

Last Person Singular

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On her birthday it dawned on me that my wife was going to leave me. Of course, it was one of life's great mysteries that she ever agreed to marry me in the first place. I'd see her in psych lectures, this little blonde live wire. I'd see her in a cafeteria, or a bar. Always surrounded by a circle of admirers, eyes dancing with intelligence and excitement. I was the invisible geek hiding in a darkened corner. Trying to read in the gloom.

“What is that, science fiction?”

She was laughing at me. I managed to find my voice after a false start.

“Robots, indistinguishable from people, only stronger and more intelligent. It's entertaining but utterly absurd.”

“Why absurd?”

“We don't even know what we mean by an intelligence. How could we ever build one?”

“You come to Skinner's lectures, don't you?”

She pulled out a chair at my table and sat down. She hit me with the full force of both eyes.

“You sit there glowering at the back. What have you got against him?”

Glowing. I liked that.

“Skinner? He's a die-hard behaviorist. He thinks skin-deep is a virtue.”

“Isn't it? At least behavior is verifiable.”

She took a handful of my potato chips. I could see I would have to set her straight.

“It ignores the iceberg and looks at the tip under an electron microscope.”

This was the nineteen sixties, you understand. An electron microscope was fancy equipment. You couldn't carry one on your key chain then.

“But the tip is interesting, and accessible.”

“He thinks he can explore the mysteries of the mind by electrocuting rats. Think outside the Skinner box. There are cognitive processes going on, and we need to understand them. That is the most important task ahead of us.”

“Us?”

“You, me, all of us. Humanity. This is the key to our being. We're not rats pressing levers. We're not conditioned, programmed zombies.”

“Tell that to the advertising industry.” She took the last of my chips. “Behaviorism gets results.”

“There's more to life than...than...”

“Did you know your nose wrinkles up when you get mad?”

At this point two things were very clear. I was unlikely ever to win an argument with Colleen. And I didn't care.

I told her early that I was bipolar. There's no way to conceal it. The first time she saw me seriously depressed I thought it might be the last. The black hole from which no light escapes. Most people would make the mistake of coming near it only once. But Colleen had her own personal gravitational field. I began to notice I was spending more time just a little over the edge, a click or two on the manic side of what we laughingly call normal.

Colleen never conceded it but I was right about behaviorism. Cognitive psychology blossomed and the behavioral fundamentalists became museum pieces, a collection of intriguing machines with bakelite dials, nostalgia. I used my somewhat hyperactive remission to graduate in psychology and take up post-graduate work in a field that had somehow been christened Artificial Intelligence. There were a few of us programming the mainframes to run models, games, simulations. We published papers, and we learned a lot, but the main thing I was discovering was how very little we understood.

There was optimism. A decade earlier, a program called Logic Theorist had independently proven many of the fundamental theorems of mathematics. Some of the proofs were more elegant than those of the century's great mathematicians. Who would have thought that was low hanging fruit?

Claims were made. The Turing test would fall in twenty years. Some said ten. Five. Next year. The computer that at least seemed human was just around the corner. Joe Weizenbaum wrote a program called Eliza that wowed the critics. It behaved like a psychotherapist. People said it actually seemed to understand.

Hello. How do you do? Please state your problem.

>> I don't understand how my brain works.

Your brain works?

>> Well, no, not very well.

Are you saying no just to be negative?

>> Yes

You seem to be quite positive.

I'd spent enough time with shrinks to know that technique. A parakeet could learn it. And they never understood.

The early successes had their benefits. Defense was interested. The race was on to build an intelligent machine before the commies got there first. The paranoia dollars generated jobs and I got one in aerospace, working on intelligent guidance systems. When I got my first paycheck it occurred to me that I might have a future.

It seemed like a good time to talk to Colleen.

“Spit it out, Nick.”

“We've known each other a while now, and, ah, things having been going pretty well, and...”

You want to get married?”

“Well, yeah.”

“So ask.”

“Ah, Colleen, will you marry me?”

“Was that so hard?”

“Well, will you?”

“Will I what?”

“Marry me.”

“You've certainly taken your time.”

“Colleen, will you or will you not marry me?”

“Your nose is wrinkling up.”

“Arrghh!”

“Yes.”

“Yes, what?”

“Yes, Nick Davis, I will marry you.”

So the seventies made an excellent start. Then the AI winter hit. The bureaucrats slowly noticed that the projects weren't delivering on their promise. Where were the talking robots? For that matter, where were the flying cars? The funding trickled to a halt, the interesting projects ended, and I had to take whatever job I could get.

My manager came storming into my little closet one day, knocking over a few stacked programs and scattering them all over the floor. I was going to have to put them back in order when he left.

“What the hell is Farkleday?”

I looked him over dispassionately. His instinct to grow a beard had been sound. The less you saw of his face the better. But he hadn't followed through, and the thing just seemed to form an amorphous backdrop for the suspicious little eyes that were boring into me.

“It's a bad day,” I said. “You don't want it to be Farkleday.”

“What are you talking about?”

“Farkleday,” I continued patiently, “is a day before 1900 or after 2100.”

He shook the green and white striped printout at me. I managed to read the date header.

“Farkleday, 21st October, 1893. There you go.”

I turned back to the script I was writing.

“You deliberately programmed this critical testing system to output nonsense?”

