evil people, evil acts and great suffering that somehow turns out happily at the end. Dan had noted long ago that the plots of *As You Like It* and *King Lear* are remarkably similar, despite the fact that they are oppositely classified by literary critics. In *As You Like It*, a younger brother deposes his elder brother, Duke Senior, from the throne and exiles him to the woods, and then exiles Senior’s daughter Rosalind as well because her popularity with the people is a threat to his reign. Another older brother, Oliver, arranges for the murder of his younger brother, Orlando, forcing Orlando to run away into the forest to preserve his life, and then Oliver is forced into exile as well by the new Duke’s fury. What story could be more filled with evil and potentially tragic than this? Yet, in the end the new Duke has a change of heart and returns his brother to the throne. Rosalind and Orlando fall in love and marry, making Orlando the heir apparent to the throne. Even Oliver undergoes a change of character and marries the new Duke’s daughter Cecilia. The ending qualifies the play as comedy.

Dan marveled at the brilliance of Stearne’s strategy. After this, no one could come after them to obtain a copy of *The Book*. There was no need, since it would be available to everyone. After this, no one could come after them to prevent others from reading *The Book*. That was impossible. As of this very morning when Levin had discovered the full text of *The Book* on the Internet, it had become universal knowledge, the shared property of all humankind.

Stearne’s strategy had permanently removed the threat of a backlash against MAI. There was only one further thing that Dan could desire. *The Book* should be recognized by the world for what it was, a pathway to humanity’s future. That he knew was too much to ask for just then. The genie was out of the box and in time it would work its magic in and on the world. He was very sure of it.

157. The Order

One by one the cars pulled up to the professor's secluded country home near the tiny cross roads of Potters Place, New Hampshire, about a hundred miles north of Boston. Dent liked to come up here on weekends to get away from the bustle of the city where he could work and relax without interruption. But there would be no relaxation for him this Sunday.

Between 8:30 and 9 am all the members of the council filed silently into the room and helped themselves to the coffee and continental breakfast Dent's housekeeper had laid out before leaving an hour earlier, as she was always required to do on days when the council met. She never had any idea what they spoke about or any interest in finding out. An extra day off was always welcome, so there were no grounds for complaint. But on this occasion she knew something extremely serious unusual was afoot. The professor had been acting strangely. He lacked his characteristic energy, looked older, moved more slowly and barely paid attention when she spoke.

Dent greeted each arriving member with courtesy and a smile, but he noted their responses lacked something of the cordiality and respect he had become so accustomed to receive as chairman of the council. They came from all directions. Leonard Thompson had driven up from New York after a hasty meeting of the Roundtable the day before and spent the night at Concord. Peter Maron, representing a Christian fundamentalist group, had flown in from Atlanta the night before and stopped over at Andover. John McCullagh, was an official of the DUP or Democratic Unionist Party in Ulster, but he came actually representing the Ulster Protestant League, a more violently anti-Catholic league that was erroneously believed to have died with the onset of the second world war. It was ironic that he agreed to serve on the council with Paolo Torlonia, second cousin to the sixth Prince of Civitella-Cesi, who represented an influential group of cardinals in the Vatican. Eric Green and Albert Simon, though not actually members of the council, had flown in separately from California to report first hand on recent developments at MAI. Although they had never met before, they had been communicating by email for years. Now it could make no difference.

These people came from disparate backgrounds and embraced sharply conflicting ideologies, but they all shared a common belief that *The Book* must be destroyed or, at least, permanently suppressed. They had come together in the name of Theon and worked, as their predecessors had before them, to discover and obtain *The Book*. But in other respects they despised and deeply distrusted one another. None of them believed that Thompson or the Roundtable wanted to destroy *The Book*. The Roundtable had used it before and would use it again, if the opportunity arose, but no one doubted that Thompson's group was committed to keeping *The Book* from the general public at any cost. Torlonia's agenda and mandate were less clear. Even Dent's intentions had been severely challenged before he had been promoted to chairman seventeen years earlier. No doubt, he was the world's most vigorous and eloquent spokesman against all that *The Book* represented. But not everyone was convinced that he really wanted it destroyed. McCullagh, for one, had openly asserted his suspicions of Dent on several occasions.

All that had become irrelevant. They would listen to the reports by Green and Simon to confirm what they all believed to be true. In spite of considerable expenditure and arduous effort, the council had failed. Some of them held Dent responsible for not having resorted to more violent means to obtain their objective, while others argued greater patience and discretion might have prevented Stearne's precipitate action. Ever since he had come into the picture, their difficulties had been compounded and the object that they had been so near to possessing had moved further and further from their grasp.

