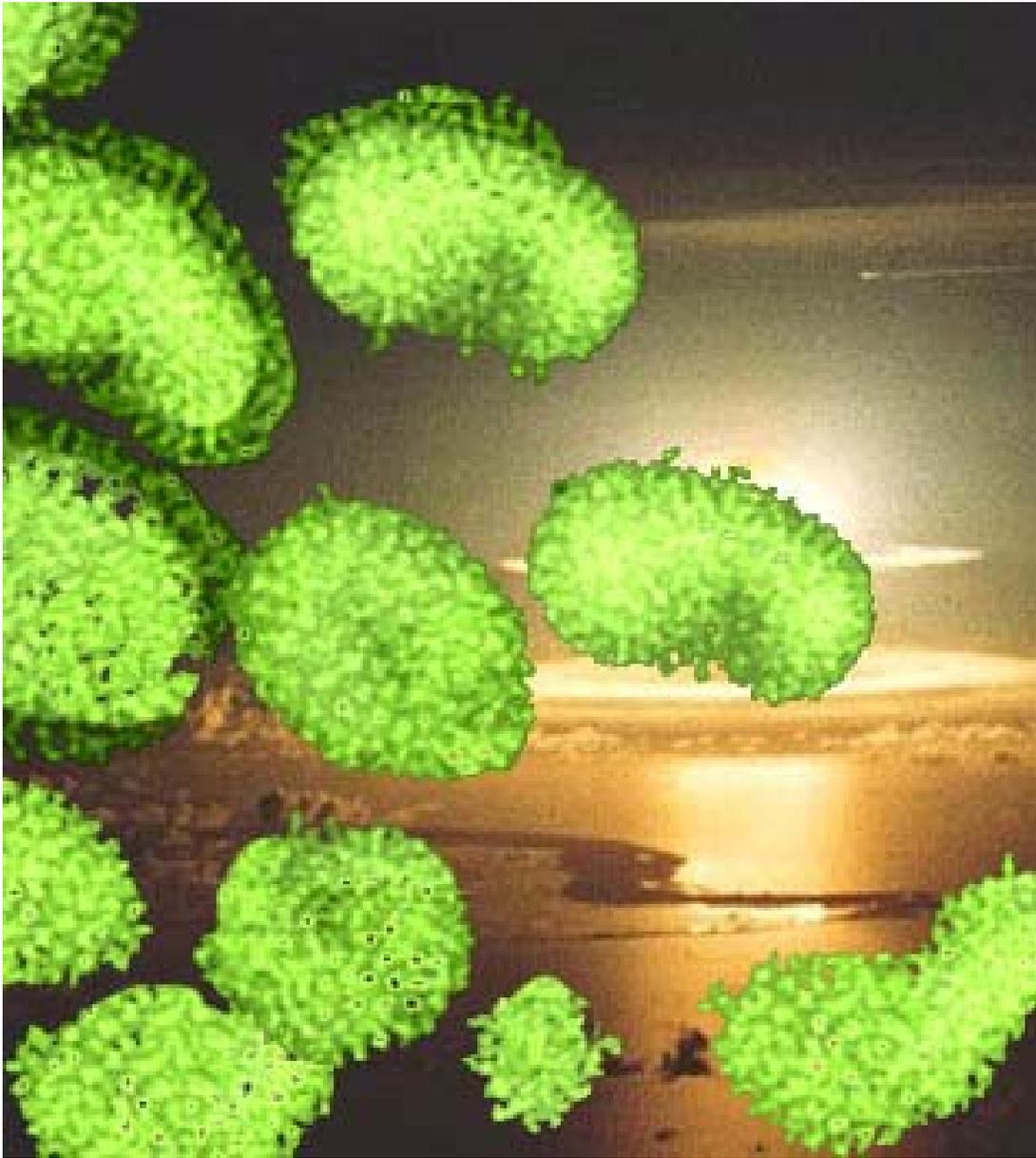


The Other Shoe



by Sheldon Breiner

The Other Shoe

A deadly virus is directed against the unbridled provocations of a superpower

Overview

A fast moving thriller involving the use of political insurgents who manage to infect most of the population of the United States with a deadly virus which will kill in five years -- unless the identification of the virus is revealed to the government in time to develop a vaccine. Carrying a biological time bomb, every man, woman and child are held hostage to the demands of the terrorists, but not told for fear of the ensuing panic,. The fast-moving intensive hunt for the perpetrators and the surprising turn of events keeps you engrossed and makes you fearful of ever getting vaccinated again.

Plot development and structure

The book sets the mood as a thriller, jumps to the scene where the country's population is in jeopardy intended to make the reader think it must be Al Qaeda-like terrorists. The protagonist is introduced and his character developed, interwoven with the basis of the search for the virus creators and search for the antagonists. The latter part shows progress, with a surprise just when the reader thinks victory is in sight. The conclusion, at present, leaves one to think about a sequel. The epilogue shows how the technology used for evil purposes was later used for life-saving breakthroughs in curing many major diseases when applied to positive purposes. I estimate the book will be about 350 pages in published form.

The crisis is established in this dialogue between the President and his Science Advisor:

"One month after the completion of the vaccination program, the CDC in Atlanta was tabulating the effects of the vaccine program, as well as the progress of the Wuhan virus which they had been monitoring very carefully. The program was an outstanding success. It seemed to stop the Wuhan virus dead in its tracks with only a few scattered outbreaks and practically no transference of the disease by normal methods such as persons traveling or through large public gatherings. The program may even have slowed the movement of this virus around the world.

Dr. Warren Elson, former FDA administrator and now, with bio-warfare on everyone's mind, Science Advisor to the President, sat smugly with his colleagues reviewing the program's results in his office in the Executive Office Building. He himself had encouraged the President to institute this much improved flu vaccination program. His basking in the praise of his subordinates during this lunch date was jolted by an urgent call from the President asking him to come to the Oval Office at once. He went down to the sub-basement and through the tunnel connecting the Executive Office building with the White House -- he was asked to be discreet about his appearance at this particular meeting.

The President sat ashen-faced, his brow deeply furrowed and his manner rather agitated. His most trusted advisor, Thurston ("Spike") Harwood, asked the Science Advisor to listen carefully.

"Spike, go ahead, read it. Tell 'em," ordered the President.
Harwood, clearing his throat, quietly began, "Today, we, we .."

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As Harwood began, the President, interrupting him, spoke in measured tones, "Warren, you must realize that what you are about to hear must not -- *cannot* - - be shared with anyone outside this room. I don't care who or what. I mean, *nobody*."