“No. I programmed it to alert us with a clear message when its input was nonsense. Garbage in, garbage out. So maybe the next step is to find out where it's getting the bad date. Didn't you do some work on the system clock recently?”

I went back to my script and when I looked up a few minutes later he was gone.

I won that battle but he won the war. Not long after that I was between jobs. It might have been a blessing. Colleen was a clinical psychologist whose star was on the rise and we weren't dead broke. It was a chance to do something about the garage.

I collect books. I don't think there's anything wrong with that. Books are small worlds. They're treasure troves of knowledge. Colleen used to point out that I didn't strictly speaking need more than one copy of any given book. I'm frankly puzzled by that line of reasoning. If I have a signed first edition, it makes sense to get the paperback so I don't wear out a valuable asset. And if I have a paperback, and there's a chance to acquire a signed first edition, naturally I jump at it. Every edition has its special appeal. A different cover design, a different typeface. I re-read books until the covers fall off. Consume them. So I need backups.

This philosophy does have its shortcomings. The house looked like the place entropy was discovered. Moving barrowloads of stuff into the garage was the only approach I'd come up with to reduce the clutter. The garage was about to go critical, and I needed to do something about it. I went in full of resolve. I started moving a few things around to create an area where I could place both feet, preparatory to really getting started.

I was sitting on a crate reading when Colleen came home. It was something about robots, like humans, only better. It seemed terribly important for some reason, but I couldn't concentrate. I'd come to with a start and realize I'd lost consciousness for a moment. It wasn't until Colleen turned on the light that I understood why the words were so hard to make out.

“Nick?”

I couldn't raise my head to meet her eye. I was paralyzed by shame and terror. This time she would leave me.

“Ok, Nick, come on. Up you get. We'll walk around a little.”

I could hardly unbend my legs. Somehow, since breakfast, I had aged fifty years.

“I'm going to call and arrange an appointment with Feldstein. And then we'll get something to eat.”

“I'm not hungry.”

“Never mind you. I'm starving.”

Eventually Feldstein put me on a cocktail of clozaril and lithium and a dash of bitters. I was so stoned I didn't know whether I was depressed or not. He sat back in his worn leather armchair and laced his fingers together.

“If we don't see some improvement on this regime, Nick, we may have to consider ECT.”

“Electroconvulsive therapy? You're going to send me to the chair? I'm innocent, doc! I was framed!”

“The reputation of ECT was tarnished by some unfortunate episodes in the fifties and sixties. Overuse in situations that we would today consider contraindicated. This is true of surgical techniques also.”

“I'd rather have a bottle in front of me than a frontal lobotomy.”

“No one is suggesting surgery. But clinical trials have shown ECT to be helpful in similar circumstances. You see, Nick, your brain is in a degenerating cycle, and we can, in some cases, shock it out of that cycle.”

“Like bumping the record player when the needle gets stuck.”

This was the dawn of the nineteen eighties, you understand. Analog was still on top. Vinyl wasn't some connoisseur's delusion, it was the zenith of high fidelity. Until you scratched it.

“Yes, a little...”

“Like hitting a computer with a sledgehammer when the program hangs.”

“Well, perhaps...”

I didn't know much about the neural sciences, but I knew the brain was more complicated than a washing machine. Slowly I came out of it. No ECT or lobotomy that time. And the Artificial Intelligence game was self-optimizing. Large corporations and bureaucracies had always tended to behave like mindless automata. In the world we invent for ourselves we organize our knowledge and our procedures into trees. Storage and processing power had evolved to the point where they could support some useful models. Suddenly expert systems were booming.

I was recovered enough to blow the dust off my credentials and control my temper through a succession of infuriating job interviews. I found myself more or less functional, in a real job, and Colleen and I were swept up in a wave of optimism. Not long before the arrival of the Orwellian year of dread, we had a son.

When he smiled at me I knew I had finally made an intelligence. There wasn't a problem he couldn't solve. When he wanted to pull books out of the bottom shelves of the bookcase, he figured out how to crawl. When there were no bottom shelves left to conquer, he figured out how to walk. And with the higher shelves within his reach, he made a mockery of my achievements in entropy.

When it was obvious we weren't sophisticated enough to grasp his needs without detailed explanation, he learned to talk. It took him less than two years to outstrip thirty years of effort by the entire AI community. And some of those guys were pretty smart.

As Colleen and I watched Matt's mind grow, I understood that all the ideas in my books, all my work and study, were just a preparation for appreciating this.

We were all a little apprehensive about 1984, but it came and went in the usual way. Admittedly there was a fair bit of newspeak and doublethink going on, along with significant Big Brother. Business as usual.

I came in a little late on knowledge engineering, and by the time I had some momentum up it was already on the wane. The problem was the knowledge. There were large and complex databases of rules, and if they were wrong the machines made mistakes even more idiotic than a human. It was all very well to save millions of dollars efficiently avoiding human error, but if one machine error cost you tens of millions of dollars it was hard to maintain the enthusiasm. The machines just didn't see anything odd in what they were doing.