Eric Green was asked to speak first. He rose, opened his briefcase and passed around copies of a brown leather-bound book to each person in the room. Each received a copy and read the title on the cover, *The Infinite Game*.

It was now evident to everyone in the room that the order established by Theon no longer had any *raison d'être*. This would be their final meeting.

158. Connections

We are inundated with information and computing power, yet how little we really know. The ordinary citizen of planet Earth already has access to more information than the entire humanity had in times past—tens of billions of pages and growing exponentially. Scientists claim to have recreated events that occurred more than thirteen billion years ago during the first milliseconds after the Big Bang. Prophets of artificial intelligence assure us that in a matter of a few short years computers will possess greater intelligence than the combined mental capacities of the entire race. Yet for all that information and computing power, how little we really know.

Honest historians confess that they still do not know the real cause of the Industrial Revolution. The onset of the Industrial Revolution is often associated with the discovery of the steam engine by James Watt in 1769. But, in fact, the first recorded instance of a steam-powered device can be traced back to first century Roman Egypt. Why didn't the Industrial Revolution occur then or when practical steam turbines were fabricated in Ottoman Egypt during the sixteenth century? Or was it the rise in agricultural productivity, the spread of democracy, universal education, the printing press, the rise of scientific societies or the rising aspirations of ordinary human beings that compelled a revolution? Every plausible explanation begets another question.

Sincere economists admit that the onset of the Crash of 1929 still remains a similar mystery. One private citizen had stopped the Panic of 1907, yet the entire resources of the Federal Reserve and the US Government could not stop its repetition two decades later. Scholars can recite thousands of facts and chart major and minor trends, but that does not really tell us why things happened when and how they did, and why not sooner or later or slightly differently. Knowing the sequence of events that lead to a consequence is different from knowing why those events have occurred.

We know that the origins of the Internet can be traced back to the US Government's Defense Advanced Research Projects Agency (DARPA) in the early 1960s and that the idea of the World Wide Web was hatched by Tim Berners-Lee at CERN in 1989. But that does not really tell us why these events unfolded as they did. Is it mere coincidence that the invention of the web occurred immediately following the end of the Cold War? Would governments, including our own, have permitted unrestricted global access to information on such a massive scale if the global political climate had not changed radically at the time? We will never know for sure. Every event has a course of action that can be traced, an apparent cause and accompanying circumstances. But knowledge of these factors does not really give us the knowledge that is power—power to change the world.

Chaos theory is a misnomer. What the scientist sees as a dynamic nonlinear system is only a result whose cause remains unknown. It may well appear like chaos to us, but that is only because we have not discovered the real determinants. We live in the gross physical whereas all power of determination lies in the subtle and causal planes. Tiny movements can have immense consequences, because everything is linked to everything else, everything is connected, everything that occurs on the surface of life is an expression of an underlying unity. What do we know of real causes beneath that surface? History only tells us entertaining stories. Grand consequences emanate from apparently insignificant events. An apparently chance meeting, a book falling off a shelf can change our life. A single individual can change the course of human events. A yogi sitting in a Himalayan cave dreamed of freedom and the French Revolution was born. One individual has the power to change everything because each individual represents the whole of humanity, is one with the whole of humanity, *is* the whole of humanity in inner consciousness. Our arrogance is born of ignorance. A child, it is said, could topple the whole edifice of the modern world. If so, then a child with Knowledge can also transform it.

Among all the questions perplexing modern scholars, none so dramatically illustrates the impotence and futility of all our knowledge than the problem of Palestine. What good is all our knowledge, what good is the combined military, political and economic power of the USA and Europe, if a tiny strip of barren land sandwiched between the Mediterranean, the Jordan River and Lebanon could defy solution by the greatest statesmen and greatest powers of our age? Great effects have their origin in apparently insignificant origins. Some theorists would argue that the rise of Islamic fundamentalism, global terrorism and the continued proliferation of nuclear weapons can be traced back to the dispute regarding this ten thousand square mile plot of Biblical land the size of Vermont, so prized by Christians, Muslims and Jews. The nationalism that gave rise to two World Wars was superseded by a four-decade-long ideological Cold War. Ideology collapsed with the fall of the Berlin Wall, only to be replaced by a more ancient feud between various forms of fundamentalism and terrorism which proudly claimed a lineage dating back to the very dawn of history. Would it ever end?

