

## A STROKE IN TIME

The myrotic stroke was the last blemish on the compression of human morbidity and mortality which developed since the Excelians established their world dominance. I should know, since I, Deborah Halberstam, Deb for short, am the partner of Vanya Skrbsky, the actuary who at age twenty-nine became director of the Research Division of the World Institute for Human Morbidity and Mortality Studies (WIHMMS). Even a middle-range intelligence such as I could appreciate Vanya's brilliance. Her models became the world standard for prediction of future morbidity and mortality, and the associated needs.

The Excelians, of course, derived from the introduction of the Excelon drug for the enhancement of human intelligence by TH World Pharmaceuticals of Geneva in the mid-twenty-first century. At U.S. \$100,000 per monthly dose, only the very wealthiest of a very unequal world population could afford the benefits of the drug. It was early discovered the drug could only imperfectly correct for mental illnesses, and could in fact exacerbate the malignancy of certain conditions like sociopathy and schizophrenia. A number of notorious murder cases with Excelon users as perpetrators emerged by the third quarter of the twenty-first century, including the notorious serial murderess Anastasia Montgomery.

Eventually, a treaty accepted by all members of the United Nations vested all distribution of Excelon in the Excelian Foundation, an offshoot of the original TH World Pharmaceuticals. After an intricate series of qualification tests, some 500 persons were admitted as fellows of the Excelian Foundation and were soon dubbed the Excelians. Concentrated in their world headquarters in Geneva, they rapidly insinuated themselves into all elements of world government. Traditional national governments remained, but by the end of the twenty-first century they had ceded most of their authority to the Excelians.

A world disarmament program resulted in the denuclearization of the entire planet by the year 2100. Traditional national armies were disbanded, and only a World Peace Force (WPF) remained to mediate disputes between the national states and terrorist acts by non-state actors. All firearms were banned across the globe by the year 2120. The Excelians advanced science and technology to a hitherto-unheard of degree, and a fuller understating of gravitational force enabled astonishing feats of construction. All animal-based food was eliminated by the year 2130, and artificial (but toothsome) protein substitutes introduced. Money could not buy more than an appropriate daily allotment of calories, and the problem of obesity which had so beset twenty-first century humanity was virtually eliminated by 2150.

Excelian medicine eliminated most of the dread diseases which had once beset humanity by the end of the twenty-first century. Diabetes, heart disease, AIDS and most forms of cancer were all history. Mandatory annual physical examinations resulted in early detection and early cure of most conditions. Tight regulation of public safety turned accidental deaths into extreme rarities. Little was known of life inside the Excelian compound in Geneva, first established in 2050. There had been no known further admissions since the original 500 inducted at that time. There was even the rumor that the Excelians had managed to extend their life expectancy to indefinite periods. Despite the introduction of artificial organs created by a biological analogue of 3-D printing, the indefinite extension of life among the non-Excelian population was found to be impractical, and in fact undesirable. By the year 2150—the one hundredth anniversary of the Excelian Foundation—most humans lived to between ages 115 and 125, at

which point their bodily parts and function simply wore out. Philosophers argued that the passing of older generations opened up opportunities for newer generations and those yet to be born.

Yet, the general population under the Excelian regime did not live under anything like a harsh, totalitarian regimen. The family was still recognized as a basic unit of social organization, and adults were free to choose their own partners. Conception was not regulated, and improved medical treatment of the unborn reduced the number of defective births. The Excelians delegated much of the management of the world to the general population. Individuals like my partner Vanya who contributed significantly to the advancement of knowledge and world order, even without the benefit of the Excelon drug, were by no means extreme rarities. With more and more work like agriculture and heavy manufacturing delegated to robots, more leisure time was made available to the general human population, and all kinds of cultural phenomena blossomed. Many felt that the period commencing in 2150 was a golden age for humanity. Pollution of the environment dating from the nineteenth century forward was mostly reversed. Flora and fauna existed in abundance in designated preservation areas. A limited population of primitive humans was still permitted to exist in some of these areas.

But the myrotic stroke was an ever-present bane, which prevented human life expectancy from advancing to the hoped-for 120 years. From seventy-five in the twentieth century, to eighty-five in the twenty-first century, life expectancy advanced to 100 years for the first time in 2125. But the burden of myrotic strokes seemed to prevent further progress. The strokes rarely occurred in childhood, but were a significant presence by age 25, peaked at ages 35 to 55, and then trailed off until becoming rare at ages 75 and over. The strokes seemed to be associated with “type A” personalities—not necessarily the most intelligent, but those with uncommon energy and ambition, those with heterodox opinions and those with abrasive personalities. This despite the wide availability of medications and therapies designed to enable dysfunctional individuals to return to societal usefulness.