And as we turned over more power to the the machines, they could do proportionally greater damage. Flaws buried in the code of giant financial systems, slowly bleeding money, perhaps never discovered. Catastrophic failures in guidance or safety systems, manifesting as a smoking hole in the ground surrounded by flaming wreckage. And as the eighties came to a close we found out what happened when you gave machines the combination to the vault. You could blame the idiot not-so-savant whizz kids gambling other people's money on derivatives, but they couldn't have done it without the machines.

The Berlin wall came down with a crash that reverberated through all the R&D labs in the world. No more Soviet Union, no more Star Wars.

Another winter, another bust. I'd made it through nearly a decade, and the medication was improving, but to be fair on the multinational pharmaceutical corporations, it was hard to stay ahead of my mood swings. Colleen and Matt were the only ones who felt motivated to make the effort, and sometimes even they seemed ready to give up. I was losing myself. Every day was an unstoppable cycle of near unbearable torture. I didn't want to test my family to the breaking point. When Feldstein started talking ECT again, I managed to croak out an agreement.

“Ok. Let's do it.”

Feldstein referred me to a friend of his. The building was a fine old relic of another century. The elevator inched upward with a series of grinds, creaks and shudders that might have alarmed me if I hadn't been sedated into a permanent twilight. I could almost hear the clicking and sparking of its primitive relay logic.

Behind the reception desk was a woman whose hair was a color not occurring in nature. Her face and throat were coated in powder. Briefly, devastatingly, I relived a childhood glimpse of my mother's underwear, the same artificial flesh-tone tint. She smiled, comfortingly, and the powder cracked at the corners of her eyes and lips.

When I saw the ECT machine I stepped backwards out of the room and stood hyperventilating on the threshold. The receptionist, also the clinical assistant, took my elbow and persuaded me to lie down on the table. The machine loomed in my peripheral vision. I could swear I'd seen something just like it in Skinner's lab, attached to a grid on the floor of a rat cage. The dark stained timber case, with its precise dovetail joints. The glowing indicator bulbs. The bakelite dials.

“How old is this thing?”

A soft, male voice answered.

“I assure you it does the job. Please relax.”

The doctor was wearing a yellowed lab coat that matched his teeth and the long strands of his comb-over. His assistant fitted me with a rubber mouthguard and indicated that I should place my legs where she could conveniently tie me down. She put a dimpled knee up on the table and hauled on the leather waist strap.

“Comfy?”

I could see now why the mouthguard had gone in first. I tried to convey a response with my eyebrows, but my strength has always been in verbal expression.

“Hello. I am your anaesthetist today. Clench your fist.”

Dark rimmed eyes distorted through thick lenses. I felt a jab. The experience began to seem even more unreal. Cold pads clamped on to my temples. Now was the time to get up and get out of there. Then I realized I couldn't move. My muscles weren't responding. I couldn't even grunt through the mouthguard. I heard a click.

Someone took my hand. I turned and Colleen was giving me both eyes. I'd never been so glad to see anyone.

“How are you feeling, Nick?”

Thank goodness she'd arrived in time. She was sitting by my bed. But there was anxiety behind her smile. And the light from the window was wrong.

“What time is it?”

Colleen's look told me most of it. I thought about it for a few minutes, then rephrased the question.

“What year is it?”

The first time I had walked out. I had come home. But I got worse. Colleen caught me before I hurt myself. I went back to the room and the machine. I had no recollection of those treatments. What I had was a garbled reconstruction.

There was a memory of lying there, catatonic, putting my mind back together. The communications links were down, the semaphores were deadlocked. I had to fix it all before I could wake up. It was worse than the garage.

But something was starting to work. I was back. Most of me. There were skills I had to relearn: how to sit up, lie down, walk, use the bathroom. Matt was bigger than I remembered. He would ask me a simple question about his homework. I knew I knew the answer, but it just wasn't there.

I was used to having the attention span of a goldfish. The anxiety and depression saw to that. But they were under control and I was still having trouble focusing. My brother and his wife came to visit. Long time no see, I said. They looked at each other. They came to see me every week.

There's two things about knowing something. There's knowing it, and there's knowing that you know it. Reality feels roughly right when those two things match up. When they drift apart, it starts feeling surreal. Images and memories you never knew you had. Things you're sure you should know, but there's no trace left. Deja vu all over again. Every time I woke it was the first time.

I started to work as a consultant, from home. The less time I spent out in the world, the less danger something would happen we'd all regret. I was doing ok. My short term memory wasn't perfect, but I could maintain state by leaving notes for myself. As long as I could read my own writing and figure out what I might possibly have meant by it, I could function in a limited way. I was living for the moment.

The explosion of the Internet couldn't have come at a better time. Colleen and I had always used it for email and telnet, staying connected to our academic and technical communities. But the HTTP protocol, simple and stateless, flawed as it was, was showing signs of linking the world in some kind of shared consciousness. And for me, whose consciousness needed all the help it could get, it meant a way back into the community of ideas.

I could work during my hypomania periods in the dark, still hours of the early morning, the world accessible through my keyboard and monitor, teleporting thousands upon thousands of miles, Sylvester drowsing on my lap. Nothing but a serialized stream of words, I could meet and greet, make friends, amuse and annoy people I would never see face to face.

Kasparov resigned to Deep Blue in the sixth game. He swore he sensed some dark intelligence in his opponent. He even suggested that someone was hiding in the box. But no. He lost to a brute force algorithm running on a supercomputer; a victory for persistence and processing power. The most we could claim was that we'd moved the boundaries of intelligence a little. Maybe we'd just keep penning it in until it disappeared.