In early March 2009, Levin received a call from a senior secretary in the office of the Israeli Prime Minister asking him to return to Israel for discussions. He was specifically instructed not to inform Mossad of his arrival. Levin pressed the secretary for a more detailed explanation. He learned that the phenomenal success of *UNIAC* had finally attracted the attention of the PM's Office through an unusual—meaning non-linear—chain of events. A grid network of *UNIAC* users in Israel and North America had been working for some time to model a solution to the Arab-Israeli problem. Their efforts met with very limited results until they discovered that a parallel group of Palestinians in the region along with their associates in the USA and Europe had also developed a grid that was working on the problem. They too met with very limited success. Then Israeli and Palestinian user groups at Berkeley decided to link their grids together. They were shocked to discover that when the networks were joined, *UNIAC* started coming up with very different solutions and a very different prognosis. The Berkeley groups persuaded other groups in the US to join their unified grid. Finally groups in Israeli and on the West Bank joined too. Within a few days the combined network produced a plan for how to convert the Middle East into a zone of peace and Palestine into another Singapore within a few years. As word spread, more nodes were integrated into the grid. The plan rapidly acquired greater precision and generated a detailed roadmap.

Even this may not have been sufficient to attract official attention were it not for a strange incident. One morning when the Israeli Prime Minister came into his office and opened his desk drawer, he found a copy of the report generated by the combined *UNIAC* grid. Assuming it had been placed there by his secretary, he skimmed through the report and was deeply impressed. When he called the secretary in to learn who had prepared it, the man said he had no knowledge of the report. Everyone else in the office also professed ignorance. Mossad was brought in and failed to turn up any leads, though the inspecting officer suspected it might have been a janitor whose son—a child?—was part of an *UNIAC* user group at the University of Tel Aviv. Mossad recommended that the report be disregarded. After learning about the role of AIS in Ireland and North Korea, the PM rejected their advice. The following day his secretary informed him that an Israeli and former Mossad agent had played a central role in the development of *UNIAC*. The secretary was instructed to contact Levin personally.

It was odd, Levin thought, how much faith humanity has in technology and how little it has in the creator of all the machines, itself. It was not *UNIAC* that had discovered the solution to the Palestine problem. The solution had always been there right before their very eyes. *UNIAC* was only a tool, an instrument, an external mechanism—like language, money, the Internet—to help people relate to one another. All along, the power lay in linking people together, in overcoming narrow egoistic perspectives, in uniting human consciousness. Consciousness is power. “When,” he wondered, “would humanity cease worshipping the machine and start cherishing its own humanity?”

After consulting with his partners, Levin informed the secretary that he would come to Israel along with two colleagues—Ray and Lauren. During the week prior to the trip, they met with leaders of the Berkeley Palestine grid to examine the model developed by the grid and run simulations on *UNIAC* to check all major parameters. The results were even more impressive than previously reported.

On the morning of their departure, the partners met in the Cloister with a sense of gravity and anticipation. For Ray, the trip was the opportunity to show that his lifetime's work could help disentangle the most challenging dilemma of our times and the fulfillment of his father's highest aspiration. Ever since he had experienced first-hand the Russian invasion of Czechoslovakia in 1968 when traveling as a freelance journalist in Eastern Europe, his father had wanted to make a contribution to peace. His stint with *Newsweek* in Vietnam and his coverage of Watergate had further fueled that urge. He had never overcome the disappointment he felt when Ray had chosen engineering as a profession and then entered business. His father saw it as a surrender of idealism for money and a safe career. Perhaps now his father would have something to be proud of, Ray thought, as he imagined the implications if they should succeed. It might mean the end of armed conflict in the world, or even more. Surely, his father would agree that was a possibility, no matter how tenuous, worth dedicating one's life to.

For Levin, the call to come home was something more personal. The last eighteen months at MAI had been the most thrilling and fulfilling of his entire life. He had found *The Book*. It was everything he had ever hoped for and much more. Now he had an opportunity to live the words which had ignited his imagination at the Sunday market in Berlin eighteen years earlier—*knowledge with an unfailing power to accomplish without any negative consequences*. Could it be possible that after wandering for thousands of years along a zigzag karmic trail of action and reaction, the descendants of the ancient tribes of Israel would finally find a peace and fulfillment that were permanent and unconditional? That was something worth living for, worth attempting. Vinay often teased Levin about finding a girl who could steal his heart and settling down with a family according to Jewish tradition. Dan had never done so, even as a joke. Perhaps, Dan understood the deeper dream that really stirred Levin's heart.