The statistics concerning human morbidity and mortality were tightly controlled, but no one was better informed than my partner Vanya Skrbsky. Soon after attaining her fellowship in the Society of Actuaries at the unheard-of age of nineteen, Vanya received a much-coveted appointment to the research division of WIHHMS. Individual superstardom among the general population was de-emphasized under the Excelian regime, but even in such a leveled environment, Vanya’s contributions were notable. Her models predicted the emergence of a new viral strain in Central Africa in 2247, and enabled WIHHMS to develop an anti-viral treatment which stopped a potential epidemic before it emerged. The last vestiges of those old foes cancer and influenza were beaten back with the help of Vanya’s research. In 2250, WHIMMS announced that human life expectancy had hit 110, but the hoped-for 120 was still impeded by myrotic stroke.

Beginning in 2250, Vanya devoted most of her research efforts to understanding myrotic stroke. The stroke was generally characterized by blurred vision, impaired speech, and partial paralysis in its first hours. It was almost invariably fatal within six hours of occurrence, and autopsies revealed that it was cerebral hemorrhagic in origin. The handful of survivors of myrotic stroke generally experienced significant deterioration in intelligence and affect, and were resistant to rehabilitation endeavors. It almost seemed that myrotic stroke survivorship was “a mistake” in some sense of the word. Vanya applied her most sophisticated statistical models to the understanding of the disease. The tall, willowy, 37-year-old blonde who was my partner was generally tight-lipped about her professional work. After

all, who was I—a medium-height brunette mid-level tech who had met Vanya when serving as a lab assistant—to understand the complex considerations which occupied her professional work.

But one summer Saturday of 2253, after an extended session of lovemaking, as we lay, satiated, on our bed, Vanya opened up her heart to me.

“Deb,” she said, “I think I know what’s been causing these myrotic strokes.”

“You don’t have to tell me,” I told her. “I know the discussion is for you and your professional colleagues and review by the Excelians.”

“That’s just it,” Vanya told me. “I can’t share my conclusions with those people.”

“Why not?” I asked.

“Because,” she replied, “I think the strokes come from the Excelians.”

“For what purpose?” I asked.

“With modern psychochemistry, most square pegs can be rounded off to fit in round holes,” she explained. “But not everyone. Some human beings have divergent drives so strong, they cannot be treated with the standard therapies. So, the choice is to leave them alone--to wreak whatever havoc they may--or to eliminate them.”

“You’re saying the Excelians are killing the myrotic stroke victims?” I asked. “But how?” I added.

“The strokes happen, with rare exceptions, between ages 25 and 75—which is to say, the working ages. Virtually every working person must connect with the Universal Cyberdomain to perform his or her work. I believe the fatal instructions are sent through the Cyberdomain.”

“How can a set of instructions kill a person?” I asked. “Wouldn’t they have to be followed first?”

“Let’s say the instructions go right to the subconscious or instinctual part of the brain, without any intervention of the intellect,” Vanya replied. “Let’s say these instructions tell the body to massively burst a vessel in the brain in two hours. Job done. No intellectual intervention, or consent, required.”

“I assume you have the statistics to back up your assertions?” I asked.

“Oh yes—sufficient and then some. The problem is that if I submit my paper through the normal refereed process, the contents will go straight to the Excelians. I am fearful they will send a myrotic stroke my way to prevent the publication of my paper.”

“Is there nothing you can do to protect yourself?” I asked.

“The simplest thing to do is to keep quiet,” Vanya answered. “But there’s no guarantee that Excelian surveillance has not already detected the direction of my research. They could send a myrotic stroke my way even if I stay quiet.”

“But if you speak up, aren’t you guaranteeing that you will receive a stroke?” I asked.

“Well, I could tell the reviewers that my paper will be published openly in the Universal Cyberdomain if any harm should come to me,” Vanya replied.

“You can’t do that if you’re dead,” I told her.

“You could do it for me,” she answered. “I could set it up so you’d only need to press a button.”

“Won’t the Excelians anticipate that and send me a myrotic stroke at the same time they send yours?” I asked.

“So you don’t want to help me?” Vanya asked.

“I didn’t say that,” I answered. “I just said there are no guarantees that I wouldn’t be prevented from pressing your button.”

“You press my buttons all the time,” answered Vanya, putting her arms around me.

“I guess I can press one more, if that’s what you want of me,” I said. “But could it be for the best that misfits are cut off from human society at the peak of their potential malignancy?”

“So you’re defending the sending of these myrotic strokes?” Vanya asked.