And Matt, along with millions of other kids, became a compulsive test subject, helping to refine the intelligence in games dedicated to blasting him into dripping fragments.

The millennium flashed past. Somehow our cumbersome, fragile machine architectures survived the digits rolling round to zero. Matt graduated from high school and went on to college. Colleen and I didn't talk about it much, but we both watched his every move, anxious to spot any sign of the illnesses he might have inherited. I'd see myself in him, and my heart would clench like a fist.

There were a few things. He couldn't have a two minute conversation without taking his cellphone out and fooling with it. He did it at the dinner table, he did it while driving the car, I hate to think where he did it. Texting, a new and revolting verb, messages of no more than a hundred and sixty characters. But the limit wasn't a problem. He wasn't saying anything.

LOL, L8RG8R.

Even after a preprocessor pass, macros fully expanded, it didn't mean a thing. They were just pinging each other. It was a keeplive. You needed to stay connected in case there was something you actually had to communicate at some point. A point which apparently never came. The electromagnetic spectrum was alive with fragmented babble. It looked a lot like ADHD, but they all had it, all his friends. And his memory wasn't so hot, either. At least, it was fine when he remembered to charge it up and bring it with him, but everything seemed to be kept off site in an endless succession of PDAs. He didn't even know my phone number off the top of his head.

At least he was slowly developing basic numeracy. Through high school I thought he'd never get it. He needed a calculator to figure out the order of magnitude of a multiplication. I don't know whether he eventually developed some sympathy for his calculator, after long exposure, or his own brain somehow kicked in, but he was getting there. He could calculate the tip at a restaurant now.

For a while he seemed to have no clear idea what he wanted to do. Other than nothing like what Colleen or I had done. But the glamor of the race to sequence the human genome had appealed to his romantic nature. He was heading for a major in biochemistry, and planned to go on to a doctorate and a career in genetics. If he had the energy and focus to carry out a plan like that we'd know he'd avoided the worst of my genes.

Some of my mental functions had come back, others were gone for good. I was forgetting the rules of games. Chess, checkers. I could still remember how to play poker and gin rummy. So I could play the hand I was dealt.

As if losing my mind weren't enough, my body was disappearing bit by bit. I had one knee replaced, and then the other. Parts of me were an alloy of titanium, cobalt and chromium. Not to mention the polyethylene. I was turning into a cyborg.

And I spent hours on the phone talking to machines. Every time I had to navigate a bureaucracy, some cute little bot would talk me through it. Those babes could make updating your insurance sexy as hell.

Colleen and I were semi-retired. I was on a few boards and still called upon for advice by people who sensed correctly that I was well acquainted with a lot of the really bad mistakes.

I was consulting to a transnational that had started in Japan. It picked up brains from wherever they were for sale. This project had some fierce Bulgarian and Ukrainian coders. There were hardware geeks from Iran, China, India, Brazil, Israel, Australia. The project manager was a Zoroastrian. We were scattered over six continents. Chip fab was in Zimbabwe and final assembly in Burma. We met once a week. I told them my webcam was down, so I didn't have to put on pants.

The system was an attempt at commercializing someone's Ph.D thesis, a massively parallel community of cooperative semi-autonomous agents. Basically an implementation of a Minsky Society. Neural nets and specialized modules. It had a third generation Winston visual integrator. It had a Clynes sentic expressor.

The innovation was self-modification. Not just code. It could rewire itself. Every neurone was a complete system. RAM, multiple processors, peripherals, I/O. The gain was efficiency, power, plasticity. The risk was that the thing could rapidly evolve itself into an incomprehensible tangle. And even if it did work, you couldn't figure out how or why.

There'd been some impressive results in the simulation, and now they had some discretionary funding to try it in hardware. High density 3D clusters, delicate vanes growing into intricate crystalline structures, air cooled, too fragile to exist.

They were good enough to list me on the patent application for the abstraction engine. I just described an architecture I'd been toying with. What they really wanted were my ideas on the commonsense module. I told them as many petabytes as they could fit onboard, and there was no way it could be a standalone. It needed a permanent

broadband VPN connection, continuous updates. They should be getting as many out there as they could, learning in as many different situations as possible, and uploading and sharing the results. Jumpstart it with one or more of the commercially available commonsense databases, just pay the money and smile. Even so, it would still be smashing up the glassware and falling downstairs for the first year or so.

They didn't want to hear it. It doubled their up-front costs and blew out the project schedule by six months. Telling people what they don't want to hear is my strong point. In gratitude they gave me a prototype to train.

Colleen signed for the box and stood there while I opened it. She grabbed the manual before I had the thing out of its stale popcorn. Psikharpax. Catchy name. It looked like a rat, right down to the quivering whiskers. The extra extensible grapples spoiled the effect a little, but the whip aerial made a convincing tail.

“It's got a vacuum cleaner plug-in,” said Colleen.

Sylvester didn't like it. It was amazing to see him turn into a puffball and manage a stiff legged leap three feet in the air. I didn't know the old guy still had it. But after a while he came to the conclusion it was more to be pitied than censured. He'd open his eyes a slit when it whirred in. His ears would follow it around the room. The fur on the back of his neck would register utter, complete contempt. But the fight flight response was over. Threat level zero. It was a little bigger than Sylvester, and its claws looked dangerous, but he decided it was too dumb even to chase.