Efforts were made to insure that there were no listening devices nor Nixon-type recording machines making electronic notes of what they were about to discuss.

Harwood, with a choking voice unusual for this man of great composure, began again, relating the gist of a note delivered only one hour earlier by a Federal Express delivery agent. "Warren, we just got this note," he mumbled. Reading, Harwood continued, "80% of the population of the United States will die an excruciating death." Stopping for a moment as the gravity of the statement sank in, somehow made more real by uttering the words aloud, he spoke, ". . . in about six years from a virus which attacks the central nervous system. You will . . . You will . . .,"

Warren inveighed, "Spike, give it to me," he said, as it became obvious that Harwood's hand was shaking so much he couldn't continue.

Harwood passed the note to Warren, who quickly read the contents of the short note. The note further added that another missive would be forthcoming in 10 days, at which time certain demands will be made of the U.S. government. In order to demonstrate the veracity of this message and to prove that a foreign virus was indeed present in the population, the note stated that a virus would soon breakout in about 10% of the U.S. population, a virus which would be identified as a new one, heretofore unknown. Causing only a minor discomfort, this virus would exhibit readily-identifiable symptoms such as a cough, a generalized rash, watering of the eyes and a slight tingling of the extremities. That virus will go away on its own in a matter of days and was simply induced in a certain number of the population to prove that this message was no idle threat.

Elson sat there, staring into space, holding the note, looking again at the words, printed on one page by a computer printer on ordinary paper, like so many other notes he has read over the years.

This note, however, was like no other, nor did any note he could imagine carry with it such unbelievable terror. He sat there, his mind reeling, thinking about its contents, assessing whether it could possibly be a hoax or some kind of cruel test of his temperance or demeanor. In seconds, it was obvious that it could, no, probably was, real.

All three sat there in a daze, but to Elson, trained to be clear-headed even in the face of such circumstances, that if real, it was -- somehow -- clearly connected with the recent vaccine program. . . ."

Similar to books by Michael Crichton, Robert Ludlum, Tom Clancy

Venues for Promotion and Markets -- advertising, and possible trailer made in connection with potential movie rights and promo.

The Author is a Ph.D. geophysicist, explorer, scientist, photographer, marathon runner, and inventor. (recent press, "*Geophysicist, explorer, entrepreneur, archaeologist, marathon runner, open space advocate, photographer* — *Sheldon Breiner has made his mark in each of these roles*"

The Other Shoe

Discovered over one hundred colossal heads and other monuments buried in the jungles of Mexico for over 3,000 years (given Indiana Jones of Geophysics moniker for this), invented the gun detector used at airports, entrepreneur and co-founder of several high tech companies, one a biotech company developing cures for HIV, hepatitis, viral infections, published more than 200 papers, one book on use of a technical instruments for exploration with a million copies in print. Is a world-class expert in finding lost, buried or sunken objects -- submarines, lost cities, ships, grave sites, weapons and mineral and oil deposits from aircraft, ships and satellites. Google or Yahoo "Breiner" or use these links:

<http://www.breiner.com/sheldon/press/merlin.html>

http://www.almanacnews.com/story.php?story_id=2711

<http://breiner.com/sheldon/>

http://www.almanacnews.com/morgue/2002/2002_02_06.sheldon6.html

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T H E O T H E R S H O E

by Sheldon Breiner

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**A deadly virus is directed against
the unbridled provocations of a superpower**

It is hot in the Negev. The shepherds are listless, particularly the Kolin family, who for the past several days have been suffering more than the heat should warrant. It's hotter than even a decade earlier when they were tending their sheep in Libya, but it's not the heat that is making them feel listless. In fact, it is a virus with a 10 year incubation period, later to be discovered as a transmutation of a virus originally confined to sheep. It is invariably fatal and merciless to its victims in the final weeks. It affects the nervous system much as MS and ALS (Lou Gehrig's disease), but it attacks the central nervous system first causing convulsions, and uncontrollable pain, culminating in the shutdown of the principal organs of the body with the failure of the involuntary nervous system.

It will later be studied by scientists at the Weizmann Institute who are conducting joint cell biology experiments with Stanford University to try to recreate such viruses under controlled conditions in an effort to study the whole class of auto-immune diseases. This virus is known as the Kufra Virus (after the location of the Libyan desert community where it was first traced). Fortunately it is not transmitted from one human to another. The virus resembles any of several thousand other viruses present in the human body and is benign and undifferentiable until its time trigger orders it to multiply and within weeks affects the host. An isolated virus causing a few deaths in Israel would normally only be a curiosity for the scientists, like several other rare and fatal viruses found in other parts of the world.

Ali had the brains alright, but until now, lacked the motivation and a road map to know just where he was headed. Growing up in Brentwood, a posh conservative bedroom community of Los Angeles, he seemed destined like his boyhood friends to lead a predictably comfortable life - until the unpredictable happened. A devastating multiple-car freeway crash which killed his sister and left him at 12 years old with serious leg, back and internal injuries. Four years of arduous therapy, four hours a day paid off. The dedication to overcome this potential physical handicap would benefit him years later. So good was his attention to improvement in his diminished

muscle strength and tone that Ali became, at the age of 16, a more superior athlete than he may otherwise have been. He did all the 'right' things: excelling in three sports, dating the most gorgeous debs, and becoming a National Merit Scholar. A job in his father's giant but still privately-owned Hassan Steel Supply Company was a foregone conclusion. Liking this idyllic life he stayed near the womb and accepted a scholarship at Cal Tech, spurning the attempts of MIT, Stanford and Princeton alumni to recruit him. If the truth be known, he was hot and heavy with a girl from Pasadena at the very time when in those few weeks in spring he had to make the big college decision.

Liking science, he majored in physics, receiving his B.S. magna cum laude. His non-academic activities were almost all athletic pursuits. At 6'2 and ruggedly built, he was an all-state football and track jock in high school but was unable to really enjoy himself or exploit his talents in the minor athletic conference to which Cal Tech belonged. Outside of school he biked, skied and even earned a black belt in Karate, as always testing himself to the limits of his reflexes and coordination.

Like his father, he was a driven young man, eager to make his mark on the world. His father, an immigrant from Lebanon, came to the U.S., penniless and worked hard to establish first, a trading company in industrial products, and then, manufacturing many of these same products, making himself a wealthy man. But, he never forgot his roots, sending much of his wealth back to his homeland to help in the daily struggle of his levantine people and contributing to all manner of causes – even some destined for purposes he would not have approved, had he known.

