

Trojan Horse

Frank Sanders

Trojan Horse

“Madame President, the second part of the alien message has just been received and decoded. Here’s the transcript.”

The aide handed two sheets of paper across the table where the U.S. President, Virginia Mercat, had just convened a meeting of the National Security Council. The rest of the council looked through their own copies as President Mercat scanned hers. The first page was old news, a message received from an alien civilization ten weeks before. It read:

“Greetings to the species called ‘humanity’ from a civilization of the stars. This transmission will reach you on 15 April 2012. A sentry probe near your solar system has monitored your radio emissions. You are apparently within a century of a scientific discovery that will make you star faring. A legally required message will arrive 25 June explaining the requirement for joining us. This preamble will repeat until then.”

Humanity had analyzed this text innumerable times since space-based radio telescopes had detected it on a hydrogen-line frequency. The excitement had been unbounded. There had been no end of speculation as to what the ‘requirement’ to join the star-faring civilization would be. A few people hoped that the second message would contain a revelation about the scientific breakthrough that was to occur. Some others thought the term ‘legally required’ sounded vaguely ominous. But the general consensus was that the ‘requirement’ would involve a binding commitment by the human race to some high moral principle like total disarmament, the end of nation states, or world peace. In any event, no one seriously doubted that humanity was on the verge of its most historic

Trojan Horse

breakthrough since the beginning of agriculture and the first construction of cities. The President flipped to the second page as the rest of the council did the same.

She went white as her eyes ran down the page. “Oh, no, no...,” she murmured as everyone in the room began to gasp and cough at the same time.

“Regrettably you will likely achieve the critical technical breakthrough before overcoming gross societal retardation. This circumstance is unacceptable. We have debated two options: annihilate you summarily or allow you to undertake a series of rehabilitative tasks to develop your ability to join us. Our decision is to give you the tasks. They are neither arbitrary nor capricious; their purposes will become clear if you ultimately join us. The penalty for failure will be your destruction, so as to pre-empt your capability for star travel.”

“Your first task will be to detect and neutralize a large Oort Cloud object that we diverted into a collisional orbit with your planet as a precautionary measure long ago. We selected an object large enough to ensure that its impact effects will destroy you as a civilization if not as a species. It will become a comet as it enters the inner solar system and will be very beautiful just before it strikes. It will collide with your planet on about 22 November 2015. Comets are fragile; be cautious as to your method of neutralizing it.”

“Regrettable as this circumstance is, we have explored all avenues and there is no other viable choice. We do believe you may ultimately have much to offer the galaxy. We have

Trojan Horse

already downloaded your civilization's literature, art, and music via radio links to your Hypernet, so that these wonderful things will be preserved if you are destroyed. We especially like your animated movies."

"If you succeed, another test will occur 35 years from now. In accordance with legal requirements this message will repeat until 30 August 2012."

The President cupped her right hand over her mouth as she spoke. "It's like a form letter from a goddamn collection agency. Has this been released yet?"

The aide cleared his throat. "Yes, it's going out now, everywhere. Everyone on the planet will have this within the next twenty minutes."

Madame Mercat turned to the council. "Do we have any more information about the source of these messages?"

The Defense Secretary spoke up. "Nothing new. The astronomers' long baseline arrays have localized the transmitter at about half way to Alpha Centauri, in the Oort Cloud region. It's apparently too small to be resolvable by any of our telescopes. I'm informed that's all the info we've got, or are likely to get."

The room went silent for some seconds. Then the President spoke again, calmly and deliberately. "All right, fine, the clock's running. Convene the International Ministers'

Trojan Horse

Council via teleconference and put in a request for an immediate plan of action by the National Science and Engineering Council. Also, I need a report by the end of the day on how this situation does or doesn't fit under the National Emergency Contingency Plan. Mainly, let's start sorting this out. Solving this will take all the brainpower we can get. And one more thing..." she paused as she scanned the faces along the length of the polished mahogany table.

"...what in the hell is the Oort Cloud?"

"What's the cube root of 127?"

"5.0265256953, et cetera."

Steve Ramsey was staring down at his pocket calculator display as Jeannie Mascarenas gave him the answer. His index finger was already moving across the keypad for the next part of the problem that he was going to read to her.

"Take the log base two of that."

"2.3295615623, and so on."

"And e to that power?"

Trojan Horse

“10.2734362833...”

“OK, Jeannie, now take the inverse...” Steve was going to keep playing this parlor game with her all night apparently, but she was looking bored; the novelty of her newly installed MathSavant Implanted Computational Coprocessor (an ICC, or “icky”, as they were called within the emerging bio-computer-implant industry) was already wearing off for her and another member of their old college foursome, Ken Allen, who was at the table. The waiter interrupted for their food order. Ken used the break to change the subject.

Staring up at the ceiling and then glancing at Jeannie he asked, “What I want to know is, how do you experience this thing that’s in your head, wired into your brain? I mean, how do you ask this implant a question, and how do you experience the answer?”

Jeannie leaned forward, put her left elbow on the table and cradled her forehead between her thumb and forefinger. Her long black hair fell in curls around her hand as she flicked her head sideways. The restaurant track lighting threw the right side of her face into high relief. Her nose crinkled slightly as she thought about her answer.

“You design these things. You ought to know. You always know everything, don’t you?”

Trojan Horse

He shrugged off her barb with another glance toward the ceiling. “Hey, I’m just the software designer. Call me paranoid, but there’s no way I’m letting Mind Link Incorporated actually put one of those things inside my body. So I gotta ask the customers what it’s like to actually use these things. Trouble is, I seem to get as many answers as there are customers. So I just want to know how you experience this gizmo. Is it like having a demon inside you, or what?”

She cocked her forehead down slightly toward the table, put her lower jaw a little out of joint, and stared back at him from underneath her eyebrows with what Steve thought was some disapproval. Jeannie was never known for her sense of humor and things had been a little tense between the three of them all evening, since she had announced her plans to move in with their fourth and last member, Rod McAllister.

She exhaled slightly. “I don’t know. It’s just there. Like when you think about, how much is five times twenty, and you just know the answer is a hundred.”

“That’s the trouble with engineers, like when they travel to the Moon and describe it as big and dusty and gray.” Steve was looking at her, but he glanced toward Ken as he continued. “Can’t you say what it’s like? Do you see anything? What goes on inside your mind’s eye?” Now Steve was going on the attack a little. He felt like getting even for something, but nothing he could articulate.

Trojan Horse

“Well I don’t really know, Steve. I guess nothing that would satisfy a man immersed in the flowing poetry of paleontology.”

She always had a short temper and her irritation was showing, but then she leaned back slightly and closed her eyes. Everybody went quiet and the clinking dinnerware at the next table seemed to get louder. Steve looked past her head at a muted video news link in the far wall. The text ticker at the bottom showed the date as 5 June 2015.

Steve wondered whether it would be possible to feel the math implant beneath her scalp, through all those beautiful black curls...if he could run his hand through...but no, no, not that. Don’t think about it. He ground the thought out of his mind and wondered whether the news about the emergency comet rendezvous might be about to improve. No, evidently not, judging by the endlessly replayed video of a nuclear explosion in space caught by a deep-space assessment camera. The breaking news wasn’t improving.

Jeannie leaned further back and most of her body fell into a spotlight. Microwave weapons engineer or not, she dressed well and at the age of thirty-five had the money, taste and experience to put together outfits that everyone noticed whenever she walked into a room. This evening she was wearing a black outfit with a square-cut neckline wool top and a black knit wool skirt that went to mid-calf, where it merged with her black boots. She crossed her right leg and her knee fell into the light. Ken, an inventor cum software design engineer, and Steve, a paleontologist, were both dressed in typical low-rent techie geek chic: T-shirts, jeans and tennis shoes, with non-matching socks. At least

Trojan Horse

they weren't wearing flood pants. Ken was a big guy in his mid-forties, with a balding head and a beard; he looked a little like an old image of the young Charles Darwin. Mike was in his mid-thirties, trim and clean-shaven with dark hair. He was handsome with his piercing blue eyes but always unsure of himself in social situations.

"Here's what it's like," Jeannie continued. "I see the numbers in my mind's eye. But I don't see them as shapes. I see them like objects in another room, that I might have walked through and viewed a few seconds ago. They are totally real but they have a virtual, unreal aspect. Like when you hear a voice in your head, but you don't hear it as an actual sound. I see them, but not as actual images. You don't really sense its presence, or its activity. It's like any other part of your thought system, any part of your own mind. I'm not consciously aware of its actions. It does what it does without revealing its presence to my conscious self. You should try having one of these implanted, then you guys would know."

"What would a paleo guy need with a math coprocessor?"

"Maybe nothing," Ken said, preempting Jeannie. "But we could just as easily put one together that could contain a catalog of every dinosaur specimen from the lower Cretaceous of North America, or with the stratigraphic details of every rock bed that has yielded mammal specimens in the Asian Mesozoic. Hell, we could store every scientific paper and article in your entire field, right on board. You could call up all that information on demand, just by thinking about the right subject words or authors."

Trojan Horse

“Or maybe you need to talk with some foreign colleagues on a Mongolian expedition and you don’t want to come off as a typical butt-head, English-only American who can barely stumble through the local phrases for hello and thank you. No problem. You have our East Asian Languages translation software package uploaded, and you instantly understand every spoken and written Mongolian dialect like a native. We’ll throw in the subtle nuances and some Mongolian cultural do’s and don’ts for a little extra money. And if you’re willing to spend a few hours training yourself, you can let it control your vocal cords and your arm-hand motor systems. Then you can seamlessly translate your thoughts into spoken and written Mongolian. You name it. We’re also working up real-time universal wireless data links from these things to Web data terminals, so that anybody can access anything on the Hypernet at any time, from wherever they happen to be sitting. There’s no end in sight to our extensions for your mind’s capabilities.”