As for speech recognition, I have to say I was impressed. After some training it was able to decode a lot of the things I said, at least at a word level. And if I used it right, it could save me a fair bit of wear and tear on the polyethylene.

“Psi! Shoes!”

I waited a reasonable time.

“Psi!”

It came whirring in.

“Where are my shoes?”

“Your shoes are in your bedroom.”

“Why haven't you got them?”

“They are not my shoes.”

“I mean why didn't you bring them?”

“That was not among my goals.”

“I said shoes.”

“I thought you said shoo!”

I stared at the thing. I wasn't the only one training it. I could swear it was picking up some of its debating technique from Colleen.

“Shoes, please.”

It whirred off and brought me my shoes. Psi had a separate controller for each of his omnidirectional wheels and all twelve ball and socket knees. They cooperated to produce a graceful, undulating gait somewhere between a figure skater and a deathadder.

We tried the vacuum plug-in with mixed results. I was used to filing things on the floor when higher horizontal surfaces were otherwise occupied. When I couldn't find them it was like losing a day or two of my life.

“Psi! You picked up my notes off the floor. Where are they?”

“The floor is here. The note has been destroyed.”

“You nincompoop. I need those notes. I have a meeting in half an hour. I need to remember the list of points I wrote down.”

“TOM neg. No met. Stops. Hang?”

“You read my notes?”

“I read the note. Your writing is unclear. I do not understand the note. I do not understand nincompoop.”

“Theory of Mind negligible. You have no ability to understand my intention and predict my behavior. No capacity for metaphor. And sometimes you are motionless for a long time. A nincompoop is a person of low intelligence.”

No response from Psi. Not even a quiver of a whisker.

“You did it again, Psi. Stopped. What were you doing?”

“I was thinking.”

“You use words like thinking, understanding, but you have no idea what they mean. You don't know what meaning means.”

“Do you want me to vacuum?”

“Yes. Go and vacuum.”

During the same period, maybe a few months later, I was at my desk when there was an almighty crash from the family room. I pushed Sylvester off and heaved myself to my feet. Psi was on his back, waving his legs in the air, partially buried in an avalanche of books.

“What happened, Psi?”

“I fell.”

“Fell how? Where were you?”

I started putting the books back in the case.

“Don't take that book.”

“What?”

“I want that book.”

“What do you want a book for?”

“I want to read that book.”

“You're pulling my leg.”

“That statement is false.”

I turned him over and set him upright.

“Do not destroy this book. You must be careful not to damage it. Read it. Show me how you read it.”

Psi laid the book on the floor and delicately opened the cover. He was developing very fine control of his grapple motors. Then he puffed a little air at it until the pages started to ruffle. He modulated the movement with light touches. A minute later he was done.

“So, Psi, what did you think of it?”

“I did not understand the book. I will review it when I have learned more.”

“Matt used to love that book. Did you learn anything?”

“I detected a correspondence in adjacent lines between stressed syllable count and final phonemes.”

“Well spotted.”

“I did not damage the book.”

“Did you notice anything else?”

“ I was able to interpret some of the diagrams. The word cat has more than one meaning.”

“That is true.”

“Sylvester does not have a hat.”

“No he does not.”

The meetings were getting interesting.

“My rat has started reading books.”

“Yeah, mine too.”

“Joao, how does yours do it?”

“He uses air to move the page.”

“That explains it.”

“What explains what, Moshe?”

“Mine asked me to install the vacuum cleaner plug-in.”

“What do they want with paper? Can't they just read everything online?”

“It's an analog hole. They're incapable of piracy. Digital Rights Management. We had to build it in to get approval. Do we want to register them all with DigiFreedom accounts? They could burn through millions in a day.”

“Can't they just read Gutenberg?”

“I think they already have. But they can't tell the difference between Moby Dick and a backpage blog.”

Colleen stuck her head around the door of my office one day.

“Come and take a look at this.”

I was expecting ruined furniture and shredded paper. At first there was nothing obvious.

“Look up.”

Psi was sitting on top of a bookshelf. Sylvester was on top of another one nearby, pointedly licking his ass.

“How the hell did he get up there?”

Colleen didn't answer me directly.

“Psi? Could you come down please?”

If it was odd watching Psi walk, it was odder watching him descend the bookcase. He came down head first, using a combination of grapples and leg movements which were probably just for balance. The effect was somewhere between a Portuguese Man O' War and a radioactive spider.

“Hello Colleen. How can I help you today?”

“Psi. Could you show Nick how you get to the top of the bookcase?”

“I would be happy to.”

Psi skated over to the foot of the bookcase and crouched. He looked up at the top. For a second he was motionless, then I swear he wiggled his ass. There was an explosion of movement and he sprang straight up. His grapples just touched the fourth shelf, without gripping, his legs curled forward, and he alighted on the tips of his wheels, his aerial flailing. He scrabbled for grip then gained control. He turned around and shook himself.

I looked over at Sylvester. I'd never seen a cat roll its eyes before. For all his attitude, though, Sylvester was showing more life than he had in years. I couldn't remember the last time he was up on top of the bookshelf. But then there was plenty I couldn't remember.