“I’m only suggesting they might be preventing a greater harm,” I said. “Maybe 110 is good enough for human life expectancy. That’s a lot of years to live.”

“That’s fine for the survivors,” Vanya answered. “What about those who are the targets of the strokes?”

“The Excelians are smarter than we,” I answered. “Maybe they know that the myrotic stroke targets will harm our society if they are not eliminated.”

“Many of the targets are in the prime of their lives—45 is the median age for myrotic stroke. Who is to say what bounds the Excelians will develop for human society? Meat-eaters and firearms-lovers may not be so easy to mourn. But what if the Excelians decide that same-sex couples are an impediment to society. Then what?”

“Then we fight,” I answered.

“How do we go about that?” Vanya asked. “The Excelians just send us a myrotic stroke epidemic.”

“Let’s say we disconnect from their damned Universal Cyberspace before they can act,” I answered.

“Don’t forget, there’s still the WPF,” Vanya answered. “Don’t forget the Armed Brotherhood Rebellion of 2239. We both remember how ruthlessly that was suppressed.”

“But the Brotherhood wanted to bring firearms and bloodshed back to our world,” I answered. “Didn’t we have to make sure they didn’t succeed?”

“Perhaps, but the protected primitive tribes are going to war with each other all the time. Remember that the survival of the fittest is still the regimen of life for all of our protected wildlife.”

“Are you saying that the Excelians will turn us all loose among the primitive tribes in the Amazonian rain forest if we rebel?” I asked.

“Who knows what they might do? Thank goodness, for now I do not believe they perceive same-sex couples as a threat. Merely a minority persuasion which bears watching. Which they do very well, I can assure you.”

“Are you saying they’re watching us now, as we lie here in our bed?” I asked.

“Oh, I think the Excelians have much better ways to spend their perhaps unlimited time than to become voyeurs of mere human liaisons,” Vanya answered. “But I think they can detect from our Cyberspace encounters what we have been about.”

“You mean like Lou Guiney, who left a mark in her journal on every day she had an orgasm?”

“Much like that,” Vanya answered. “Except that Lou Guiney, while she lived, could keep her journal private, while we cannot do the same with our Cyberspace encounters.”

“So they have a libido meter which reveals the sexual history of every person having an interaction with Cyberspace?”

“Don’t forget that we are Orgeon users so they already know that orgasms are important to us,” replied Vanya.

“I thought you said Orgeon use was protective of our health?” I protested.

“I did,” Vanya answered. “I think Orgeon makes our bodily structures more resistant to harm. Possibly resistant even to myrotic stroke—until the attack is dialed up to a sufficient degree.”

“I’m confused,” I protested. “I don’t know where this leaves the two of us. Perhaps you should remain silent regarding myrotic stroke. Then we can go on enjoying our lives together. Maybe live to 115 or 125, and die in our beds. Who knows, maybe we might even die within a few days of each other after a long life together.”

“I can’t just quit myrotic stroke research cold turkey,” Vanya answered. “How would I spend my time?”

“Didn’t you love mathematics when you were in school?” I asked. “Couldn’t you just go back to that?”

“I was only middling good in mathematics back in my real bloom,” Vanya replied. “Applied statistics and actuarial science were my refuge from the wilds of higher mathematics. Much as I loved number theory, I don’t think that I could accomplish anything if I tried to go back.”

“But don’t we have career counseling available at all stages of our careers?” I asked.

“A shift from research director at WIHMMS to math grad student is a pretty drastic one,” Vanya replied. “Explanations would be necessary.”

“Cook something up,” I said.

“And what if I fail in my chosen second career?” asked Vanya. “At one point, I thought I might be the one to prove or disprove Goldbach’s conjecture about prime partitions of even numbers. But that particular piece of mathematics has resisted resolution since it was first propounded in 1750 or so. Even with the aid of Excelon, mankind has not resolved that particular conjecture. Maybe it’s even one of Gödel’s famous unresolved questions within our axiom system for arithmetic.”

“You’re way over my head,” I said. “Remember that my mathematics education stopped with high school algebra.”

“Nevertheless, you’re an understanding person,” Vanya replied.

“Promise me you won’t do anything until we can talk about this again,” I said.

“Yes, I’ll promise you that, on one condition. Let me show you the button to press if I die of myrotic stroke. Surely, you’re brave enough to do that for me.”

“I’ll do it for you,” I said, and Vanya proceeded to show me how to launch the release of her paper outside the normal review process.

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The summer of 2253 passed almost in a blur. Vanya did not raise the subject of myrotic stroke again. Vanya increased our maintenance dose of Orgeon. I felt almost as if I were high all the time. When we made love—which was frequently—I had orgasms more intense than I had ever had before. Perhaps because I had an underlying fear of losing my lover. I almost felt that, like Lou Guiney, I ought to be recording my climaxes in a journal. But I didn’t.