Now Ali, wanted more than anything to achieve something like his father, In spite of his handicaps and his outstanding achievements, extraordinary in their own right, he was still not finding much of a challenge. Things came easily to him - too easily - and life was all laid out for him. His first move after graduation from college was to cut the cord and get a job designing missile guidance systems in Sunnyvale, California. Somehow he felt it was wrong to build systems for destruction and two years later opted to work in the electronics systems department of a genetic engineering company in South San Francisco. Their principal programs involve the synthesis and high-purity production of a life saving protein on a large scale.

Though the job was now more to his liking, he was still restless and longed to establish a direction in his wanderings and to have a real set of definable goals. Unlike so many of his friends who either went to law school or received an MBA, he decided he was not going to embark lockstep on this path and was not, under any circumstances,

simply going to work for his father. A change in venue was in order, the farther away the better.

After this stint in the high tech world, he traveled back to his roots in Lebanon, visited family acquaintances in Beirut and then hung around for many months with newly-made acquaintances in the West Bank. It was during this, his first visit to his father's birthplace and exposure to the culture from where he sprung, that he decided what he wanted to do that would be his life's path, as much as anyone can really determine one's life path.

He entered the Whitehead Institute at MIT, where he enrolled in a joint M.D./Ph.D. program with Harvard to major in cell biology, with a minor in proteomics. Cambridge was very much to his liking – interesting people, more self expression and a more serious outlook on things that mattered. As his first move to shed his skin, he became involved in one of the more popular causes, the Pax Universal organizing committee, an international federation of peace groups, anti-global business networks and voice of the oppressed, an outgrowth of the Iraq war protests against the unilateral, unlimited exercise of power by the American government. He grew a beard, gave away his tweed sports coat and topsiders and for the first time in his life felt he was doing something that was worthy of a real commitment. It was a long way from Brentwood and he was sure he was never going back, literally or figuratively. . .

She was a lithe, burnt-umber-skinned woman with black, tightly curled hair and penetrating black eyes. Like other French women of Algerian descent, Nicole Najah, possessed a certain savoir faire, a natural poise in all life's circumstances, moving in definite and measured motions as she applied for the job at Schering-Plough in Madison, New Jersey. She had deftly maneuvered the complex new immigration rules imposed by Marsden and Co., the then Attorney General, following the 9/11 tragedy. Her H-1B visa was granted mostly on the basis of her special skills of interest to this large pharmaceutical firm. She had advanced degrees from the Institute du Pasteur (later, Aventis) in Pau and knew much about developing and producing, on a large scale, vaccines and other anti-bacterial and anti-viral serums. This was a good time to apply for the job since the pharmaceutical industry was enjoying one of its best times in years. Moreover, Schering-Plough had successfully produced a variety of pain relievers, anti-ulcer medicines, and a new class of drugs to replace those in the penicillin family to which many bacteria have now grown immune.

One product unique to only two pharmaceutical firms in the U.S. was the development of a vaccine against several Asian flu strains related to Asian Type A Fujian virus. A serious outbreak of the Asian flu in

1957 and others since then were the inspiration of plans to inoculate 100 million persons in the U.S. Unfortunately, the program was soon called off because the Type A virus had sufficiently morphed into a sub-species for which the original vaccine formulation ordered by the CDC was found not to be effective. Now, however, using the recently deciphered DNA sequence of such viruses, aided by computer-controlled polymerase chain reaction (PCR) sequencers for rapid identification of specific strains, the identification of the strain as it starts in East Asia and moves around the world is well established. So, too, are the techniques of synthesizing safe, effective vaccines. In fact, the science and technology of developing vaccines was very advanced and practically any type of vaccine could now be developed – as long as the identification of the target virus, its genome or other microbes can be determined.

Vaccines are produced by only a few pharmaceutical companies in the world. The development of a perfect vaccine that confers immunity on persons with out side effects is exceedingly difficult. Vaccinating or delivering orally-delivered immunizing drugs to millions of people is likely to cause some side effects, however small. To cause disease or death to persons not already sick is hard to defend. Without protections from product liability suits, a pharma company will not take the risks, and the markets do not allow profits commensurate with the development costs nor legal liability risks involved. Therefore, vaccines are certainly not cash cows for such companies, though the word, *vaccine*, stems from the word, "cow," or "vaca" via the cowpox virus used by Edward Jenner, developer of the world's first vaccine for smallpox.

Approximately ten months after Nicole's arrival at Schering-Plough, there was what one might call a perversely fortuitous circumstance for the company, i.e., an outbreak of new virus. At first the virus was identified as a new type of pneumonia, found in a few patients in Guangzhou and other locations in Southeast Asia, but later discovered to be a new and dangerous form of the coronavirus. It spread to 10 countries in just 5 days, killing several, even before it had been diagnosed. No cure was yet available for this virus. Many of the viruses for which flu vaccines had been developed, were for flu-type illnesses, usually the result of viruses originating in wild birds, transferred to domestic fowl, then swine and to humans – a set of conditions unique to those in East China. This one, however, while appearing to be pneumonia, was proving difficult to isolate and almost impossible, initially, to grow in culture, a necessary step to the development of vaccines or therapeutic treatments.

The onset of the disease, as a serious threat, was confirmed by the early-warning epidemiological data collection systems operated world-wide by the Centers for Disease Control (CDC) in Atlanta, Georgia, a unit of the Federal Government. The evidence to

determine that this was, in fact, the onset of an epidemic of a new virus, initially called the Wuhan virus, was confirmed by sampling at strategic locations in the eponymous eastern Chinese city where it was first isolated by the Shenzhen Pharmaceutical Laboratory. Owing to the hyper-peripatetic habits of modern peoples, the virus also broke out in such far-flung locations as Toronto, Paris and Berlin and in sampling sites in the East and West Coasts of the U.S. This was an unusual virus, with a surprisingly different location in the DNA of the genes which express the virus than was true of other types of Asian viruses.

At each cycle of the appearance of the virus, a virus mutates and by doing so can dodge its natural adversaries, such as the immune systems of its hosts. It is as though each virus had a grand plan to survive and perpetuate itself. Each mutated virus exhibits somewhat different characteristics and symptoms, sometimes more benign, sometimes more debilitating. A virus invades a cell and takes over control of the nucleus of the cell. Once inside the nucleus, the genes, like software in a computer program, express instructions to produce the programmed proteins -- the agents for change and action in all living things.

This virus seemed to take a different route to its mutation, seemingly architected by other than a natural course of evolution. The grouping of amino acid base pairs, or nucleotides, constitutes a gene in a DNA chain. Several different genes that seem to be involved in the functions for this flu virus were represented at a different location in the DNA than other such viruses. A peculiar characteristic of this virus is that genes at various parts of the DNA chain seem to be somehow associated with each other, like cooperating, complementary members of a team, all working together to carry out its assigned purpose.