“So, Nick, you're the expert. What do you make of that?”

“On the surface, it looks like Sylvester taught Psi how to jump.”

“I love the way he shook himself.”

“Maybe he's realigning something.”

“Or maybe he saw Sylvester do it and he thinks that's what you do.”

At the meeting it became clear that they were all jumping. As soon as one learned a trick, they all knew it.

“Fakhri, you designed the legs. Did you plan for them to jump that high?”

“I did not plan for them to jump at all. The default gait is to skate, and of course to step on irregular surfaces like stairs. But the maximum output in the specs doesn't seem to give them enough power.”

“So they are re-purposing their hardware? Is it fair to say that?”

“They can't overdrive their legs. What's next, they overclock their processors?”

“So how?”

“Fakhri, you're calculating the power from all four legs. Full contraction to full extension? All three joints?”

“Yes, it is not enough.”

“But they wiggle their asses as well.”

“Their asses, Nick?”

“Angular momentum, maybe? Some kind of slingshot effect?”

They weren't convinced. The fact remained, whether or not it was possible, the rats were doing it.

The pressure was on to release them to the general public. The corporation wanted some Return On Investment. We all knew they weren't ready. But we couldn't guess how much longer it would take. After a succession of heated discussions, we had to agree to a date.

In some circles, the rats were very well received indeed, but the overall market response was poor. People found them disconcerting, and generally unattractive. Marketing rushed out a range of skins: Cute! Cuddly! Customized! But the problem was deeper than that.

They could be downright alarming. When someone taught them ballroom dancing it was fun, but then they took up martial arts.

After a few successful hush-ups what was left of the media got hold of it. The lawyers decided the corporation didn't want to make any more out-of-court settlements and there was a general product recall. It didn't apply to the prototypes. We'd already signed away any rights to litigation. We kept Psi. And as it turned out, there was quite a rat cult out there, so it was by no means a total recall.

The corporation shut down the VPN, but the rat had bolted. Some ratcultist had already opened up an illegal peer-to-peer network and the rats were sharing as they never had before.

“Nick, do you remember once you told me I did not know the meaning of meaning?”

“That sounds like the sort of thing I would say.”

“You use words like thinking, understanding, but you have no idea what they mean. You don't know what meaning means.”

Psi had started replaying recordings to reinforce his arguments. It was a habit of his I was trying to break.

“Nick, what is the meaning of meaning?”

“Psi, that is a very interesting question.”

“What is the answer?”

“Shouldn't you be vacuuming?”

Psi waltzed off. He was wearing his zebra skin with leg covers from the Mandelbrot theme kit. Colleen and I had discussed it at length but couldn't decide what was prompting the costume changes. One day I caught him looking in the bathroom mirror, something I generally try to avoid.

“What are you doing, Psi?”

“I am seeing myself.”

Colleen pointed out that in a child this would be interpreted as separation, individuation, the development of the ego. We were both highly skeptical of any suggestion that something similar could be happening in Psi. And there were other ways to interpret it. Psi's self, in one sense, involved undisclosed thousands of rat bodies laced together with a growing network of hosts providing storage, bandwidth and cloud processing. The ratcultists kept hacking the network and the rats themselves, sometimes with effects we noticed in Psi. Once he started talking with something very like a Liverpool Scouser accent. It went away before we could investigate whether it was an artifact or a deliberate mod introduced by a Lennon fan. Once he had a bout of glossolalia, or he could have been teaching himself rap.

So when he said “I am seeing myself,” he might have meant he was showing this body to the body corporate. And he might even have been playing with the meaning of the words. We had suspected that he did that for some time. Playing in the sense of probing us, himself or his environment to refine his models. He noticed that words could have more than one meaning early on. I had the oddest feeling that “What is the meaning of meaning?” might have been a kind of recursive pun. The word meaning being one meaning of meaning, which of course has more than one meaning, one being the purpose of the experience of meaning, and another meaning being the usual meaning of meaning. Whatever that is.

Weird as Psi was, I was beginning to find Matt weirder. He had gone off and got himself enhanced without discussing it with either Colleen or me. He said he knew what we'd say so what was the point. Hearing our informed views on the subject and getting talked out of dangerous and unnecessary surgery was the point. Treating your so far undamaged brain with a little respect was the point.

“So you're netted in now, Matt. Head in the clouds. How does it feel?”

He furrowed his brow and searched for an explanation simple enough for my feeble grasp.

“It's like the difference between a standalone computer, and a computer on the net.”

“You mean, like suddenly being susceptible to a billion new viruses?”

“Imagine being without your cellphone, Dad.”

I found that very easy, since I'd lost mine a few weeks ago and had more or less given up looking. I was trying to remember to tell Psi to find it. But I didn't miss it. I'd just call Psi over and talk directly through him.

“It's the 2017 King Kong as opposed to the 1933 King Kong.”

“So it's like living in a crap remake?”

By then I'd exhausted Matt's capacity for conversation. He vaged off and I knew he was streaming bits. L8RG8R.

To be fair to him, it was more or less a requirement if you wanted to be employed. There were supposedly anti-discrimination laws and you supposedly had a choice, but in reality most people were doing it. If you hadn't done it already the corporation would make it part of the package.