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Then the summer of 2253 was over and the chill of autumn was in the air. Vanya bore down on her work. She kept long office hours. Our lovemaking was less frequent, but perhaps even more dear when we did experience it.

One weekend morning while we were lingering over coffee, Vanya said abruptly: “I think Holgerson is on the brink of submitting a paper proposing that myrotic stroke is externally induced.”

“So let him,” I said. “Let the burden be on him. We can use it as a test case.”

“Then Holgerson is the one who stood up for the truth and not I,” she answered.

“Is it really that important to you?” I asked.

“Truth is always important,” Vanya answered. “Just like whether Goldbach’s Conjecture is true or not.”

“Didn’t you tell me it might be unresolvable?” I protested.

“I did,” Vanya answered. “Are you suggesting that the morality of sending myrotic strokes is unresolvable?”

“The Excelians are smarter than us—even than exceptional individuals like you,” I answered. “Maybe they know something we don’t.”

“Wasn’t it Hilbert who said, ‘we can know, we must know’?” Vanya asked.

“It’s even on his tombstone. Yet he died a nearly forgotten old man in the midst of the horrors of Nazi Germany,” I replied.

“Well, maybe the same will apply to me if I do not tell the truth as I see it regarding myrotic stroke. Three thousand eight hundred fifty reported cases in the first half of this year alone. Three thousand eight hundred fifty lives in their prime—who knows what they might have meant for humanity had they been permitted to live their full lifespans?”

“What about our lives?” I asked. “Aren’t we worth something?”

“You know the answer to that question,” Vanya replied. “But sometimes one must surrender one good in order that a greater one can be achieved.”

“If you’re scared of being a math grad student again, you could probably get a statistics or actuarial science appointment in virtually any university of your choice,” I protested. “The career counselors would grease the wheels for you. I am sure that Holgerson or someone else is eager to step into your shoes at WHIMMS.”

“What kind of educator would I make if I don’t stand up for truth?” Vanya asked.

“I think those actaries-in-the-making would be far better trained by Vanya Skrbisky than by anyone else,” I said.

“Assume that I’m immodest enough to concede your point,” Vanya answered. “That still doesn’t address my obligation as a scientist to tell the truth.”

“Oh, Vanya, let someone else tell it,” I pleaded. “Didn’t you just tell me that Holgerson may do the deed?”

“Yes, but he hasn’t marshalled as much compelling evidence as I,” answered Vanya. “I can make a stronger case. Maybe the Excelians will have to change their ways and allow for a little more social friction—a few more square pegs in round holes—in our society. They’d still be very much in control.”

“Holgerson could give them the needed push,” I said.

“The Excelians purport to have abolished capital punishment in our society. Yet, they themselves impose it on a segment of our population without trial. Isn’t that worthy of protest?” Vanya asked.

“Human society survived capital punishment for centuries,” I replied. “Myrotic stroke is pretty mild compared with drawing and quartering and other punishments of yore.”

“I can’t live with myself anymore,” Vanya told me. “I’m submitting my paper Monday. I’m going to beat Holgerson to the punch.”

“Well, at least we will have today together,” I said.

“Do you remember your promise to me?” Vanya asked.

“I do,” I said. “I hope I won’t have to honor it.”

“I hope so, too,” Vanya replied. “But come on, we have a beautiful autumn day in front of us. We can’t afford to miss that, especially if our remaining time is short.”

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Monday, Vanya and I left for work at WHIMMS as usual. I no longer worked in her department, but in another laboratory.

At 9 a.m. I got an internal communication from Vanya: PAPER SUBMITTED.

At 2:30 p.m. I received an emergency communication to go to the Director’s office. He informed me that Vanya had suffered an apparent stroke or seizure at work and had been taken to intensive care at the

University Healthcare Complex. I arrived at the Complex at 3:00 p.m. to find Vanya in a deep coma. The doctors did not extend much hope. Only one in ten thousand ever survived a myrotic stroke and Vanya's case was a severe one. The nurses told me that at age thirty-seven she was in the prime range for myrotic stroke.

Vanya died at 7 p.m. that evening. I contacted the funeral director to order her planned cremation and the disposal of her remains.

I was home by 8:30 p.m. I've been using the time to complete this account.

At 11 p.m. I'm going to press the button. Maybe in Vanya's new world Goldbach's Conjecture is resolved. Or maybe it will still be unresolved. Just like what pressing Vanya's button will mean for me and for the human race. Maybe we just don't have an axiom set adequate to resolve the question.