These genes and their protein products accomplished their jobs through proteins and certain molecules designed to be symbiotic to achieve the end objectives of the virus, namely, creating enzymes, killing certain cells, binding with immune system cells and other such critical biologic processes. The problem in ascertaining the identity and function of these genes in the mix of thousands of others was that it was very difficult to culture these viruses, analyze or identify the individual reactive genes. Moreover, it was exceedingly challenging to identify those genes that are changed from other related viruses and their expressed proteins, determine the function of the proteins and, worst of all, to recognize the anomalous viruses.

Immunity is conferred on a human naturally by exposure to a foreign microbe or, artificially, by introduction, i.e., vaccination (or orally, if small-molecule versions can survive the passage through the gut) by some form of the virus or its antigen so that antibodies or a cell-

based immune response is called into action by the natural defense mechanisms. Being exposed to a virus radically different than others left humans with little defense, so that there was virtually no natural-type defense. This situation called for a program of greater importance than previous vaccination programs to prevent a serious pandemic. A major vaccination program would, in effect, create a wall to minimize the progression of the disease across the globe, much as a fire break prevents a brushfire from spreading.

Previous type A outbreaks typically caused cold-like symptoms which may last up to two weeks and is occasionally fatal for the elderly and extremely young or frail individuals, or those with weak or compromised immune systems. It was estimated that more than 20,000 persons, mostly the very young and elderly or immune-compromised persons, died in the last such epidemic. The economy suffered more than \$10 billion in goods and services. This Wuhan virus portends a loss of life perhaps 10 times this amount and losses exceeding \$30 billion.

The Wuhan virus had all the earmarks of one that was far more devastating – and more difficult to control. Even more catastrophic -- to those individuals not naturally in its path -- is that the occurrence of this potentially serious virus was guaranteed to result in a vaccine program that would be a perfect setup for someone bent on using this program for their own insidious cause -- a biologic form of a "sting," as it were.

With the Al Qaeda threat of the use of bio-warfare threats and the contemporaneously-occurring outbreak of anthrax, considerable research has gone into the technology necessary to counter and protect against such bio-warfare. Perpetrators of the anthrax outbreak were never caught or identified and no party ever claimed credit. The occurrence of the anthrax and Wuhan outbreaks offered a chance to see how the U.S. government and medical emergency teams respond to such outbreaks, constituting a clever opportunity for terrorists to probe into the U.S. biological defense mechanism.

It did seem that the Wuhan virus was a biologically-spontaneous occurrence, a natural, but freak event that sometimes happens in nature.

Or maybe not.

[Introduce here the H5N1 threat and the govt. sponsored "Aviaccine" program.]

The anthrax, SARS, and false alarms of smallpox outbreaks were fresh in the collective minds of the medical research and response teams. Considerable money had been spent on biological response

technology through the Department of Homeland Security, DARPA, and other Defense Department funding programs. This time the U.S. government was going to be better prepared for such an outbreak. For good or for evil, these scares, natural or otherwise, served as a means to test the country's response to such an outbreak and its ability to trace the source and the methods of response. But the country had yet to be truly tested for the efficacy of its response. The CDC and the DOD had programs and infrastructure ready to initiate the actual vaccination program within ninety days after the confirmed determination of the arrival of any new biological occurrence, be it natural or man-made. Thus, the U.S. government felt prepared for this Wuhan virus or any similar outbreak of dangerous diseases or attacks.

Schering-Plough was one of the two pharmaceutical firms selected to produce these vaccines. The inoculation program was going to involve the immunization of almost 250 million persons throughout the United States – essentially everyone in all the urban areas and all of those except very rural people who do not come in contact with others or persons simply out of the reach of the network of vaccine team members. This program alone would bring almost \$500 million to Schering-Plough and an almost equal amount to its competitor, the U.S. subsidiary of Ciba Geigy based in Fairfax, Virginia. Schering-Plough indeed was pleasantly surprised at this windfall of business because this Wuhan virus outbreak was curiously not occurring at the predicted seven year cycle of other viruses, but at an unpredicted, unexplained period only three years after the last wave of the debilitating Type A virus when it last hit the U.S.

At Ciba Geigy the activity in the vaccine production division was almost frenetic. Much to do and so little time – staffing, laboratory setups, quality control - the whole shebang. Finding qualified personnel quickly was key. Being foreign born and unable to demonstrate his university credentials, he was lucky he got the job. But, Osman Uysal convinced the manager of the vaccination laboratory that he did indeed know his stuff and would serve as a very capable technician in the preparation of flu vaccines and later other anti-disease medicines and drugs. He said he was born in Germany of Turkish gastarbeiter parents. His accent was barely perceptible and his dialect more like that of someone from an Arabic country than from Turkey or Germany. Osman was a good worker and rarely mixed with anyone.

Reporting dutifully for his eight hour work day, he worked hard often putting in extra hours after the end of the workday and on weekends without demanding overtime pay. Ciba Geigy was a good place to work and it paid well, even for a laboratory technician. He seemed to relish hard work even more, particularly now that they were gearing

up fast for the new Wuhan flu vaccine program to provide whatever portion of the 250 million vaccine shots not provided by their competitor, Schering-Plough. While it may kill tens of thousands, the company would profit substantially from the many future outbreaks of flu viruses. Commercially benefiting from the threat of such a virus was, in some ways, a commercial instance of Schadenfreude.

The CDC-run vaccination program went smoothly, almost as smoothly as the census when one considers the task of inoculating 250 million persons in all walks of life and all parts of the country. This time there were no side effects such as the paralysis-causing Guillain-Barré syndrome and other reputed problems of the first swine flu vaccine program decades earlier or the recent bad effects of newly-developed smallpox vaccines. The techniques now developed involved the growth of the anti-viral agents in the embryos of fertilized eggs, each egg producing as many as 5,000 vaccine portions. The whole country cooperated dutifully; for in order to combat such a virulent virus as Type A, it required the cooperation of many persons to stem the flow of this highly contagious debilitating flu.

The virus developed for this program was developed separately at each of these two pharma giants. After all, they were highly competitive in their pursuit of these contracts. The labs that developed the primary vaccine was in the special lab, isolated from the rest of the vaccine production in a certified environment officially defined under the rules of Good Manufacturing Practices, or "GMP," not unlike the ultra-clean rooms of a modern wafer manufacturing facility for semiconductors, but with far more controls to avoid contamination that might have far more dire consequences than the loss of yield in a chip making plant.