Ken wasn’t kidding. He was looking forward to an endless line of development for implantable mind-linked processors, and as the main inventor and chief software designer for MLI his already considerable income was assured of major growth. Even with the economic inflation of 2015 and the high cost of living in the new boom area of north Idaho, he was assured of an easy lifestyle. His problem from now on would be to avoid the boredom of decades in a job that would involve mostly management duties.

Trojan Horse

“In fact, don’t say too much about this to anybody, but we’re working on links that communicate between people’s heads via wireless—people with the right software will communicate wordlessly, like mind readers.”

“As if it were worthwhile to know people’s thoughts?” Rod had apparently caught the last part of Ken’s revelation as he slipped up to the table from out of the darkened background. He put his arm around Jeannie’s shoulder and she took his forearm in her palm without looking up. He bent his head slightly, as if to kiss her on the cheek, but she turned her head slightly and he missed. Steve wondered silently whether Rod was entirely as clever as he thought himself to be. He and Rod had grown apart since the four of them had met in graduate school fifteen years ago. They had all been rising stars in their fields then, attracted to each other by their shared excitement in intellectual activities and their diversity of interests: Ken the brilliant mathematician, Jeannie the hot engineer, Steve the dashing paleontologist and Rod the innovative economist. But now their divergent life paths were perhaps pulling them away from each other.

Ken was fiddling with a pager box on his belt. He pushed a button, a green LED flashed, and as he looked back up at Rod he unobtrusively slid his right index finger to a second button and pressed it twice, in quick succession. “Well, actually it might be a hell of a selling point. Fact is, we’ve already got wireless capabilities built into all of the implants. It’s really a question of how we utilize them.”

Trojan Horse

Rod reached for a chair from the next table and wedged it in between Jeannie and Steve. Everybody was jostled sideways as he sat down, and Ken pressed a button on his pager as he slid over.

“What frequency band? Twenty-six gigahertz? Weaponeers need to know these things.” She said it jokingly, but she wasn’t entirely kidding. The question lost Steve and Rod, neither of whom knew a frequency from a watt. But Ken warmed up to the topic.

“Actually above seventy-six gigahertz. There’s a new band allocation up there, just for these devices. The Commission just granted it for permanent use, but the assignment details are proprietary.”

“Trade secret? Who cares?”

“More like security concerns. These things can be hacked. It’s a downside we don’t advertise. Not that most jokers could do it, but the possibility of a hack isn’t zero, even with software security features. So we don’t even tell people exactly what band they would have to work in to get a wireless attack underway. No use helping anybody.”

“Fine. So I’ll just set up a low noise preamp and a spectrum analyzer and find the frequencies for myself.”

Trojan Horse

“Go ahead, but the signal is normally masked by background radio activity. Put yourself in an anechoic chamber and you might get it. But I gotta leave you on your own on that one. Besides, the rest of the problem is the tough part of a hack. It has to do with reading brainwave patterns.”

Ken took a sip from his drink and looked thoughtful. The Company was touchy about disclosure, but these were friends. It wouldn't hurt to tell them a little, just so they would know the outline. Just avoid the critical details, he figured, that's it. Things were always so much clearer after a few drinks.

“The trick is that MLI devices have to “know” how to hook into any particular brain, to get the questions and give the answers. We've found that every brain has unique thought patterns, and these little machines have to know how to read a person's patterns; how to read a person's mind. So we have to train every device to understand each customer's patterns. In the early days, when we were developing these things in the lab, that was the hard part; it used to take days to work out the patterns for just one person. But eventually we worked out fast algorithms for learning the patterns, so the learning interval was.... reduced.”

Jeannie sensed the significance of his pause.

“How much?”

Trojan Horse

“A lot.” Ken leaned away from her as their food arrived.

More precisely the interval had been reduced to about 60 seconds, which was a technical breakthrough. Ken had developed the new algorithm from pure mathematical theory about eighteen months before. Within the interval of a single minute, the Company’s proprietary scanning algorithm would run from inside the implant and would conduct a diagnostic probe of activity in each and every brain center. The MLI engineers had discovered that the key to creating an effective learning matrix for their devices was to perform extremely fast, broad bandwidth sampling of brainwaves during short burst intervals over the course of a minute, collecting almost a trillion bytes of brainwave data per second. The resulting 60 terabytes of scanned data were later sorted and analyzed for key patterns.

An insidious aspect of the process was that the wideband sampling was completely non-selective in terms of which types of brain activity were targeted. The very key to the algorithm was that every aspect of brain activity was recorded, including many that were not pertinent to the operation of the implanted device. The scanning was especially effective, as it turned out, at resolving activity in the so-called reptilian brain that controlled the most primitive brain activities and the strongest behavioral drives, for food and sex and love and anger. The sampling could reveal the core of people’s most intimate behaviors, likes and dislikes.

Trojan Horse

Ken had disclosed this information to the MLI Ethics Board, and had been required in turn to ensure that all ‘non-pertinent data’ were automatically screened and deleted after every Download and Analysis Event, or DAE. All the same, the MLI upper management had decided that it was best not to disclose to the public the full extent of the information that could be gleaned from DAE bursts lest potential customers be scared away.

As everyone reached for their dinnerware, Ken reached down to his pager. A few seconds later, he noted the LED flashing yellow and pushed the second button.

“You seem to be getting a lot of pages, Ken. Need a phone?” Rod was reaching into his jacket, for his mobile unit.

“No; it can wait. This thing’s been a little sticky lately, dropping messages for some reason. I have to keep checking it all the time to make sure I’m not missing anything. But thanks anyway, Rod.”

“How’s the food?” Ken asked of no one in particular. The other three nodded with approval. He reached down to his belt. The conversation turned to the recent wildly fluctuating price of oil.

“Look, my consulting firm’s economic forecasts aren’t foolproof, but they don’t need to be. We just need to be certain that we watch what guys like Bar-Elan and Yussuf-bin-Alen are doing, and not get totally blindsided...economic multilateralism is the new

Trojan Horse

reality...downside leveraging of new opportunities in developmental markets...,” Rod droned on. Steve was arguing that economists like Rod were overly optimistic about their ability to forecast world events, a worn theme that he had raised too frequently with Rod over the years. Jeannie’s chin was resting in her palm, with her elbow on the table. She was staring absently at her plate as the waiter swooped in behind her and scooped it up. No one noticed anymore as Ken reached for his belt.

“Dessert and coffee?” the waiter interrupted. Everyone brightened a bit as they ordered coffee. As the waiter departed Ken asked who had seen the latest reports on the troubled progress of the comet diversion mission.

“Oh God, what now?” Rod asked in a dismayed tone. “Did they blow up the Last-Chance rocket?”

Ken answered “No, no, it’s still intact, and they claim they know what the problem was with the other one and that there’s no way they’ll let this second one get out of control like that. It’s NASA screwing up this time. No sooner did the Russians get the second big nuclear engine fired up again after one of its coast phases, than Boise Control totally lost contact with it. Turns out the software for their tracking dish was messed up. They said there was a code compatibility problem with one of the antenna tracking servo modules.”

“But the vehicle will just go into safe mode until the next tracking station comes around to see it, right?” Jeannie said.

Trojan Horse

Ken's hand slid down to his pager as he turned toward her. "Not so simple; it turns out the loss of signal was just when they had to do one of their biggest and most critical burns. They don't know whether the cut-off data were properly transmitted. If they weren't, they may not be able to get the spacecraft into rendezvous with the comet in time to start the diversion process. With these Keystone Cops handling things, you'd better get your affairs in order."

It wasn't much of a joke; everyone looked toward either the wall or the table. Ken seemed unconcerned as he checked his pager again.

With predicted comet impact almost six months out, the only thing still in doubt was the precise time and point at which Oblivion would occur if it got through. The thing was technically called 18-DEC-2013A for the date it had finally been located. The media had begun calling it Doom and the name stuck. The early emergency sky surveys had missed it because it had been too far from the sun to glow and because the searches had initially concentrated on finding objects near the plane of Earth's orbit, the ecliptic. But the aliens had directed this comet's orbit far above the ecliptic.

Radar imagery had given some clues to its shape: basically a cratered potato with a large, oddly shaped appendage sticking out of one end. It was spinning around its short axis, with a slight wobble thrown in for good measure. Its interior structure was a mystery. It

Trojan Horse

was just getting close enough to the sun to begin to vent enough gas to be visible in binoculars. In coming months it would brighten until it dominated Earth's night skies.

Radar data showed that it measured about ten miles by five miles by four miles, far larger than the asteroid that did in the dinosaurs and more than big enough to cause such environmental disruption as to stop plant growth and hence agriculture. Most or all humans would die within months from either direct impact effects or starvation. The decision had been made to try to nudge it off its collision course with Earth as the only realistic method for neutralization. Destruction was not an option because it was far too big to reduce to harmless rubble.

Ken wasn't a big fan of humanity and was perversely rooting for the comet. But being always an opportunist he had used his considerable wealth to open an insurance company to write loss-replacement policies in the event that the comet hit Earth. He defended this activity to his friends as 'selling peace of mind,' and figured that no matter what finally happened, he would never have to pay off on any of the policies. "I'm not evil, just practical," he told them. And so far he had done a huge amount of business. Time would tell if he would have the chance to enjoy his newfound wealth.

Following assembly of the three intercept rockets in Earth orbit, each had been successfully launched toward 18-DEC-2013A. The link-ups were to occur at the distance of Mars but well above the plane of the ecliptic. The diversion was to begin just sixty days before the impact date.

Trojan Horse

The missions were problematic from the get-go. Technically daunting due to short-notice launches, lengthy deep-space travel and micro-gravity orbital rendezvous maneuvers, they were further complicated by the difficult on-site tasks of diversion. The comet would first need to be surveyed to determine its mass distribution, so as to be able to understand how to exert force on it to change its orbit. Then a myriad of low-power thrusters would be attached at key points and would fire for about fifty days to move its orbit away from a collision with Earth. The thrusters were themselves using untested solar-chemical-ion propulsion technology.

Of the three missions, two were manned and one was unmanned. The first manned mission, exclusively crewed by U.S. astronauts, used beefed-up versions of tried-and-true Russian Energia motors. It would travel the slowest and had therefore been launched first. It carried survey equipment to be used before the rest of the operation proceeded. Its travel time to the comet was to have been nearly a year.