For Lauren, the trip was more personal, though she argued persuasively that a proper delegation needed to be represented by Christians as well as Jews. Following Joe's advice, she had taken up a study of Hebrew and sought Levin's help to aid her. In the process they both discovered something that could not be expressed in words, although the poetry of *Song of Songs* might be a close appreciation.

They all knew this was, at best, a risky adventure. At worst, it would be a dangerous one. But as he said goodbye to them at the door, Dan felt the sense of eagerness and hope that they carried with them. Anya, Vinay and Bill escorted them down to the car, leaving Dan alone to ponder how far they had all come and how far they might yet travel together. Just before getting in the limo, Ray turned back and whispered to Vinay, "Rana and the girls have agreed to meet me in Bangalore in three weeks. It will be our first real vacation together in a year. Kurt and I were thinking that after Jerusalem, we might as well drop by Chennai to visit Joe. Maybe we'll run into you and Anya as well." For both Rana and Ray it would be the final steps in healing the rift that Oppenhauer has created between them.

159. Brindavan

In a sense Dan envied all his partners. They all seemed to know what they wanted in life and what would fulfill their aspirations. He alone remained as uncertain as on the day when *The Book* had fallen off the shelf at Moe's. It was not that he felt disappointed or unfulfilled. Far from it. From that day to this, every moment had brought new wonders and richness into his life, but it had not brought certainty. For all the knowledge he had acquired from *The Book*, he still did not know what he really sought or why.

Returning to the couch, he sat down and picked up *The Book* from the table and opened it at random. The words that sprang up from the page were like old friends come back to remind him of forgotten truth. Ironically, unknown to Dan, they were the very words read by an American journalist who happened upon *The Book* for a few brief seconds in Prague on August 20, 1968.

Freedom is the final law and the last consummation.

But those words meant something very different to the two men who read them. For Ray's father, it had meant freedom from external oppression by tyrannical government. To Dan, it had come to mean freedom from confinement and limitation by the tyranny of his own thoughts, opinions, attitudes and ego. Real freedom was not a state of politics. It was a state of consciousness. The opposite of confinement was boundless expansiveness, endlessness, *ananta* in Sanskrit. And he had learned that *ananta* is akin to *ananda*, absence of boundaries is the secret of unlimited delight.

He leaned back and became conscious of a warm glowing sensation rising gently from deep within his heart, gradually welling up and radiating out to fill his chest. From there it coursed through his nerves and muscles into his arms, down into his legs, and up and down his spine carrying with it gentle ripples of pleasure. Imperceptibly, it grew in intensity, like a leather vessel being filled to overflowing. And as it grew in intensity, it grew also in richness and sweetness, until a sensation of joy permeated his body, as if honey were oozing out through the pores in his skin. When his body was full, the gentle expanding vibration of sweetness spilled over into the room and filled the Cloister with a warm subtle fragrance of delight.

Anya felt it the moment she opened the door and came into the room. It was like walking into a warm gentle sea of love. That was how she described it to herself and Vinay much later, but just now it was only an experience without words. She was about to speak when she entered, but one glance into Dan's eyes dissolved the words before they could pass through her lips. She bathed in an atmosphere of nurturing peacefulness that smothered all cares. Then imperceptibly she became aware of a warmth stirring deep in her heart, like a spring of love suddenly awakened from sleep and sprouting forth in joyous anticipation of delight. Barely able to walk, she sat down on the couch across from Dan. He was overwhelmed by the majestic beauty of her Romanov ancestors who had ruled Russia for five generations. Her eyes were sparkling. He had never before seen such loveliness on a human face. Their eyes were engaged in a gentle, thoughtless embrace. They exchanged a world of meaning without uttering a sound. The inner trickle of joy became a stream, the stream a river, the river a flood until Anya felt her heart opening wide like a floodgate and letting a torrent of warm light pour out. Her body was as sweet as nectar, her mind as quiet as the starry sky. Glancing over at Dan, she was reminded of something that Stearne had told her, but at the moment she could not recall what it was.