While the two companies were supposedly competitive in their development and manufacturing, there did exist a common source of one key part of the underlying technology, a fact unknown to the scientific and general staff of either company. This shared technology lay deep in the heart of the basic vaccine constructs, or formulation.

Anti-viral vaccines are manufactured through such disparate processes as fermentation and purification processes or by growing vaccines in specially prepared growth media in animals or in eggs. While the development of the basic core vaccine was conducted in an ultra-clean, highly-controlled GMP facility, the production of the vaccines was conducted in less-controlled, but carefully monitored pharmaceutical manufacturing environments.

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very carefully. The program was an outstanding success. It seemed to stop the Wuhan virus dead in its tracks with only a few scattered outbreaks and practically no transference of the disease by normal methods such as persons traveling or through large public gatherings. The program may even have slowed the movement of this virus around the world.

Dr. Warren Elson, former FDA administrator and now, with bio-warfare on everyone's mind, Science Advisor to the President, sat smugly with his colleagues reviewing the program's results in his office in the Executive Office Building. He himself had encouraged the President to institute this much improved flu vaccination program. His basking in the praise of his subordinates during this lunch date was jolted by an urgent call from the President asking him to come to the Oval Office at once. He went down to the sub-basement and through the tunnel connecting the Executive Office building with the White House -- he was asked to be discreet about his appearance at this particular meeting.

The President sat ashen-faced, his brow deeply furrowed and his manner rather agitated. His most trusted advisor, Thurston ("Spike") Harwood, asked the Science Advisor to listen carefully.

"Spike, go ahead, read it. Tell 'em," ordered the President. Harwood, clearing his throat, quietly began, "Today, we, we .."

As Harwood began, the President, interrupting him, spoke in measured tones, "Warren, you must realize that what you are about to hear must not -- *cannot* -- be shared with anyone outside this room. I don't care who or what. I mean, *nobody*."

Efforts were made to insure that there were no listening devices nor Nixon-type recording machines making electronic notes of what they were about to discuss.

Harwood, with a choking voice unusual for this man of great composure, began again, relating the gist of a note delivered only one hour earlier by a Federal Express delivery agent. "Warren, we just got this note," he mumbled. Reading, Harwood continued, "80% of the population of the United States will die an excruciating death." Stopping for a moment as the gravity of the statement sank in, somehow made more real by uttering the words aloud, he spoke, ". . in about six years from a virus which attacks the central nervous system. You will . . You will . . ,"

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All three sat there in a daze, but to Elson, trained to be clear-headed even in the face of such circumstances, that if real, it was -- somehow -- clearly connected with the recent vaccine program.

Elson, sitting up even straighter in his chair as he composed his thoughts, proclaimed, "Mr. President, while I only now was presented with this matter contained only in this short note, I'm afraid to say the we must assume that this threat is real." "And, further," he added, "It may be associated with our just-completed *Aviaccine* program."

No one in the room seemed to worry about not handling the note lest any fingerprints or DNA from the sweat of the note's author would be obscured or lost. They were too frightened about the consequences to be thinking yet about finding the culprits or resolving this threat.

The virus was said to be present already in the population and could not be differentiated from any of several thousands of other viruses or viroids which are all normally benign and only cause problems during auto-immunity breakdowns or by triggering from other stress-causing chemical invasions of the body. There would be no way, without the positive identification of that specific virus, to identify which virus and *all* of the specific genes in the virus which are time-triggered to be the fatal one. Without such identification, an

anti-viral vaccine cannot be developed to prevent this insidious genocide.

A secondary threat, in some ways almost as dangerous as the presumed fatal virus itself, was also presented: the contents of this note shall be released to the public in 45 days if the initial demands are not met. The ensuing panic, possible revolution and psychological instability of an entire population would undoubtedly ensue and force the government to its knees to agree to whatever demands are made by the perpetrators. It was apparently the intent of those who held the country for such ransom to get their demands met in a peaceful way, not under such panic conditions.

Thurston stared at Dr. Elson, searching his narrowing eyes and pursed lips for some hope that he could disprove the contents of this note or that by some miracle the country could escape this apocalypse. No such answer was forthcoming. Tightly closing his eyes, Dr. Elson shook his head ruefully, thought about himself, his family, his friends and searched his mind for the possibility that this was merely a hoax. If the message bore truth, it was obvious to all present that the flu vaccine program was indeed the Trojan horse by which such a virus would have undoubtedly been introduced and distributed.

In the event that the threats were real, it was important that very few people know the nature of the note, for if anything ever got out, panic would certainly follow and the ability for the government to act rationally would be lost with disastrous results. In some perverse way, the immediate and paralyzing panic might be worse than the disease that would follow years later. All present were asked by the President to make a solemn pact that they would coordinate with Thurston any moves made to follow up or probe the details of this message.

The first course of action was the obvious: find out what happened at the Schering-Plough and Ciba Geigy laboratories that might shed some light on the possibility that this virtual nightmare was only that and not real. Richard Baker, Director of the FBI, was called in and asked, without telling him, at first, the nature of the message or the exact purpose, to find out if the laboratories were properly run and if everything was in general, copacetic. Aletha Brown, who oversaw the NSA, was asked to mine the Agency's National Instant Check System database containing the personal information, including one's DNA, of all U.S. citizens. The NICS was the much feared and maligned database started by the previous Attorney General Marsden. for just this purpose. Agents from the NSA and FBI, in turn, enlisted people from the Government Accounting Office as a cover to check on the

techniques and of course the personnel involved with the production of these vaccines.

Within hours they found that Nicole Najah, who managed the laboratory technicians in the embryo laboratory at Schering-Plough, had not shown up for several weeks without explanation and without picking up her last paycheck. Her co-workers were worried about her since she lived alone and apparently had no close friends. The FBI checked her identification and confirmed that she had a thorough background in biotechnology and was even known by other scientists in the U.S. since she attended many international conferences. In checking at Ciba-Geigy, the investigation showed that Osman Uysal had worked there about the same length of time as Nicole and was himself a Palestinian sympathizer, trained in Syria and known to have introduced bacterial warfare plans in Iraq, actually implemented in the Iraq-Iran war in the 80s. His credentials and his name were false. He and his activities were normally well-monitored by the CIA and passed onto the FBI once inside the U.S. Not this time.