The remaining manned and unmanned rockets had been launched six months and nine months later, respectively, but would both arrive at the comet just after the first rocket. Their shorter travel times were partly due to better geometry between the comet and the Earth at the moments of those later launches. But mainly it was because these rockets were using Russian-American gaseous-core-reactor nuclear engines.

Trojan Horse

The heart of each engine was a set of seven thick-walled chambers, each fifteen feet long and ten feet in diameter. From a cold start, hydrogen gas was pumped into each of the chambers through an array of orifices that made it swirl in a vortex in each chamber. Seconds later, vaporized uranium was pumped in. Just a little at first, it was trapped in a sub-vortex within the swirling hydrogen. As more uranium gas was pumped into each vortex spontaneous fission chain reactions heated it and the vortices became self-sustaining cauldrons of light, heat and x-rays. Movable neutron absorbers in the chamber walls were adjusted until the fission reactions were very nearly critical. Gradually the hydrogen supply was cut off. The raging, self-sustaining uranium vortices would reach 60,000 degrees Celsius, twelve times hotter than the surface of the sun. The chamber interiors were among the brightest places in the universe.

To produce the thrust that would propel the rocket through space, cold hydrogen was once again pumped out of fuel tanks and into each chamber, but this time the gas was aimed straight through the violent center of each chamber's vortex. The gas instantly screamed to twice the temperature of ordinary chemical combustion before being expelled rearward through giant bell-shaped exhaust nozzles. This burning (the term was still used even though no combustion occurred) was more powerful and efficient than even the best chemical rockets which combusted hydrogen and oxygen.

To get from Earth to the comet the nuclear engines would fire two gigantic burns: The first would accelerate each ship out of Earth orbit and onto a collision course with its destination. Months later a second big burn would fire in opposition to the direction of

Trojan Horse

travel, rapidly decelerating each ship before it sailed past its target. And just for good measure a series of small supplemental burns would be fired along the way to trim the travel time even more. The resulting routes for the two nuclear rockets were much more direct and therefore faster than the long, practically semicircular orbits that lower-powered chemical rockets had to follow.

There was one more twist to the nuclear propulsion scheme: the unmanned ship's propulsion was augmented by direct conversion of nuclear energy to thrust. This was done by exploding specially designed atomic bombs against a concave 150-foot diameter aluminum bumper plate that pivoted into place behind the exhaust nozzles. With the three-foot-thick plate in position, a plutonium-implosion charge was catapulted rearward through a hatch in the bumper. Then the hatch swung shut, an ablative graphite grease oozed onto the bumper surface through thousands of small pores, and the Nagasaki-yield bomb exploded about eighty feet behind the plate. Each bomb was wrapped in a shell of ordinary polyethylene plastic that instantly vaporized into a 20,000-degree plasma wave that bounced off the bumper and pushed the spacecraft forward. Oversize shock absorbers behind the pusher plate gave a smooth ride to the main ship structure and the payload. The blasts were repeated every ten seconds, for as long as the bomb supply held out or until the ship was going at the desired speed, whichever came first. When the pushing was completed the bumper plate was swiveled to clear the nozzles for reactivation of the 'regular' nuclear drive.

Trojan Horse

This atomic-bumper scheme had been proposed in the twentieth century but had been rejected because it was useless to weaponeers and because it was technically illegal under the old Nuclear Test Ban Treaty that had prohibited nuclear explosions in space. Luckily some engineers had reexamined the concept in the early twenty-first century as the first manned Mars missions were being planned. They had obtained a treaty exemption and had literally beaten swords into plowshares by having hundreds of old, stockpiled nuclear warheads converted into 20-kiloton “pulse units,” as they were euphemistically known.

The pulse unit explosions were easily visible on Earth and it had become a popular pastime for people to sit outside at night and watch the beautiful flashes. They said you could see the most surreal colors in them, expanding out into little rings of light.

The untested atomic bomb scheme had been implemented for the unmanned ship to provide extra time for its payload preparation. A gas core nuclear reactor alone could drive a ship to the comet in just 170 days as compared to most of a year with a chemical rocket. But using a hundred bombs as a drive supplement cut the travel time to the comet to a mere 80 days. Forty bombs helped the ship get started; another thirty were used along the way to further speed the journey; and the last thirty would be used to decelerate the ship as it approached the comet.

The extra preparation time had been especially critical for completion of solar-electric thruster pods that would divert the comet. Powered by sunlight and expelling a continuous jet of ions into space, the units could generate low-level thrust practically

Trojan Horse

forever. They had been designed as a low-cost (albeit slow) method for transporting bulk cargo back and forth between Earth and the manned lunar science stations that were beginning to be built. But in theory an array of about a thousand of those thrusters would be an ideal mechanism to gradually nudge the comet off its collision course with Earth, provided they had enough firing time available after they were attached to the comet's surface.

The manned nuclear ship carried people who would back up the first crew. The unmanned rocket was carrying all the hardware, including a thousand ion thrusters. In principle this last ship could carry out the mission alone, but no one felt brave enough to risk that. People arriving in the first two rockets would work on-site at the comet to begin surveying it and to ensure that the diversion hardware worked properly when it arrived.

The extra time that the nuclear drives had purchased for the saviors of the Earth had come at a price, though: the engines were experimental and had never been used for high-power burns for extended periods of time. The engineers would be charting unknown technical territory when they used these engines to speed people and hardware to the comet.

After rushed preparations and launches for all three ships, two of them encountered disasters. Nine months after its launch and three months away from the comet the chemical rocket with three astronauts on board had accidentally vented most of its fuel into space through a badly designed pressure-relief system. A faulty sensor failed to

Trojan Horse

report the falling fuel level while a back-up sensor that had earlier been taken off-line for a routine diagnostic had accidentally not been reactivated. The venting had occurred over a period of eighty hours. Although the leaking gas pushed the rocket slightly sideways, the lateral drift rate was so low that the perturbation fell just below the alarm threshold in the tracking data. When the backup fuel-level sensor was finally brought on-line it did give an alarm, but by then the tank was nearly empty. The primary cause of the venting was determined to be an easily fixed software bug in the relief valve controller, no comfort to the two men and one woman who now had a God-only-knew-what chance of even getting home, much less making their rendezvous with 18-DEC-2013A.

Then the manned nuclear spacecraft exploded soon after launch at the distance of the Moon with the instantaneous loss of two cosmonauts, two astronauts, and a taikonaut. The explosion had been spectacular enough to see with the naked eye from Earth. The engineers at first said it was impossible, but there it was, the explosion playing endlessly on video loops around the world. So then the engineers reconsidered and said, ‘Well, maybe there was a way it could have happened after all.’ It had something to do with a misalignment of the neutron absorbers inside the vortex chamber, they were now saying.

That left the unmanned hybrid-drive ship carrying the ion thrusters as the only remaining rendezvous vehicle. Now it was screaming toward Doom and would rendezvous in less than three months, assuming that everything turned out lucky on this latest communications screw-up. The problem now was that entire diversion operation was going to have to be carried out without any people present. It would be partially run by

Trojan Horse

automated systems on the unmanned ship and partially by remote control commands transmitted some hundred million miles from Earth.

Publicly the Last Chance rocket had odds of one in five. The secret assessments of the mission engineers were far worse. The health and reliability of the reactors were doubtful. NASA had repeatedly fallen short of its promises for technical mission support. And the payload's artificial intelligence control modules and untried ion thrusters were being tested along the way because there had been little time to check them out before launch. Those gizmos were continually acting up during test runs. People who would originally have been on-site might have been able to deal with balky equipment, but with all of them out of the running no one could explain how the whole process was really going to work. Religious kooks were already gearing up for The End, as were a lot of people who weren't kooks.

The Gang of Four seemed to find the possibly imminent comet impact to be a psychologically remote possibility, abstractly possible but not viscerally real. The men were in a mental state of denial. But Ken thought Jeannie seemed upset about it. He asked her what she thought about it. She creased her brow. "I don't know what to say. I wish I knew what to do, if it gets past the Last Chance rocket. I wanted to have children."

The waiter arrived with their coffee and filled four elegant china cups.

Trojan Horse

“Kids are rug rats; you actually want some?” Rod mumbled quietly toward the wall.

Jeannie turned to answer, but Steve broke in.

“Try not to make any moves a triceratops would have made,” Steve joked. Jeannie looked at him and rocked her head into her upturned palm.

“I’m sorry, but I won’t need my coffee,” Jeannie held her palm toward the waiter. “I’ve got to go. This ought to cover me.” She stood up, dropped a pair of twenties on the table, and stalked out. Rod shot a quick glare toward Steve as he got up and went after her.

Steve looked after them, and then turned to Ken. “He forgot to put anything in for the check.”

“Yeah. I’ll cover it. Paleontologists don’t make anything, I’ve heard. And good one with the triceratops remark. Who writes your stuff?”

“It didn’t sound so bad when I blabbed it out.”

“Oh yeah it did. Your problem is, you don’t have any rhythm.”

“Who cares. Can you believe she’s moving in with that butt-head.”

Trojan Horse

“What would you care? Or have I detected an interest that you’ve developed in that little lady? Why didn’t you ever just ask her out anyway, before she got serious with Rod?”

“Geez. I dunno. Cuz I’m an idiot and I’m a chicken and I’m clueless.” Steve sounded like he almost going to cry, and he looked like it, too, Ken thought. Too pathetic for words. Maybe he shouldn’t help him, he thought. But no, make the offer, see what happens. Steve was too pathetic; it was hard not to laugh at him.

“Well, to hell with it. They’re a pair now. To hell with it. He really is an ass, you know. He doesn’t even treat her nice.” Steve was shaking a little. Then he looked over at the monitor.

“You know, buddy, you shouldn’t write it all off, your chances of ever getting with her. I could help you out, if you were serious.”

Steve was staring across the room at the comet news coverage. “What do you mean?”