The door opened again and Vinay walked in. Dan thought at that moment he had never seen anyone as graceful or handsome as Vinay. Descendant of an ancient lineage of kshatriya kings, his every movement expressed generosity and nobility like a young god. Deep pools of laughter filled his dark brown eyes. No wonder she loved him. Who would not? His eyes were merry with delight. He looked first at Anya, then at Dan, then back again. He knew he had walked into a mystery, a wonderful, happy mystery and he was thrilled. Vinay smiled broadly as he came up behind the couch where Anya was sitting and placed a hand on her shoulder. Her face glowed and laughter spilled from her lips. There was an imperceptible ringing, as of tiny bells in the air, as if the whole world was silently chanting a hymn of mirth.

160. Loose Ends

The following Saturday Anya and Vinay departed for India. Anya was full of happy anticipation, but she could not suppress a spark of concern leaving Dan behind all by himself. It was the first time in eight years that all of them would be away at the same time.

Dan awoke late on Sunday free from pressures and concerns for the first time in ages. An unexplicably happiness welled up inside. Glancing out the Cloister window with a cup of coffee in his hand, he saw the first buds gently opening on the trees. He loved Berkeley best in the springtime and spring was coming early this year. He strolled slowly around the room viewing the panorama in all directions, the rich verdant hills teeming with life on one side and the vast blue expanse of the bay and boundlessness of the ocean on the other. His cup finally empty, he returned to his favorite chair, opened *The Book* and began reading from the very first page.

A moment later the phone rang and the security guard informed him that Rose Stearne was downstairs asking for him. Who else could it possibly be so early on a Sunday morning, he thought, when all those who were closest to him in relationship were half way around the world? Rosa was sure that no man was able to fend for himself and she was always looking for a surrogate child to mother. And it was just like Anya to put her up to it. Without a second thought, he asked the guard to send her up. A few minutes later there was a knock at the door. He opened the door in amused anticipation and was surprised to see the face of a total stranger. At least he mistook her for that at first glance. It was a beautiful face, indescribably lovely, bright, vibrant, intelligent, strong. Long blond hair streamed down to her shoulders and framed her deep blue eyes with teasing, dishevelled curls. Dan stood speechless, staring. The young woman patiently returned his stare. "I'm sorry," Dan stammered. "The guard told me Rose Stearne was downstairs."

Seeing the surprise and consternation on his face, with a smile of amusement she extended her hand and introduced herself. "Yes, that's me, though I rarely use that name around here. Joe says its too confusing having a Rose and a Rosa in the same house. So he calls me Kristy. I'm Joe Stearne's niece. My uncle wrote to me in France and asked me to come urgently," she explained, still standing in the open doorway. "I arrived last night and learned from Rosa that he had left for India a month ago and she had no idea when he was returning. Rosa said you might be able to give me more information. Is my uncle alright?" she asked with a sudden note of anxiety in her voice. "I just cannot understand why he asked me to come urgently when he is not even here."

As if awaking from trance, Dan apologized awkwardly for keeping her standing out in the hall. Inviting her in, he assured her that Joe was in perfectly good health and there was no cause for concern. It was Kristy's turn to be speechless as she gazed in turn at the spectacular view out of the four windows of the Cloister. Suddenly Dan recalled where he had seen her before. It was the conference in Ft. Lauderdale. Handing her a cup of coffee, he said "I recognize you now. We haven't met, but I saw you in Ft. Lauderdale with your uncle nine years ago." A flash of recognition appeared in her eyes.

Reaching into her purse, she pulled out a copy of *The Book* and handed it to Dan. "He sent me this along with the letter. No explanation, just this. I started reading it on the plane. I've read all Joe's books, but this one is absolutely incredible."

Dan recognized the professor's intelligence, confidence and character in her face. He sat staring at her, a thousand thoughts passing through his mind. "Well, there is long story about your uncle and that book. If you are not in a hurry, I'll be happy to tell you what I know."

Now settled, it was her turn to observe, though her expression disclosed nothing of what she saw. A glint of humour appeared in her eyes and she broke out in an irresistible smile. Then a look of surprise crossed her face as she perceived for the first time the rich atmosphere of silence pervading the room. She had felt that atmosphere at times in her youth when living with her uncle assisting in his research and at rare moments meditating during the month she spent in South India, when she and her uncle visited with his friends, Raj and Mita, five years earlier. It was the last thing she expected to find in the corporate offices of an AI company in the middle of Berkeley.

Two hours later there was another knock at the door. This time it was Rosa carrying an elaborate Sunday brunch for the two of them.

By the time Dan completed his narrative, the sun was setting on the bay. "I still don't understand why Joe asked me to rush back to Berkeley when he is not even here," she said. Dan did not reply but he was beginning to think that he knew the answer.