These discoveries lent considerable credibility to the contents of the note and heightened the anxiety even more as to what the possible demands might be and who, including Al Qaeda, Al Aqsa Brigades, or possibly, North Korea, was behind this insidious, remorseless act. With the formation of the Department of Homeland Security in the aftermath of 9/11, responsibilities for coordinating the response to this threat would fall in this Department. However, the senior management was new and untested and not within the inner circle of the President. Thus, it seemed better to conduct the first investigations using a select team of highly trusted FBI and CIA investigators without divulging the specific reasons for the search. The FBI, of course followed their original charter and looked within the U.S. and the CIA, operating within the restraints imposed by Congress, conducted investigations abroad.

A week passed. Nothing turned up. More than 10 days passed waiting for the other shoe to drop, but no more notes, no demands. The select team who knew about the note grew even more apprehensive and confused. Perhaps it was a new game the blackmailers were playing. Perhaps the whole thing was only a hoax. It was very difficult for the President and his Chief Advisors to conduct business as usual under such particularly tense and uncertain times.

After a series of thoroughly exhaustive discussions, the head of the National Security Agency and Thurston concluded that it simply must be Al Qaeda behind this plot. Only this notorious group, who perpetrated the 9/11 tragedies and promised more would have such heinous motives to prompt such threats or such actions. And they certainly have the capabilities to carry this out.

The President was a deeply religious man who had faith that everything would turn out okay. He was a vehement xenophobe and immediately joined the band wagon of those who believed the late Osama bin Laden's Al Qaeda was behind this. Nevertheless, the President was agitated and getting more anxious as time drew past the 10 day period. He wanted to take some action against the perpetrators and not simply wait for the demands.

A week passed with the leadership under increasing pressure and severe anxiety. But the inner circle included no more than ten people (at least this number and their spouses or companions) in the U.S. - the entire extent of those who knew the contents of the threats in each of the countries. It was some kind of miracle that it could be contained so well, so long; but it obviously could not be contained much longer as the tension was increasing. Undoubtedly time would cause mouths to talk, particularly when one thought about one's family, one's lifetime and the terrible catastrophe awaiting an entire population or populations without the possibility of hiding or running away from this biological time bomb.

The realization that one had inside herself/himself the inevitable seeds of a horrifying destruction was at once both terrifying and frustrating: *terror*, from the impending loss of family, friends and oneself, all facing a traumatic way of dying; *frustration* from the fact of having, internally, a time bomb, like a terminal case of cancer, except that there are no doctors, no cure, and no place to run or hide or the means to do anything under the sun that will prevent it - anything except to accede to *all demands* of the terrorists - and still not be sure it will work.

The other shoe had finally dropped: a note was finally received by Thurston Harwood in the White House. The note to the U.S. was immediately opened in front of the President. Several of the key insiders were called in to discuss the contents. The demands were incredible and not at all what anyone could possibly have expected. First, there was a demand for \$30 billion to be distributed to a list of organizations enclosed with the note. This list was comprised of other peace-driven and some environmental groups throughout the world. This money was to be distributed on a grant basis and was to be paid in U.S. dollars.

The second and more serious demand was that the U.S. destroy 99% of its military capability including its nuclear arsenal, other armament, equipment, personnel and research. All things to go are those that represent the real and virtual trappings, other than

economic might, that confer the title and might upon a superpower. The destruction of such weapons and means to deliver such must be destroyed in a manner prescribed in an enclosed document. It must be viewed by the general public and, in the case of the nuclear weapons, must be done harmlessly by well known chemical reaction techniques. These techniques included separating the plutonium and uranium 235 triggers and transmutating these elements to others lower on the periodic chemical table where they would be rendered into such materials as polonium, lead, and radon.

The note also indicated that the persons behind this plot were well informed as to the total size of military capability, and the destruction would be closely monitored. They said in return for these actions, they would slowly, over a three year period, release to the government, various details about the identification of the virus. In this three year period they would expect the vast majority of the military complex – up to 99% – to be fully dismantled.

Kalila

[develop a profile, background upbringing, parents mixed heritage, examples of her character, demeanor and spiritual interests. . .]

Kalila and Ali met in one of the popular seafood restaurants in Cambridge. She and her roommate had just sat down at a table for four. Ali had been waiting for 15 minutes in a line which led from the hostess' desk. He stared at her remembering her from a local peace gathering, but had not actually met her. She caught his gaze, looked up from her menu and smiled demurely. Invite yourself to her table, he thought and why not, it would be at least another 45 minutes if he had to wait for space at the counter. Besides, something about her had fascinated him, something he wanted to explore further.

Kalila received her A.B. from Radcliffe and was working at A.D. Little, an industrial research firm conducting operations research studies. They later got to know each other though through their participation in the anti-war marches that preceded the short-term war in Iraq as both were very active in the movement.

The anti-war movement took on a new focus after this Iraq war, driven by the bold, and sometimes arrogant attitude taken by the U.S. government in threatening pre-emptive action against any country deemed, by the leaders of the American government, to be a threat to the U.S. or even to its own people. The right, or rather, the hubris, to declare such threats and impose one country's rights over others derives its power and perceived authority from its position as the world's only superpower, The world has not had such a single country that could go unchecked, since the Ottoman Empire of the 19th century.

This group, a world-wide network, communicating through the Internet, called itself Pax Universal and included many in America. Pax Uni, or, "Uni" for short, was founded on the fears and anxiety induced by the consequences of one country imposing its will, its culture and perhaps, eventually, its morals and religion on all others – a form of military-backed hegemony at best and a colonial empire at its worst. They were sufficiently active to have been part of a group which decided to take matters into their own hands since governments, especially one that could react to public pressure, namely, the U.S., were not responding at all to the demands of these one-time peace advocates-turned anti-superpower militants.

It was decided, as happens with such consensus groups, that a small group, that considered itself the steering group, determined the agenda and also the means to drive it and achieve a form of power over governments in a way that even a superpower had to listen. How can a loose-knit, poorly-financed world wide group achieve its mission? And how would it be able to do so soon, before too much damage has been done to the world order and to the liberties of otherwise free peoples around the world?

The answer to these questions of wresting power from a superpower lay in one of the two core assets that underlie the strength that gave the underlying authority to its superpower status: technology. The other asset is its economic might. But it was, after all, technology that enabled America to achieve its economic power, achieved through the efficiencies gained through productivity and technical breakthroughs, not from labor, or market power, by itself. It was technology that made the U.S. the world's first atomic power. It was technology that gave the U.S. its lead in computers, medicine, electronics, and, of course, military strength.

And it would be this technology exploited by others and cleverly conceived, that would be used to turn the tables on this, out-of-control, juggernaut. Yes, as has been said, "power corrupts and absolute power corrupts, absolutely," . . . even for a superpower.