“I mean I know what her little brain is doing, more than she knows herself. I know what her feminine brain wants, what her hominid brain wants, what her mammalian brain wants, what her marsupial brain wants, and what her darkest, *most reptilian* desires are. And I can put you on the inside track to her deepest well of desire. I can make her hate Rod and fall in love with you. I can do it, make it happen.”

Trojan Horse

“You fucker.”

“No, fuck *her*, for the rest of your life, if you’re willing to go along with me on this.”

Steve sat staring at Ken. Now it was Ken’s turn to stare absently at the muted comet news on the video monitor.

“This is with the math implant jigger?”

“Yeah, basically. Are you interested or aren’t you? Because once this gets started, there’s no going back. You’d better be prepared to go all the way with the whole thing, and with her. She’ll crawl after you. She’ll have children with you, and you won’t be able to get away even if you want to. She’ll never break her bond with you, ‘til death do you part.”

“You fucker. That thing on your belt...” he pointed down through the table top.

Ken nodded. “...Is not a pager. Right. I actually thought someone might catch on, but people just don’t pay attention to the details like they ought to. Maybe the comet has everyone distracted right now. Anyway, Stevie...”

“What do I do, and what in the name of God do you do?”

Trojan Horse

“It’s in the name of the devil, and here’s the deal. The wireless link in her on-board math processor, her “icky” as we call it, can be commanded to do something we call a DAE, which is basically a brain-wave copy, on a minute-by-minute basis. It transmits brain-state data to a little wireless receiver on my belt. Those data are a gold mine of information on the total state of her brain. It works as long as I’m within about thirty feet of her, assuming there aren’t any obstacles between us. I also run an audio track, to correlate the conversation and therefore her likely mental state, with the brain wave patterns in her head.”

“Not only that, I manually entered markers at significant turning points in her mental state all night long, and now I can play it all back with software correlators running, so that I, or rather my computer code, can “see” what her thought patterns are as a function of her mental states. I know her brain state when we got together, when Rod came in, when we all got jostled so he could wedge himself in, when she was eating good food, when she was...upset.”

“This is weird; I feel like I’m in a dream,” Steve interrupted.

“Never been done before, I’ll tell you that.”

“Yeah. You’re an original, alright. But I don’t see what this does for, uh, you know...”

Trojan Horse

“For getting her into your arms? Well, see, here’s the thing. Once I know her brain wave patterns when she’s happy or sad or having a headache or turned on, I can fix it so that they get replicated by her implant. On demand.”

“I still don’t...uh,...I mean, what,...how does this work?” Steve sounded puzzled but looked worried.

“OK, here’s the thing about this. I can upload modified software into her implant. *Software that is designed to produce particular feelings under particular circumstances.* I still haven’t worked it all out, it’s just been one of my side projects, but I’m well on my way to developing new algorithms that will play back, into her mind, *appropriate* brain wave patterns when she sees, hears, feels, selected things and experiences certain events. Things and events that have been preprogrammed as triggers.”

“You’ll control her mind with that thing?”

“No, no, it’s way more insidious than that. I can make sure she has feelings, *real feelings*, that are triggered by selected things, like certain *people*.” What she does with her feelings is up to her. I can’t make her marry you. But I can fix it so that she develops feelings of love for you. And maybe feelings of loathing for Rod.”

“Geez.”

Trojan Horse

Both men sat staring at video loop. A text ticker at the bottom of the screen ran across with a message to the effect that the Last Chance rocket thruster appeared to have made the big burn successfully. Ken felt a pang of disappointment. But not to worry, he told, himself. They still had almost no chance of running the diversion with only an automated spaceship.

Steve put his money on the table. “Want to get a beer?”

“Nah. I’ve got work to do tonight. Writing a software package.”

“One thing. Why would you do this? Do you want money? Or what?”

“No. No money.” Ken looked insulted. “Partly I want to see if I can do it, something that’s never been done. Partly I can’t stand Rod any more. Partly I want to play out a game with live players. Mainly I want to get even for something.”

Steve pulled his chin back toward his neck and looked back under his eyebrows at Ken.

“I don’t care much for people, generally. I hate them for what they do with their God-given gifts, how they waste them and misuse them. So typical of Americans. So typical of humanity generally. Jeannie is beautiful and brilliant, but what does she do with those gifts? Gives her beauty to a dolt and her brilliance to a weapons-design lab. Fuck her. Or

Trojan Horse

more to the point, I'm going to make sure that you screw her. Forever. That's her punishment... ha!"

Steve's face reddened.

"Just kidding about the punishment part, buddy. I really would like to help you, though."

Ken raised his eyebrows and looked at Steve with a smile. Steve looked down at his empty place setting.

The waiter swooped down on the bill and vanished without a word. Steve wasn't so sure that Ken was actually kidding about any of what he'd just said.

"I never saw this in you before. Is this because she dumped you after you two dated a few years ago?"

"No. No hard feelings on my part. No, no. I wouldn't touch her now with a forty-foot pole."

He looked calm and thoughtful but his voice betrayed an edge.

"Too much of a temper. She drove me nuts, with her moodiness. OK as a friend but not a lover. She suffered some sort of awful betrayal when she was young, and for the rest of

Trojan Horse

her life she's going to be sensitive about being let down by people she trusts. Here's some advice if you're serious about her, my friend: Don't ever piss her off; she could kill." Ken paused as Steve stared at him.

"So you're in?" he asked with a hopefully rising inflection.

"Yeah."

"Good, 'cause we have a lot of work to do. The first thing is easy. I have to get a lot more DAE's off her icky. We have to get her into a lot more social situations, so I can get her responses under a variety of stimulus-and-response conditions."

"Cool. What else?"

"What else is, she is going to need triggers from you to ultimately give the icky software some things to hook into, that are unique to you. So you will have to follow my instructions. To the letter."

"I'm listening."

"First, I need to put you into clothes, good clothes, that are distinctive. You and me are going shopping tomorrow, for a whole new wardrobe, which you are going to start wearing around her. And you're going to get a decent haircut for a change. And some

Trojan Horse

other changes, in your demeanor, which I'm going to coach you on. But the bottom line is, we have to make sure that your appearance and demeanor provide a sort of signal which the new icky software will key on when I upload it."

"How...uh...?"

"It's a remote download, by wireless."

"At dinner some night?"

"No, it takes a while, and there's an activation phase. The download can't be done surreptitiously. She'll be aware that there's new software there. But some of the download's *contents* will be surreptitious. It's like the Trojan Horse. She'll willingly let the horse inside her brain the same as the Trojans dragged the horse through their broken gates into their own courtyard. But just like they didn't clue into the Greeks inside, so she won't know there's a love bug for a certain paleontologist lurking inside her new software, waiting to jump out and seize her brain. And trust me, there'll be a download opportunity coming up soon."

"I can get together Wednesday night."

"Good. And to get the rest of the data I need, we'll start going to movies and having dinner every week, the four of us. I'll be the social coordinator. And I'll start running

Trojan Horse

DAE's on her while she's watching movie scenes that elicit all kinds of emotional reactions. How about Saturday night, for a kick-off?"

Two days later, on Tuesday morning, Jeannie called Ken at MLI from her office over an NSA-approved encrypted line.

"The company tells me I've been selected to control the ship when it arrives at the comet. I'm going to need software uploaded into my ICC to control it remotely. But you already knew that, didn't you?"

"Yeah, you got me. But you knew it was coming. Your implant has worked better for you than for anyone else. There was no other candidate even close to your ability, with or without an icky installed. You got sweet waves, baby."

"Thanks." Her voice lost its edge; she did like compliments. "When do we get started? The ship will rendezvous in three months, but I need to gain proficiency with the new software well before it arrives."

"Well, it's going to still take me at least a month to finish the new code. So figure a month from today for the download."

Trojan Horse

“OK. But remember that I’ve got to have time to get used to running the rocket’s systems while dealing with a twenty-minute time delay between every command and any kind of feed-back. So we really, absolutely need that code in a month.”

“Yeah. It’ll be there. Just get ready to start doing real-time computations on comet mass-distribution, moments-of-inertia arrays, and all that. You can do some of that with your existing software.”

“They’ve got me sitting in the damned simulator six hours a day, Ken, running endless rendezvous and shape analyses on simulated comets. With the time delay for radio signals built in. Three days a week is all I can take. I’m developing constant headaches. I don’t know if it’s stress or the implant.”

One of the key elements to the entire mission would be for Jeannie to use slight undulations in the spacecraft’s orbit around the comet to compute the exact shape of Doom, and from there, to understand intimately the odd ways that it would rotate and slide sideways when forces were applied at its surface by the ion thrusters.

The biggest unknown was the comet’s internal strength. Comets might look solid, but probe missions had found that they were frequently mechanically weak. And the alien message had emphasized that the object was ‘fragile.’

Trojan Horse

If Doom turned out to be crumbly it would be likely to shatter when the thrusters began to push on it. And if that happened the individual pieces would not be diverted; they would continue on the same path as the original comet nucleus. Then the Earth would be struck not by a single ice-and-rock chunk ten miles across, but by many such chunks, each perhaps a mile across, each the size of the thing that wiped out the dinosaurs. The cumulative effect of being smacked by such a group of mini-comets would be far worse than being hit by the single Big One. It would be the End of the Road for humanity and most life on Earth if that happened.

And there was one more sticky issue. Time. Even with the shortest possible rendezvous schedule, the thrusters would have to begin firing within twenty-four hours of arrival if they were to change the comet's course sufficiently to ensure diversion from a collision with the Earth. Without any astronauts the automated ship carrying the thrusters would be on its own to perform the tasks of surveying the comet's shape, density and mass distribution; picking thruster locations; deploying thrusters; and finally modulating their thrust levels and directions. And it would have to do it fast.

How to solve the problem, the engineers at Jeannie's company and in the various government mission-control teams had wondered? They had asked Ken, and he had suggested that a human being using one of his MathSavant implants and some upgraded software might be able to send remote control commands from Earth. The human would work through spacecraft sensors in such a way as to hold and move the comet with the

Trojan Horse

thrusters the same way as a human brain might evaluate the size and shape of a fragile snowball and then command a hand to manipulate it.