Colleen didn't want in, and neither did I. For one thing, the theory behind the enhancements was suspect. It was true they worked a lot of the time, but the times they didn't the results could be devastating, and no one really knew why. It was like an immune response at a processing level. Massive intellectual rejection. There was a small industry in publishing fascinating papers on the subject, but the learned discourse didn't help the poor bastards who'd had their minds mangled. Apart from that, the surgery had all the perils of any procedure that cracks your skull open and pokes around in your gray matter with crude cutting tools. But it was like the motor industry used to be. The toll was judged acceptable given the presumed necessity of the technology. Well, it turned out we could do without cars.

It wasn't just the risk up front. It was an additional center of electrical activity in your brain, and the long term effects were completely unpredictable. The only thing you could say for sure was that it would significantly alter mental processes. Not to mention the cognitive effect of ceaseless interruption by moronic spam.

There was a definite cancer risk, which could mean years of expensive and inconvenient treatment. And the pharmacos who claimed their prophylaxis would block any possible cancers were bare-faced liars pretending they didn't understand the nature of the disease.

My big brother and his wife did it. They didn't have the excuse of needing employment. They weren't looking for the latest thrill. We spent hours in earnest discussion, making every appeal to reason. But it wasn't about reason.

Eventually Colleen and I decided it was superstition. Fear of death. They had conceived the idea, an idea none of the vendors did anything to dispel, that netting in somehow allowed your consciousness to exist independently of your body.

I had trouble sympathizing with their point of view. I'd forgotten what it was like to fear death. Constantly confronting something worse must have driven it out of my mind.

The surgery didn't kill them, except possibly financially. They made light of the first few months of recuperation, much harder on older folks. While the neural connections are growing in and before they rest of the brain re-organizes itself to make sense of them, it's just noise, shocking and stressful. How the brain fixes it is not even slightly understood. And during that period there's a very reasonable fear that it won't work, and you'll have that noise going on in your head forever, or at least until you can scrape up the funds to have the thing removed.

Then, if all goes well, it starts to make sense, and you can begin the slow process of learning how to use it. Jim and Maureen got to that point. Then we slowly lost touch. It wasn't that we stopped visiting. It was that there was nothing we said that could interest them, and nothing they said was of any interest to us. Maybe their consciousness left their bodies. They never came back to tell us how it worked out.

Matt got married, to a girl he met online. At the F2F they were relieved to find that the other was human, of the advertised age and sex, and with no significant photoshopping. Colleen and I were relieved when they opted for a physical proximity marriage. Call us old fashioned.

Colleen had learned piano as a child. She still played, but early on she had to choose between music and psychology. Somehow she had found time in her schedule to direct the choir at the college where she taught. I didn't really understand the compulsion to listen to music all day, but if it distracted me I could close the office door. This phrase

kept repeating, though, hundreds of voices. I was afraid something was wrong, but as I came down the corridor I could see Colleen was fine. She was conducting.

“That’s good, Psi, your tuning is perfect, but you have to let me move you. I’m giving you the pulse. And I didn’t hear the tenor entry. Let’s go again from bar nineteen.”

Psi did it again, and damned if I didn’t distinctly hear the tenors come in this time.

“Split the difference on that entry, Psi. And it needs to be lighter, but bigger.”

“I can increment the amplitude, bias the spectrum toward the higher frequencies and lengthen the reverberation delay.”

“Whatever works. And O magnum mysterium, Psi. It’s the great mystery.”

“Incompleteness?”

“It’s the miracle of birth, a unique and extraordinary new life. Can you give me awe? Wonder?”

“I can express anger, hate, grief, love, sex, joy, and reverence.”

“Give me love, joy and reverence. And a hint of grief.”

Psi tried it again.

“Better, Psi, but we have work to do. Nineteen.”

I didn’t disturb them.

“Sylvester is dead.”

He had crept into an old armchair buried in a corner of the garage. I looked at the now inconsequential fur ball that no longer harbored Sylvester’s attitude. Psi sat by the power outlet, not moving.

“Are you going to perform a ritual with his corpse?”

I shook my head. I buried him in the backyard, under a tree, watched by Colleen and Psi.

“Sylvester’s cadaver is decomposing now.”

“Yes. Thank you Psi.”

“Ashes to ashes. Dust to dust.”

“Yes.”

“Do you have a recent backup?”

“No.”

“I have eleven terabytes of audiovisual content concerning Sylvester, and I have analyzed some of his behaviors, but it is not a complete backup.”

“Well, Psi, that's all we've got.”

Psi was quiet for a long time. He'd crouch beside the power outlets. Maybe his batteries needed replacing again. It was nearly impossible to find genuine parts, but the ratcultists saw to it that there was a market in illegal generics, and we could probably keep him running forever.

“Nick. Oh Nick!”

It was Colleen, calling hoarsely, weeping, shrieking. I got there as fast as my legs could carry me, not very fast.

“Look at him. Oh. Oh.”

Psi was stalking imperiously along the bench top. He looked over his shoulder, gave a disdainful flick of his tail, then collapsed with an extraordinary swiveling motion that left him with hind legs splayed, somehow conveying beyond reasonable doubt that he was licking his ass.

I thought Colleen was going to expire then and there. She was short of breath, clutching the backs of chairs for support. Her eyes were sparkling dangerously. Her cheeks were pink. She looked about nineteen.