Using the Internet to communicate, allowed millions of people all over the world to coalesce their goals and assets. Computers would give them a peer-to-peer capability that did not rely on one central source. Virtual meetings could be held in virtual time and yet meet and focus their objectives. A few resourceful persons in positions of leadership, would act to carry out the group's objective.

Pax Universal selected, as its weapon in this struggle, a means that will allow them to gain significant leverage over an infinitely larger opponent. As is the strategy in martial arts, appropriate the enemy's own weapons to win. What could be better and more cleverly ironic as a winning strategy than to use *technology* to bring a megapower

to its knees! This stroke of genius was an outgrowth of a small, affinity group comprised of persons in the biotech community. Their plan was to find a few properly qualified genetic engineers to design a specific virus, patterned in structure and design after a virus found in nature, one that would be dormant for many years; but when activated by its own time mechanism, would grow rapidly and be fatal to its human host.

A truly multinational network of scientists was quietly and selectively sought out from the U.S., Britain, Germany, Israel, Japan and France without divulging the nature of the plans. The Pax Universal movement now had a million supporters from a hundred countries. Identification of the persons developing the engineered viruses and/or viroids would be known only through a triple blind communication network, that is, the leader of the Action Brigade, as it was known, would anonymously know a person who in turn would anonymously know a person who in turn would know the molecular biologist. It would be handled in this manner so that torture, sodium pentothal or threat to loved ones would not divulge the genetic designer or identity of the virus. The more times one is removed from another, the more difficult it would be to trace the identity of those who knew the virus.

It was the agreed-to charter of this group that if they destroyed the power that gave authority and dominance to the superpower, then there would be a time for the world to assume some of that power and await such other power, namely, China or the European Union, or some other para-national group to balance the sole power of America. The toothless, politicized United Nations proved, ironically in the months before the American-Iraq war that it not only could not save the peace, but that politics and countries' self-interest dominated the agenda and rendered the UN unable to stop a war or remove the cause for war.

If there were no superpower for a finite period of time in which the military might remained out of commission, the world could buy time and encourage either a peace-driven status quo or encourage at least two superpowers, like the ones that kept peace during the Cold War on the basis of mutually assured destruction between the U.S. and the Soviet Union.

Meanwhile, if Pax Universal had sufficient funds, they could mount a propagand campaign the likes of which the world has never seen. They could outdo Madison Avenue and could gain the respect of even hard-to-convert portions of the population as to the permanence of peace once the military arsenal was destroyed. It was that first step which countries were unwilling to take unless forced to, for example, by a superior power such as those who now wielded the power of the viruses in the populations of the U.S. Thus, the American leaders

would be forced to disarm by reasons of saving their respective necks. Once they did not have these weapons, they, or rather, the electorate, might be convinced that they would have no reason to have such military might in the future -- provided that the population from top-to-bottom were thoroughly educated. In other words, it took an "outside" force such as this insidious virus and its molecular biologist creators to make it possible to bring about the emasculation of this Golem on steroids.

It did not bother the morals of the leaders of Uni to put in jeopardy the lives of 250 million people. It was, after all, this nation who elected the leaders of the superpower which, in turn, exercised this world dominance and threatened the liberties and true sovereignty of the rest of the world.

The group felt it would probably take three years to accomplish the propaganda campaign. Certainly by the end of five years, absent any propaganda campaign, America would probably feel once again to build, in secret, its capability, in one fashion or another, to spring upon the world when it felt it had to retake the advantage. Therefore it was very important to make use of this three year period and the maximum use of the money to create this worldwide education program. It was a race between this propaganda machine and the clandestine desires of the superpower to rearm. The starting gun is the initial elimination of the arsenals. The fuel for the propaganda machine is money -- money that would far surpass the dreams of any advertiser in America or the world. Imagine the power of that money! The power of the propaganda versus the suppressed desire to re-arm. All of this set in motion by a living organism too small to even be seen.

Summary of the plot follows -- to be expanded as the bulk of the book as a hunt for the creators of the virus and the adventures in doing so and what is done about it, when found.

A couple of years into the program, there appear to be cracks in the modus operandi of the Action Brigade and its umbrella group that conferred power on it, Pax Universal. The money seems now to be diverted not only to peace groups, but to others as well. Power and greed have gone to the heads of the organizers. Large sums are being funneled to the PLO, to the Falun Gong, to Islamic fundamentalists, to remnants of Al Qaeda, to Sendero Luminosos, to dictators in Africa, to the Kashmiri separatists, and to many other such groups around the world. No longer are the ideals of the group focused on reigning in the abusive powers of America. No longer does the group intend solely to rid the world of dominant governments, for now it appears the group has more lofty goals as

determined by its leaders on their own as important enough to use these funds.

Soon there is squabbling among the leaders as to their goals and objectives. The actions and ideals of the group are not so righteous or pure as they were in their conceptual period. Monies are being diverted not only for these political purposes, but for the personal gratification of several. It seems that no one is immune to the inevitable manifestation of power: the temptations and greed which assuredly follow. And the effects of power on its practitioner.

“Power corrupts and absolute . . .”

Kalila and Ali get disillusioned and begin to feel that the power is now in these leader's hands and not in the group as a whole. Such power, corrupting as it is, is perhaps even more dangerous than in the hands of those who are freely elected in the U.S. It may have been better to have the power in the hands of rational leaders of large nations than in the reckless abandon of self-appointed leaders, who put themselves in that position merely by anointing themselves, not by any group consensus. Better the devil you know..

Ali and Kalila together decide to try to determine who engineered the virus and how they can identify the specific structure before it is too late, before the mad power of the runaway leaders of this group exercise their ultimate power in not releasing the information to the government of the U.S. With compassion toward the innocent populations of those who will die by the hundreds of millions if nothing is done soon, Kalila and Ali decide to act before the links in the triple blind disappear. They also feel that the secret reason that lay behind the American government's deciding to destroy the military capability, that is, that they did so under coercion of this terrible threat, will one day get out and cause the inevitable panic the government once feared.

For all intents and purposes, the leaders of the U.S. government readily agree to a hastily called disarmament conference to announce that it has a change in heart towards disarmament, The decision to do so was done, it seems to the public, in the face of winning the war against Al Qaeda, capturing and executing Osama bin Laden, capturing his aids, defeating Iraq and negotiating the removal of nuclear means with North Korea. The path to peace, as put out by the President's press, was better served without such large might that has generated such hatred and envy by the rest of the world. They even agreed to support a world-wide propaganda campaign to discourage the use of nuclear force. It even took many of their advisors by surprise. Of course, that part was a much camouflaged, seemingly peace-loving movement on the part of these 'courageous'

leaders. The President knew they had to meet it when the 'proof' viruses broke out 30 days after the inoculation of the U.S. population.