Through telemetry data linked into her head from the rocket's artificial intelligence routines running on board, Jeannie would actually feel the comet's gravity in her mind as it approached the rock and went into orbit around it. She would run her fingers over all of its gravitational bumps and dips as it looped around and around the little planetesimal. She would feel the comet's shape and varying internal density patterns through those little gravitational peaks and valleys. Then she would divine the critical points and angles on the barren surface at which thrusters would have to be attached to make it stop spinning. She would estimate thrust levels, switch on the motors, and ever so gradually slow the spin to zero. Then she would move the comet sideways.

The perturbing effect on the orbiting spacecraft's path in space would be telemetered across the solar system through a ground station on the Earth, then go into a fiber network to Boise Control, and finally land right inside her brain. She would turn the thrusters on and run them up and down, from full power to no power and then back up again, seeing the comet respond as she did so. If it turned out to be weak and began to crumble, she would sense the breakup before it got out of control (thinking ahead through a radio signal time delay) and then command adjustments in the thruster power levels (through a radio delay in the other direction) so as to catch it before it broke. She would balance the forces like a downhill skier balances herself at high speed on a tricky set of moguls, but with the added complications of a twenty minute radio delay between every

Trojan Horse

command and response. The comet would rest in the palm of her mind as she gradually moved it off its collision course with the Earth. After the first day or so, when the engineers were confident that it was under control, the regular ground-based computers would load the comet model from her head and then take over the long-term thruster operation. That was Ken's plan, anyway.

"Constant headaches, huh? Bad news for Rod, I guess." Uncomfortable silence ensued from the other end of the line.

"Anyway, sorry about Sunday night. But Steve's joke upset me."

"I know. But he's not insensitive. He wouldn't have said it if he had any idea you were the key player in this diversion interface. By the way, the media are still just saying 'expert scientists' from your outfit are going to pull this off."

"Hope it stays that way. I can't deal with the media; can you imagine the questions? *'How's it feel to have the planet's fate in your hands?'* Rod's so wrapped up in his own stuff, he doesn't even ask anymore about what I do, anyway."

"No doubt. How about a Gang of Four get-together this weekend? Movie and dinner?"

"Sure. What's playing?"

Trojan Horse

“I hear *The Mind’s Eye* is good. You’ll bring Rod?”

“That was a pretty good flick, huh?” They had just been to their fourth movie since Steve and Ken agreed to start plumbing her mind. Now they were starting dinner after the film. Ken’s gaze scanned around the table where they’d just been seated. The restaurant was one of their favorites, a Middle Eastern place a few blocks from the theater.

The dining room furniture was old stuff you couldn’t find any more. The restaurant’s owners were a family who had brought it all over from Damascus. The dining room was hung with gorgeous dark-red tapestries with complex geometric patterns woven in gold thread. When he was out doing paleontology field work, Steve sometimes day-dreamed of himself as a sheik, sitting inside a tent in the desert with those tapestries hung all around the interior. The approaching waitress, a beautiful Syrian girl named Kamila, knew them all by their first names.

“You will have your usual drinks? Tamarind juice and waters?” she asked.

“I will.” “Yeah.” “Sure.” Rod was the only one to demure. “Just water, please.”

Jeannie excused herself and walked toward the back of the room.

“You OK?” Ken asked Rod.

Trojan Horse

“Yeah. But Jeannie’s been tense lately. I don’t know what’s going on. She won’t open up about anything.”

“She can be moody. Don’t worry about it. Blow her off until she gets over it is my advice.”

The waitress brought out the drinks as Jeannie returned. “So how’d you like it?” Steve asked again, of no one in particular. The movie had been a thriller, *Run for Your Life*.

“Great action scenes, but kind of weak on plot,” she volunteered.

“Well, this was supposed to be a shoot-‘em-up, you know,” added Rod.

“Nevertheless, it’s important for any film to at least have a sensible plot line; this one apparently was never properly story-boarded,” Steve countered. Jeannie was a film buff, and he had been studying film criticism in his spare time. “I mean, after they all ran out of the cave, the villain seemed to forget that the high-powered laser was still on the boat. In fact, we never saw the laser again. So what was that all about?”

He was wearing a crisp button down shirt, pleated slacks, and patent leather shoes with dark socks. Under Ken’s tutelage, he had been working out, and his toned chest, abdomen and arms were apparent even under his shirt.

Trojan Horse

Steve's belt matched his shoes, a first for him. A unique belt buckle held it. The buckle had been designed by Ken, in wax, and had been cast in a dazzling golden bronze. The design was based upon a gold buckle found at Sutton Hoo, England in the burial of a seventh-century Dark Age warrior king named Raedwald. It featured a pair of abstractly rendered snarling creatures with writhing, knottedly intertwined bodies that ran back and forth across the buckle as they grappled each other. It attracted admiration everywhere he went. Jeannie had commented on it, and on Steve's overall upgraded look, several times in the past few weeks.

Ken broke in. "Well, at least the heroine was easy on the eyes."

Jeannie replied, "Yeah, but I don't care much for the helpless business, like when she was kidnapped and held in the warehouse."

Rod spoke up. "But they balanced that out when she did the karate moves after the guy freed her."

"Anyway, not the greatest movie ever, but OK for a rental some evening, I think," Steve summarized.

Trojan Horse

The conversation turned to current events and the ongoing progress of the Last Chance rocket. So far, so good. But the mission controllers were emphasizing how tricky the micro-gravity rendezvous and maneuvering would be.

Ken decided to get a few more emotional responses from Jeannie. “Remember back in the nineties, when that asteroid probe, what was the name of it? Well anyway, when that first probe was supposed to go into orbit around an asteroid and the motor stuck in the ON position and it went sailing right past like a bus going past one of its stops? It took like a year to come around the sun and meet the asteroid again. Boy, if that happens with this comet, we’re screwed.”

She shook her head and pushed back slightly from the table. “Yeah, Ken, I remember that. What’s your point? Are you hoping for a catastrophe? Would that make you happy?” He had definitely hit one of her buttons; he hit one of his own buttons, on the pager look-alike. This material was perfect for the last of his stimulus-response data collection.

Steve interceded. “Anyway, all we can do is wait and see what happens. I hear they’ve got a top notch team controlling the orbital insertion and everything after that.”

“That’s what I hear, too,” Rod said.

Trojan Horse

The conversation turned to the stranded rocket crew's chances. The Russian space agency and NASA had just announced that yet another nuclear mission was being fitted out to meet them and then carry them home. But they were going to have to stretch their consumables to survive until the rescue.

Ken diverted the conversation yet again, this time with a question for Steve. "I keep thinking about mass extinctions. Is it true that the K-T extinction sixty-five million years ago was the biggest of all time?"

"No, non, nein," Steve shook his head emphatically. "That's a misconception. The biggest mass extinction anyone knows of was much earlier, at the boundary between the Permian and the Triassic, about 240 million years back. And it was most likely due to dramatic environmental changes in the oceans and climate, and possibly even some temporary changes in the atmosphere. The problems were ultimately caused by continental drift, so far as anyone can tell. It took maybe a hundred thousand years altogether, but when it was over the species slate was wiped pretty clean in a lot of ecological niches, especially in littoral seas." Steve used terms like 'littoral seas' in casual conversation without a second thought.

"But the P-T event gets no attention from the public because there weren't any dinosaurs involved. In fact..." he looked around him and then turned his gaze toward the intricate patterns on the wall. "In fact, the ecological vacuum that existed after the extinction left the stage open for all sorts of new groups. When something like that happens, the new

Trojan Horse

opportunities allow new groups to evolve relatively fast, filling the void. That kind of evolution is called explosive radiation.”

“So...” Ken tried to get a question in, but Steve ran on.

“And in the case of the Permo-Triassic event, the explosive evolutionary radiation includes the appearance of the earliest dinosaurs. They show up soon after the P-T extinction, and they exit within a few days’ time at the catastrophic K-T asteroid impact. That’s how these things can happen. By the way, dinos were an astoundingly diverse group for over 160 million years. Anatomically modern humans have been around for a mere hundred thousand years, and even if you count in our earlier hominid ancestors, you still can’t manage to count more than about four million years for us and all of our close ancestors. Humans as a species will never match dinosaurs as a group for longevity or variety.”

The waitress laid the check on the table. “Will that be all?” she asked. Everyone began to get up. Ken still had his question for Steve.

“So extinctions are natural, right? They go on all the time, right? So what do you think about human-caused extinctions?”

Trojan Horse

“I think there’s a difference. For species to go out because of environmental change or tough competition from other species in the normal give-and-take of Darwinian competition and pressures is one thing. But humans...”

“Humans?”

“Humans are different because they know what they’re doing. And they are causing the biggest mass extinction event since the end of the Cretaceous.”

“Pollution, over-harvesting, all that stuff?”

“Partly. Especially in the oceans. It definitely all adds up. But often these extinctions are because humanity is just taking away all the space the poor creatures need to live, especially on land. World population is over ten billion people and growing. I can remember when I was a kid, it was only a few billion, and in my dad’s and grandfather’s times, it was under a billion. These exponentially increasing numbers have just taken away living places for so many animals and plants. On top of that global warming has now essentially eaten away most of the arctic, denying a lot of northern and southern species their places to live. It’s like we’re cockroaches, except worse, ‘cuz cockroaches don’t take away the space for other creatures, nor do they harvest them to extinction, poison them with their wastes, or take away the climate they need to live in.”

Jeannie and Rod drifted out the door. Rod trailed several steps behind her, Ken noted.

Trojan Horse

“So this comet, if it hits and wipes out humanity, or most of it...”

“If it happens, it will most likely open the door to an explosive radiation event. This planet has seen ‘em come and seen ‘em go, in the last four and a half billion years. It’ll see us go, too. If not this November, then still in a short interval as geological processes go. Even without this comet our descendants still have less than another hundred thousand years left, is my guess. Just a blip on the geological clock.”

Ken nodded as Steve paused. Then Steve leaned forward and lowered his voice to almost a whisper.

“So?”

“So what?”

“So when are you going to do it, the upload?”

“Next week. It’s going in with a special-purpose upgrade that I’ve designed for a secret project her company is running. By the time we all next meet, she’ll have the code installed. She’s gonna be keying on you, that buckle,” he pointed at Steve’s waist, “and so forth with feelings of great fondness.”

Trojan Horse

“What about Rod?”

“I’ve worked it so that she will probably feel less attracted to him. Not as good a guarantee on that, but don’t worry, you’re going to be in with her, no matter what.”

Ken added, “By the way, the comment she made this evening about not liking it when the heroine was tied up and gagged? Well, she lied, just showing us the face she thinks she ought to have. Her brain activity shows that she reacted to that scene the same way she responded to the love scene—strong arousal feelings in both cases. Which I might add also matches her feelings when she watches elegant leading men, James Bond types. She’s very visually oriented sexually and is stimulated by images of men’s shoulders and torsos and women’s legs. Just so you know.”

“Good to know. Thanks for this, and all the other coaching. Those chick flicks we’ve been seeing the past couple weeks have been a real gold mine, haven’t they?”

“Yeah, I’ve got everything I need now to finish the Trojan Horse. You ready for this?”

“Definitely.”

Ken glanced toward Kamila, the waitress. He looked her up and down. “OK. So you’ve memorized all the information I’ve sent you from the earlier dumps?”

Trojan Horse

Ken had been using encrypted e-mail messages to send Steve the most important stimulus-response data from Jeannie's DAE's. Steve was to memorize the information and then not just delete the e-mails (which left them physically intact on his computer drive) but actually destroy the e-mails by writing strings of one's and zero's over all the bits.

"I've been working on it."

"Working?...Listen, read those things and then *destroy* them with that Burn-the-Bits software I gave you. *Immediately*. I can't have anything floating around about this, *anywhere*. I mean it."

"Right. I'm doing that," Steve lied. He was clumsy with computers and was embarrassed to explain to Ken that he had lost the special destruction software. So he was just deleting the files from his e-mail roster. But it would be safe enough, he was sure. No one else had access to his computer.

"This never happened, OK?" Ken looked worried. "Here comes Kamila for the bill. See you later, then? I'm going to stay and talk with her for a bit."

"See you, bud. Good luck."

Trojan Horse

Later that evening, back at his own place, Ken sat looking out the window at the snow-packed street. New flakes were falling on the old stuff. He had a decision to make. The success or failure of the comet mission rested on Jeannie's shoulders, or rather in her brain-to-machine interface. But her chances would be nil if the new software didn't work. And unknown to anyone, he had written not one but three versions of the upgrade package.

The first package, totally legitimate and the only one anyone at MLI knew of, was designed to work perfectly between Jeannie and the space hardware. Ken was a master software designer, and he'd seen to the perfection of that bundle. Besides, it had been checked and double-checked by dozens of top software engineers in the U.S. and abroad. It was clean, it would work.

The second package was the same as the first, but with hidden modules designed to use all the knowledge he had gained of Jeannie's brain patterns to make her have pleasurable feelings when she saw Steve, and even somewhat unpleasurable feelings when she was with Rod. Steve's belt buckle was a special trigger.

Only he and Steve knew of that one's existence. Ken had a back door into the software version-tracking codes at the company, so that he could pull the code substitution during upload without anyone knowing. Only a direct check-sum comparison would reveal any difference between the programs. And Ken was the only one who monitored the check-sums.

Trojan Horse

The third package was only known to Ken. It could likewise be substituted without anyone being the wiser. It was nearly identical to the first, except for a single, fatally flawed line of code. On that single bad line was a single bad character, one of evil intent. It would insert a slight error into a critical sub-set of Jeannie's numeric outputs for the comet shape computation. It would lie dormant as long as she practiced on the simulator, and would only run when it sensed actual spacecraft data coming through. When it ran, the slight errors it generated wouldn't be detected because there would be no backup processor available to check her results in real time. It would throw off her commands for thrust levels and directions ever so slightly. But just enough.

Then she would fumble the comet. It would get away and strike the Earth. Better yet, her fumbling would likely shatter 18-DEC-2013A, assuming it was weakly held together. Then it would become a deadly, runaway freight train of smaller comets flying in tight formation toward Earth. The planet's fate would be sealed not by one colossal impact but rather four, ten, maybe even twenty slightly smaller cataclysms, each impact as big or bigger than the one that did in the dinosaurs. The collisions would occur one after another as the Earth turned on its axis and kept presenting fresh ground toward each successive impactor. Mega-explosions would erupt one after another. They would be spaced between a few hundred to a few thousand miles apart.

He knew how it would happen, because he remembered the way Comet Shoemaker Levy had broken into a destructive string of pearls during a close approach to Jupiter in the

Trojan Horse

1990's. It shattered near Jupiter because it was so mechanically weak that the planet's gravitational tidal forces had torn it apart. Then the chain of comet pieces swung around the sun and smacked straight into the planet the next time around. Each of those comet pieces had caused an explosion bigger than the simultaneous detonation all the atomic bombs in all of humanity's arsenals at that time.

If he loaded the fatally flawed software, then Jeannie's unwitting fumbling would be an analog for the old comet's close approach to Jupiter. When the resulting formation of comet chunks rained down on Earth, every place would feel the swift and fatal sword of stupendous heat, shock, and smoke. Oceans would slosh across the land. Total darkness would last for months, maybe years. Most species, most life would die on a planet garroted by a deadly necklace-string of mega-impact explosions.

Ken was emotionally drained but he liked playing games; manipulating people and situations made him feel alive. This code switch would be his ultimate power trip, even if it spelled his own doom. What would it matter, he thought. He was bored with life, disenchanted with love, unhappy and judgmental toward humanity generally. The impacts would be too bad for all the other species. But Steve himself said a few little creatures would pull through and life would pick up its evolution, this time without humanity around to gum up the works. The evolutionary clock would be re-set for some new intelligent life form, one that might be a better steward of the Earth.

Trojan Horse

Ken thought for a long time, sitting in his easy chair, sipping whiskey and looking out the window as the street lights came on one by one. He could put Jeannie and Steve together. Or wreck the Earth. Tough choice.

The snow had changed into big, wet flakes. He thought about the Syrian waitress, Kamila El-Helbawy. She seemed like a nice girl. They'd been talking a lot lately. They had gone out for coffee one evening last week, and she had given him a special kind of look as they parted. He had another date lined up with her tomorrow night. He might have a chance with her. But no use worrying about relationships if he was going to snuff the planet with a single bad character in a single bad line of code.

The streetlights were all shining now, brokenly glimmering through the fat, fluffy snowflakes.

“Upload in progress.” Ken was watching the upload monitor for the upload's evolving status. The process was a little tricky. He ran check-sums twice to make sure things were loading properly.

“Need any help?” One of the support engineers had walked up quietly behind Ken on the carpeted floor. Ken was startled; he shook as he turned around.

“No, no. I got it under control...myself...thanks, Harry.”

Trojan Horse

Jeannie, dressed down in jeans and a T-shirt, was reclining silently in an overstuffed chair with her forearms folded across her waist and her eyes shut. Ken looked her up and down while the upload clicked away. She looked pale, she had lost weight lately and her face seemed worn. He wondered if she had washed her hair in the last two days. She looked a little corpse-like, he thought. Suspended above her head on a small extension arm a flickering green LED indicated the wireless transmitter was active.

Meanwhile the engineers and technicians across the room were going over the latest stream of results from the comet simulator sessions with Jeannie. Their faces reflected the results of all the runs. Failure. Every simulation run worked up to a point, but every run ultimately failed when the critical time factors were tightened down to any realistic values. Jeannie could solve the problems, but she needed eight times longer than the estimated available time to do the required analysis and computations. The problem was that they weren't seamlessly performed. She had to think about what she was doing when she tried to understand the simulated comet's various shapes and the way they rotated and slid around when the thrusters kicked on. The new software would have to work with her brain to control the spacecraft sensors, see the comet's shape, and run the thrusters the same way a talented musician played an instrument, without pausing to thinking about the operations. Ken had promised a ten-fold speed increase from the new package, more than enough to make it work.

Trojan Horse

The transmitter LED went steady red. “Upload completed. You can move now. How ‘ya feeling?”

“Fine, of course. You know it doesn’t give any sensation.” She was being a little bitchy. Well, the pressure would get to anyone.

Ken shrugged, “I know. Just trying to make conversation.” He paused as she propped her self up on her elbows. “Ready to try it out?”

“Yeah, just let me get a glass of water first. My throat’s dry.”

“You’ve got sixty days to learn to play your new instrument, baby.”

“Did you do it?” Steve was calling on an open phone line from his lab at the university.

“Yeah. It’s loaded. I verified its operation when I ran the check-sums on her new package. You are totally set with that little honey. The next time she sees you, things are gonna start to happen. How about I call everybody and we get together Friday?” Ken was sitting at his desk, feet up, with the phone cradled between his head and his shoulder.

“Sounds good. And Ken?”

Trojan Horse

“Yeah.”

“Thanks.”

“Don’t thank me yet, dude. The best laid plans, you know.”

Jeannie ran into the theater lobby just as the movie was about to begin. It had been two months since the new software had been uploaded. Two months of constant time on the simulator. Two months during which Steve had grown increasingly sure that she was drifting away from Rod. Rendezvous was timed for the next morning, but still neither Steve nor Rod had a clue that she was going to pilot the mission.

She looked as if she had just been crying. “Let’s go in,” she said as she lowered her head and brushed quickly past Ken and Steve and Kamila. The two men looked at each other blankly as she led them into the darkness. Nobody asked about Rod.

Steve sat down in the middle, between Jeannie and Ken, and Kamila sat on the other side of Ken. As the lights went down, Steve nudged Jeannie. “They say the big rendezvous starts tomorrow. I hope it all works out for those guys. For our sake. I wouldn’t want the world to end, when there are so many possibilities, you know?”