The powerful leaders of this mighty country were brought to their knees by this biological stranglehold. Their very lives were being held hostage by an enemy within, so minute that it can barely be seen by the most powerful electron microscopes. They did not need any more proof to convince them of the insidious nature and the truth of such internally-introduced biological. they must pay the ransom to recover their lives even if they do not trust these faceless, cruel terrorists who control their fate.

In America there were many reminders of such circumstances whereby large numbers of innocent people unknowingly take into their own bodies a biological, slow-acting deadly poison capable of destroying their lives: contracting hepatitis C, contracting the AIDS virus through blood transfusions, the deaths of workers who died of lung cancer or asbestosis 20 years after working on asbestos, latent manifestation of Creutzfeld-Jakob disease brought on from eating beef from BSE-infected cows many years later by a prion, a particle unknown (or at least, disputed) for years. Even the discovery that viruses responsible for harmless measles or chicken pox would, 30 years later, cause the destruction of the nervous system of hundreds of thousands of people as victims of an auto-immune disease.

Many of these are time bombs originally introduced in people by seemingly harmless viruses or other similar invaders which can lie dormant in the body for years and suddenly break out causing the terrible destruction of a marvelous human machine. There is ample proof of threats which abound in nature, but none has equaled the evil design of this man-made virus, inserted by man into other men who would be innocent martyrs to the cause of saving the rest of mankind from the maverick maneuverings of a rogue superpower.

To make it both difficult to decipher and more effective at its goal in destroying a human at a pre-determined time in the future, the scientists borrowed a page from communication theory. A technology used for years by the military to limit jamming and eavesdropping on field wireless communications, which is now a standard for mobile telephone communication called CDMA, is the use of spread spectrum. Instead of one single band of frequencies, many small *separate* slices of the frequency spectrum are utilized to transmit and then summed by the receiver so that the total of all of these slices of frequency can be used to transmit and receive very low level, separate signals, each slice immune from the effects of being detected and thus disrupted.

In the case of the virus, various genes are each coded to express a protein, which by itself appears to neither unusual or harmful.

Several such genes, however, each producing a specific protein that act together in a congruent fashion to achieve the real goals of the virus -- to destroy its host. The mechanism and the mutual actions of the proteins, are undecipherable. While this would not occur in nature because the loss of the host would not allow the virus to propagate and thus survive generations, it would be very effective for the destruction of this one-generation host.. a human being.

In the designed virus, the architecture of the genes, their location and the directed actions of the proteins expressed by these genes all act to achieve the desired, devious and devastating results. For example, one protein creates an enzyme that modifies the length of the telomeres, the tails of each chromosome that determine the number of times a cell can divide and thus the eventual age of the cell. Thus, the telomeres, so modified, can function as a clock -- a biologic timer for the virus. Other proteins act on the immune system by binding to T cells, rendering them unable to use the antigens of the virus to create an immune response and thus unable to defend the human host.

Still other proteins from the gene sequence combine to instruct a resulting third protein to fold in a way so as to provide the "detonator" of the virus, halting the proper functioning of the acetylcholine, the chemical that conveys signals in the nervous system for most critical functions relating to the major organs of the body.

All of this makes it exceedingly difficult to decipher enough, to identify the culprit virus, determine the genes for encoding these proteins and to study this virus outside the body. Insidious, inevitable, in vivo.

The search for the identification of the virus proceeded at an exciting pace and always in the nick of time until the scientist responsible was finally discovered. An identification of the virus was finally obtained, which will later be used by government and university scientists using recombinant techniques to design monoclonal antibodies to fight the specific virus.

[The bulk of the story centers around the sleuthing by Ali and Kalila to uncover the scientists behind the virus, the chase in each of the countries, the decryption of the genetic codes for the virus, etc. A connections is made with the Kufra virus to correlate both its telomeres-based timing mechanisms and the proteins it uses to attack the nervous system. A connections is uncovered by Ali that links the telecommunications background of one of the molecular biologists to realize the analogy used to code the genes - a breakthrough as stunning as cracking "Enigma" or the discovery of the Rosetta stone.]

It was only serendipity, however, that provided the most chilling discovery: one of the scientists thinks there may be another virus, created by another scientist unknown to him directly, but discovered in the course of dealing with his intermediary who asked him to develop the virus in the first place. In other words, there may be yet another shoe to drop which the original perpetrators might have held out as their final ransom, only to be declared upon the population and its leaders when they so chose. Or at such time when the nations once again re- establish the military might as they may inevitably do when the ransom is paid, the arsenal destroyed and the hostage is finally released, this hostage being, of course, the identification of the apparent virus. If there were another virus that could be used as a back-up to the perpetrators when they need this extra "ace up their sleeve", what is to stop them from having two, five or ten more viruses, each with different life times and entirely different characteristics, prions, viroids, naturally-mutating viruses – a Trojan Horse in many incarnations – to be pulled out one by one as each situation dictates? Their evil minds could prey upon the weakened governments as their people succumb to the demands in order to save their lives, the lives of their children and the life of their nation.

It's not almost as though the other shoe has yet to be dropped, but that the person living upstairs is not a man with two feet, but a centipede with one hundred.

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Epilogue

Scientists used a method called gene shuffling, which enables a scientist to put several viruses in a retort and create forced, rapid evolution to produce millions of permutations of the various gene expressions and the resulting proteins. These proteins and/or molecules were, in turn, embedded on chips used in "high-throughput" assays to determine the specific and objective products that could then be analyzed for their toxicity and effects on other cells, proteins and key physiological processes to counter the effects of the toxins produced by the proteins introduced by the viruses. The data analysis was facilitated by some very advanced bio-informatics analyses and proteomics modeling and protein-folding programs running on large Linux clusters (super computers) to produce the results that were needed to identify both the genes and the means to render them harmless. All of this was, of course, modern technology to combat the "evil" technology hijacked by the terrorists from technology originally developed by the superpower, in a way, to achieve its superpower status. And it worked. Most of these modern technologies had been reduced to practice by 2010.

All of the principal leaders were eventually apprehended or killed, before any serious outbreak occurred. Some of the scientists were apprehended and, in the style of the captured German rocket scientists from World War II who were members of the SS, but were more valuable as rocket scientists for the U.S. missile program, these scientists were ordered to help develop drugs and therapies for many types of cancers and infectious disease using their knowledge. Most ironic of all, the spread spectrum method of combing uniquely useful protein interactions became a popular and productive technology for drug development resulting in numerous medicines for auto-immune disease and cancers.

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