Trojan Horse

“Me too. I don’t want to...Let’s hope those guys know what they’re doing, huh?” She smiled at him, something that she had been doing increasingly of late.

Steve watched Jeannie’s face out of the corner of his eye as the film progressed. She was distraught about something and she was shaking. About three fourths of the way through, he slipped his arm around her shoulder. She slumped sideways and rested her head on his shoulder. He reached across her lap and held her hand. She squeezed his palm and then began to slide her fingers back and forth along his fingers.

After the movie, they all shuffled out to the darkened curb. “Is everything OK?” Ken asked toward her.

“No.” She was buttoning her long black coat. “Rod and I had a big fight and I told him I’m moving out. It’s some stuff that’s been building up for a while. I can’t really explain what happened today. I just looked at him and felt like I had enough.” Steve looked at Ken, then back again.

He took a step toward her and touched her elbow. “Can I walk you back to your car?” She was pulling on her gloves.

“Yes, please. At least you care...about things.” Then she lowered her voice. “You always did. Let’s go. I need someone to talk to.”

Trojan Horse

“Kamila, would you like to go somewhere for something to eat?” Ken asked loudly enough to make sure Jeannie and Steve heard him. Kamila glanced at the other two and turned back to Ken. “Let’s go,” she said.

On the way to the car, Steve took Jeannie’s hand. “Will you be OK driving back your place, or wherever?”

“Yes. No...I don’t know, maybe not. I don’t even know where to go. Tonight.” She squeezed his hand. “Would you drive me?”

He wrapped his left arm around her waist and pulled her against his chest. He had total confidence. He wrapped his right arm around the back of her head and felt through her hair, down to her scalp. His hand moved toward her neck. He could feel the implant, ever so subtly present, as a small bump just behind and below her left ear. She stood up on her toes and put her cheek against his. “I need to be with someone tonight,” she whispered.

The comet was glowing faintly overhead. Near it a new star brighter than Venus began to pulse on and off. It flashed every ten seconds for the next five minutes as the pulse unit atomic charges began to slow the unmanned ship for its comet rendezvous, now less than a day away.

Steve kissed her gently, just behind and below her left ear, while the flashes lit her hair.

Trojan Horse

“God almighty, where in the name of hell have you been? We thought you were in an accident. Why didn’t you answer any of your pages or your calls? Jesus Christ, we’re out of margin.” The head engineer, Frank, took her arm and started walking her down the hall toward the interface capsule. She had walked through the front door of the Company at 0800 local time, but Mission Control had planned to have her there two hours earlier.

“Here are the latest telemetry numbers.” He held his arm out, waving a print-out as they walked. “We’ve got less than an hour before the start of the operation. And then you’ve got twenty hours to get it moving where we want it to go.”

She jerked away without spilling her precious coffee. “Go to hell. We’ve got time. I got up a little late this morning, that’s all. There’s time to finish my coffee and still divert the comet.” She had a spark that no one had seen in months.

“Twenty hours? I thought we had twenty-four?”

“Not according to the latest numbers. Our margin’s at zero.”

“I’m ready to go. How about you guys? Your shit all set?”

“Ground is ready. Comms are Go, Telemetry’s Go, Tracking’s Go, Guidance is Go.”

Trojan Horse

“And the spacecraft?”

“It’s purring like a kitten. Final check-out on the thrusters came out perfect last night. Everything’s poised. The only missing component is you.”

“Frank, I’m not a component, I’m a pilot. I’m going to fly a spaceship and a comet remotely from a hundred million miles away.” She slid into the control chair and started buckling herself in. “Seal the chamber. Start the link.” Clamshell doors closed around her.

Halfway across the solar system, the big ship coasted silently through the void. Four hundred feet long, it consisted of a truss-work frame with a payload module at one end and the reactor-engine at the other. The atomic bumper plate was pivoted to one side, leaving the rocket nozzles clear. As all the maneuvers from this point would require a delicate touch, the bumper would have no further use. The payload canister was a cylinder frame the size of three railroad cars. It contained the ion thrusters, multi-spectral scanners, computer and navigation systems, and auxiliary radioisotope thermoelectric power generators. The main parabolic communication antenna protruded from the rear of the canister, looking back toward a bright blue star in the blackness. When the rocket left Earth it had carried twelve hydrogen fuel cylinders on the frame, in two groups of six with each group hexagonally mounted around the frame axis. Each tank was a hundred and fifty feet long and thirty feet in diameter, larger than the old external tanks that launched space shuttles in the late twentieth century. The cylinders had been discarded

Trojan Horse

one by one as they emptied along the way, until now only two remained attached near the engine.

The comet rockets had been in development for the first manned mission to Mars when the crisis developed, and had been hurriedly modified to meet the new contingency.

Larger versions with bigger fuel tanks and more atomic charges were being planned that could reach Pluto in a hundred days from here. Trips across the solar system that would have taken one or two decades with chemical rockets and carefully aimed gravity-assisted trajectories past the Jovian planets could now be easily accomplished in a few months without any gravitational legerdemain. Or rather, they would be accomplished if humanity survived this encounter.

Now the job was for the ship to continue slowing and finally drop into orbit around 18-DEC-2013A. The problem was tricky because the comet's exact mass, and therefore its pull on the spacecraft, couldn't be precisely known in advance. In the old days, the spacecraft would have sidled up to it ever so slowly. But this colossal rocket had approached at high speed. After expending its thirty atomic retro-charges it had begun a long burn to finish decelerating itself into a new orbit that would have it roughly moving in formation with the comet.

With Jeannie flying it from Earth, the on-board systems would now have to sense the minute perturbations as it closed in on its target; then it would have to compensate for them with tiny burns. The ship's onboard systems would operate jointly with Jeannie to

Trojan Horse

make the orbital match precise. And all this with twenty-minute time delays for radio communications. Handling things during the time delays was where the artificial intelligence routines would be critical. They had been checking out OK in the last few weeks, but there would be no second chance for the rendezvous; it would have to be flawless the first time.

In the silence of the deep it fired one of its colossal motors, but ever so gently. All the moves from this point would be delicate, for the comet's gravity was so weak that a professional pitcher could throw a handball into orbit around it. Now the mighty motor set looked like nothing so much as a seven-burner propane grill.

As large as the rocket was, it was dwarfed by the massive, vapor-shrouded comet it was fast approaching. The ship homed in from the sunward side, opposite the cloud of dust, pebbles and frozen water vapor that was rising from dozens of pits and pockets on the surface. Trickle of hydrogen vented on and off through the reactor vortices as the motor gently throttled up and down, silent in the void. The comet drew almost imperceptibly closer. Now a little more thrust and now a little less, always for just a few seconds at a time. The ship was like a living thing, animated by its own computers that had in turn become extension of the mind of a lonely, computer-wired hominid sitting on a bright blue point in its sky. It went quiescent after every move to judge the effect of each burn and then decide how to do the succeeding burn. It began to feel the tug of the thing. It snuggled into a valley in the force field. It did a quick, light burn. It went quiet again, feeling the result. Then another burn, just a little hotter and longer. Then more coasting

Trojan Horse

and sensing and finally a micro-burn. Imperceptibly, the ship slipped into a slow, high-altitude orbit.

The ship's sensors watched the comet's face sliding below, just visible enough through venting debris to get decent readings. With her embedded computer Jeannie saw in visible light, infrared light, X-rays, gamma rays as if with her own eyes.

The comet, or rather the stuff it was made of, was four and a half billion years old, left over from Genesis. Primitive though it was its venting debris cloud gave it an animated quality, as if it were breathing. Its irregular shape gave rise to ebbing and flowing micro-tides along the ship's length; from the tide data Jeannie began to compute the comet's mass distribution.

As the sun passed behind the comet the ship entered the debris plume. A hailstorm of dust and pebbles rattled across the rocket's skin and frame as safety shutters closed on the instrument windows. Jeannie had the sensation of blinking, although she could still feel the tidal forces. She began to play a series of short, light burns like gentle taps on piano keys. These little burns, directed just so and with just the right amount of force, would gradually lower the orbit altitude until the ship coasted just above its new friend's surface. The hailstorm subsided as the sun emerged on the other side. The pattern repeated for another five hours as the rocket settled into its final orbit just four miles above the surface. Now its camera views showed the vapor-wreathed surface flying along at high speed beneath the rocket.

Trojan Horse

“Alright. We’re in low orbit,” Jeannie commented to no one in particular. Mission Control in Boise let out a collective breath of relief. “Now comes the tricky part.”

The spaceship rocked and swayed ever so slightly as it swung around in the comet’s gravity field, like a boat at anchor in a nearly calm bay. Jeannie felt the motions and finally divined 18-DEC-2013A’s shape and mass distribution. She could feel the thing in the palm of her hand. It was light, like pumice. That wasn’t good. It meant it was a bunch of chunks jammed together, with a lot of voids and not much strength through the main body. It meant it was barely held together by its own weak gravity. How to stop its spinning and then begin pushing it sideways without breaking it?

Well the solution was simple, she realized. What was everyone so excited about? Within the universe of her mind-machine amalgamation it was suddenly trivial to know where to place the thrusters. One by one as the mother ship orbited around Doom, they detached from the cargo bay and ever so slowly descended to the surface. As each one touched down it anchored itself like a little burrowing insect, smushed its little nose into the dusty-icy regolith, and pointed its little tail end away from the surface at a precisely computed angle.

Three hours after the first thruster descended, the last one settled into place. Forty minutes after that, with the condition, location, and firing angle of each thruster confirmed in Jeannie’s mind-machine, the firing sequence began. The thousand little

Trojan Horse

thrusters blinked on and off like lights on a Christmas tree. Doom had been turned into the Holiday Comet, festively decked out like a flashing Las Vegas casino lobby. Its rotation gradually slowed.

And then a fault began to open on one end, where the big bump was located. The bump wasn't really attached after all. It was just kissing the main body, with a lot of loose, fine debris filling the gap. No sweat. Jeannie just thought about it and the thrusters on the bump reoriented slightly, forcing it to keep kissing even as the spinning slowed to a halt.

Now Jeannie thought about moving it sideways. The little thrusters reoriented themselves and began a new firing sequence. Another fault opened, this time in the main body. And then another and another. As the faults opened the spacecraft's artificial intelligence routines gave temporary compensation commands to the thrusters even as it telemetered back to Jeannie. She reacted as if the comet were held between her own fingertips.

If it hadn't been for the human-computer links, the new software, and perhaps somewhat more luck than anyone would ever later admit, the comet would have fallen apart. Sitting on the little blue point of light, Jeannie's processor and mind worked together, flawlessly. Her co-processor's numbers were perfect. She thought about moving the comet sideways and gently pressed with her mind's fingers to hold it together at the same time. It moved sideways, just a centimeter out of alignment with its original orbit around the sun. Then another centimeter. The rate accelerated.

Trojan Horse

Mission control would take over from here. As its orbit was modified over the next fifty days Doom's probability of collision with Earth would gradually drop to less than one in a hundred thousand; the threat was neutralized. Humanity had passed the aliens' first test.

The comet was beautiful as it screamed past the Earth in November at just four times the Moon's distance. It lit the night skies from horizon to horizon and was even faintly visible in daylight.

"Ken, everything's perfect. Jeannie's a hero! She just called to let me know she was flying the thing, before the news went out on the Net. She diverted Doom! Her! And guess what?" Steve was calling from his cell phone.

"What?" Ken was sitting in an overstuffed chair with his feet up on a swivel chair in his cluttered office. He was distracted, looking across the room at his ridiculously oversized wall-mounted electronic calendar and organizer. It was too much technology for the simple problem of figuring out how to make a lunchtime rendezvous with a potential new sponsor, he thought.

"She said she loves me! I swear I'm going to just ask her to marry me!"

"Good move, but give it a little time to work. Anyway she's in the bag. Congrats. But I gotta dash."

Trojan Horse

“Right. See ya.”

“And make sure you kill all those fucking information files I sent you,” Ken blurted as Steve hung up.

“Steve, do you want anything with this old computer?” Jeannie was shouting from the bottom of the basement stairs. With their kids in college and both of them retired, she was sorting out a pile of old, antique equipment that they accumulated during their past twenty years of marriage.

After a pause his voice came faintly from upstairs, where he was recuperating from a recent heart attack. He had a newly installed a pacemaker, an ultra-intelligent model, to keep his heart going.

“No, honey.”

She lifted the machine onto the junk cart. Then she paused and reached over to the work table for her backup drive. Might as well make an image of the old hard drive, in case anything ever was needed.

Trojan Horse

She fiddled with the connector for a few seconds. It was old and gunked up and didn't want to seat in at first. Eventually she got it in and she turned on the old machine; its date code flashed 12 December 2037. The backup drive sensed the newly present machine and flashed its readiness to begin archiving. As she tried to select the option for an archive operation, she accidentally selected a disk delete option instead. Damn. Well, no problem. Her archiving system could perform a complete undelete procedure on all the files on the disk, including those that might have been nominally deleted years ago but that might have never been subsequently overwritten.

A controller screen came up: 'RECOVER ALL FILES ON DISK?'

She selected Yes. Instantly all of Steve's ancient, formerly deleted e-mail messages returned to life. His hard drive was so big that none of them had ever been subsequently overwritten after they were deleted.

Jeannie scanned the e-mail summary columns. The TO and FROM columns mostly featured his colleagues' names. She spun backward through the list, through the years: five, ten, fifteen, twenty. Mostly junk. Maybe nothing worth saving after all.

Then as the columns raced past, she noticed a distinct cluster of messages in the space of a few months, from twenty-two years ago. They were all FROM Ken TO Steve. Strange that Ken sent all those messages and Steve never sent any replies, she thought. And odd,

Trojan Horse

too, that the traffic stopped abruptly. She halted the summary listing and checked the subject lines on those messages. They were all blank.

She clicked open the first one and was stunned by what she read. Shaking, she read the second. And then the third. Tears streamed down her face as she went through twelve highly detailed messages in the next thirty minutes. Explicit messages that laid bare her soul. Lurid messages that revealed the most private parts of her psyche. Messages that revealed that her very mind had been manipulated to make her fall in love with the father of her children. She felt the deepest sense of betrayal by people she had considered her closest friend and lover. In a quiet rage she stood and slid the computer sideways off the cart, crashing it to the floor.

“You OK honey?” Steve called down.

Her heart was pounding. Her hands were shaking. She was light-headed and blinded with rage. She called back matter-of-factly. “Yeah. I just dropped your old computer.”

She sat down on the floor and cried silently, her face buried in her hands. She had gone back to her first professional love, microwave weapons design, after her stint as the Savior of the World. Weapons work suited her temperament. Drying her eyes on the back of her sleeve, she hastily decided what to do and how to do it, no matter what the consequences might turn out to be.

Trojan Horse

Collecting herself, she gathered up a battery-powered screwdriver, a tiny pair of wire cutters, a small soldering iron, some solder, a wooden stick and bit of wire. Then she headed up the stairs.

Steve was reclining in an overstuffed living room chair as she walked past him toward the kitchen.

“What’s up?” he asked.

“The microwave’s acting up. I think one of the diodes in the magnetron power supply may have burned out. I’m doing a quick repair.”

She turned into the kitchen, unplugged the microwave oven and plugged in the soldering iron. As it warmed up she removed the oven’s back panel. She reached across the power supply terminals with a wire taped to the end of the wooden stick. It discharged with a loud ‘pop.’

“You OK?” Steve called out.

“Just fine, Steve,” she called back.

She reached inside the housing with the tiny wire cutters. On a circuit board, on either side of a small blue plastic disc smaller than a fingernail, she unplugged a fine-gauge

Trojan Horse

sensor wire and unsoldered two other wires on either side. The disc was glued underneath, but she pried it off in a heartbeat. She trimmed a piece of wire to fit the gap between the two terminals. Holding it with her pliers, she tinned the ends with solder and then held it across the span between the empty terminals. She touched the iron momentarily to either end and melted the solder to hold the wire as a substitute for the removed disc. The red sensor wire hung free.

She dropped the blue button into her left vest pocket. It was the safety interlock switch intended to prevent the oven from running with the door open. The new connection was a short circuit that would let the oven run with the door open.

She unplugged the soldering iron and plugged in the oven. She opened its door to its full 180 degrees, turned its yawning cavity toward the wall, and seated it tight against the wallpaper. She set the timer for 20 seconds of operation, with a three-minute delay before starting. She checked her watch, pressed 'Cook with Delay' on the control panel and walked quietly out the back door for a walk around the block.

On the other side of the wall Steve was watching a video. When the oven came on, a thousand watts of pulsed microwave radiation at a frequency of 2460 megahertz flooded through his body. The 20-second interval was not long enough to cook him alive. But it did stall his new pacemaker. He slumped sideways, instantly dead. He was still wearing the Raedwald buckle that Ken had given to him twenty-two years before.

Trojan Horse

When Jeannie returned from her walk she called his name from the back door. No answer. She strode to the oven, pulled it back from the wall, closed the door and replaced the interlock switch. She reconnected the red sensor wire and even tacked the switch down with a new drop of glue. When the oven operation was verified (by heating a cup of tea) she telephoned the paramedics.

Ken met her after the graveside service. He caught her eye and walked toward her with Kamila holding his forearm. He was wearing a heavy coat with a parka hood. Jeannie was bareheaded and wearing a long black wool coat.

“Jeannie, I’m so sorry. Steve was still so young. It’s so tragic. He really loved you.”

“I know. And I loved him. With all my heart and mind, for twenty-two years.”

Her hands were in her coat pockets. Her right index finger released the safety lock on the trigger button of a compact device that her company made for covert assassination operations.

“Kamila, would you excuse us for a moment, please?” Ken asked. His wife looked up at him, nodded and turned away. He watched after her as she drifted away and slipped into the warmth of a distant limousine.

Trojan Horse

“Meeting her changed my life, even my attitude about humanity...you can’t imagine the effect she had on me after I met her. Our relationship changed my mind about...things. It redeemed me.” Jeannie stood facing him under the leaden sky. A stiff cold breeze tossed her long hair across her face. They both shivered, but for different reasons and not because either of them was cold.

Ken went on. “Jeannie, now that Steve’s gone, there’s something I feel I need to explain to you.”

“What?” Her finger relaxed; but when she pressed down a tightly directed beam of high-energy radio energy would stop Ken’s heart by interrupting his biological pacemaker, in about the same way as Steve’s man-made unit had been stalled four days ago.

“Twenty-two years ago Steve told me how much he loved you and I wanted to help him. So I did something I shouldn’t have. I used the software in your math coprocessor to probe your mind. I got information to help Steve know how to attract you.”

Her finger caressed the button.

“And I did something else.”

She raised her eyebrows, trying to look surprised.

Trojan Horse

“I made up software to load as a Trojan Horse into your implant. It would have given you intensely pleasurable feelings whenever you saw him or were touched by him. And it would have worked, too. But...”

She began to depress the button.

“But I never installed it. I told him I did, but I didn’t. You can run the check-sums against the Company’s authorized Gold Version of the software if you ever want to verify I’m telling the truth.”

“See, I realized at a certain point that my coaching was putting him over the top with you. He didn’t need the software. All he ever needed was better conversational skills, some humor, a better wardrobe, some caring, a little luck--like you getting tired of your old boyfriend, who didn’t like kids whereas you wanted to have some...and one more thing...”

Ken paused. Jeannie answered.

“Confidence,” she whispered.

“Righto.” He smiled at her. “You’ve always been brilliant.”

Trojan Horse

“So...”

“He thought he had this mind-control software going for him all these years, but all he ever had was some extra self-confidence and better social skills. That’s all he ever needed. The joke was on him, not you, all along.”

She moved her finger off the button and slipped the safety lock into place.

“He really did love you, you know.”