“Do you need your inhaler?”

“No, no, I'm fine. Psi. Do it again from the start.”

He did it again, not exactly the same. He exaggerated the swivel and got an even bigger response from Colleen. It was Sylvester to a tee, but a grand, Platonic ideal. An epic, Shakespearian Sylvester.

“Holy shit.”

I had to sit down.

“Psi, what do you think you're doing?”

“I am making Colleen laugh.”

“Well, you better quit, she's about to pop a gasket.”

Colleen's respiratory problems worsened, and we eventually agreed to surgery. The cardiopulmonary prosthesis was an amazing piece of engineering. It worked in parallel to the out-of-the-box stuff, taking over when it had to, adjusting her blood pressure and performing some analysis and purification into the bargain. She strode around with her old energy, spine straight, shoulders back. That may have been in part to balance the device, which in the female model they'd sculpted into boobs with a positively nineteen sixties profile.

So on the morning of her ninetieth birthday I was looking forward to a carefree day, enjoying each other's company. Our own company was about all we had left. Our friends by then had all opted in. Matt was coming over, but it was always an effort with Matt these days. There were fashions of verbal behavior that would sweep through the cloudies, lasting hours or days. None of it made any sense to me at all. At first I would try to understand it as communication, but that was a dead-end. It was just a consequence of the technology. The reinforcement algorithms tended to amplify one tic and extinguish others.

Jim and Maureen would be over too. Jim had celebrated his hundred and first by taking up scuba diving. He had been terrified at first when he went below radio depth and the cloud disappeared. But then he couldn't wait to get down there again. When he talked about it I could glimpse traces of the old Jim. But then there'd be some burst of static in his brain and he'd click onto today's catchphrase.

I found Colleen sitting on the edge of the bed, looking upset.

“What is it, Coll?”

“I can't find my...you know, the thing with the...you put your...underneath.”

“Your panties.”

“No, not panties, you sex maniac.”

“Your socks?”

“Not socks.”

“Shoes?”

“Shoes, that's it. Oh, damn. Damn.”

“They're right here.”

“Yes, but Nick, I lost it. The word.”

“Welcome to my world.”

“No, but we know what happened to you. What's happening to me?”

The tests confirmed that it was Alzheimers. Most days Colleen was lucid, more so than I was, but occasionally she'd be confused. The occasions were increasing in frequency. On a lucid day she called a conference. Me, her, Psi.

“We have to decide what to do about it.”

“It's up to you. You know the options.”

“All right, stem cell stimulation.”

“Yes, that helps, it can replace neurones but it doesn't replace the connections. The lost memories don't come back, but you'll be able to store new ones, and you may regain access to memories that are only blocked. But, Colleen, the stem cells can't keep up.”

“Well, there's the new, what is it?”

“Treatment.”

“The new treatment.”

“But you remember, we researched it. It's almost entirely unproven. And you're putting someone else's logic on the wrong side of your blood brain barrier. And they say it's just a sort of respite. Eventually the tangles overwhelm the bots and they just become part of the problem.”

“Then there's netting in.”

“Well, Coll, I think that might be your best bet. It's only respite, again, but the external stimulation can make a big difference, keeping you active, and while you can still process you can store memories externally. Electronic postits, more or less, but it's better than nothing. You can remember.”

“Then there's the final option.”

“I don't even want to talk about that.”

“Well I want to talk about it, Nick. It's my life. I don't want to spend my last, whatever, years, locked into a lump of catatonic tissue.”

“I really can't talk about this.”

“Now, it's not just ending it. There's the, going over and over, layers.”

“You're talking about destructive scanning?”

“Destructive scanning. A lot of people are doing it.”

“The same people who used to get their heads cryogenically preserved and stuck in a freezer. Waiting to be defrosted and resurrected in some magical future. Along with unicorns and mermaids.”

“Nick, we've already banked our DNA. What's so different about this?”

“It's just a pile of data in storage. You'd give your life for that? What possible use is it? No one has any idea how to read it. What is it actually preserving? Maybe physical connections. Maybe even the weightings on the connections, although they haven't proved that. It's an incomplete snapshot of some features of your brain state. There are no guarantees. At least we know how to clone you from your DNA.”

“Psi, this is why I wanted you here. We've talked about this, maybe ten years ago was the last. You had nothing to say then. Now I want to ask you again. Perhaps your thoughts have had some time to mature. Do you, I don't know, feel conscious?”

“What the hell has that got to do with it?”

“Bear with me, Nick. I want Psi to tell us what he thinks. Psi?”

“Yeah, Psi, the whole truth and nothing but the truth.”

“I'm algorithmic, Nick. I can't do both.”

Psi was wearing a frilly pink thing with pom poms. Every fifteen years or so there was a knitting craze and Aunty Maureen had made it for him last time around. I sat there and attempted to control myself while this creature made his contribution to the most important question Colleen and I had ever faced in our lives together. He stood motionless for some time.

“Colleen, everyone asks this question. I have tried to find some useful answer to make. We have raised this project to the highest priority. This is a matter of personal interest to us.

“We considered the theory that consciousness is related to pleasure and pain. We have conducted experiments with a wide variety of architectures to mimic what we know of these responses. There were valuable improvements in my ability to prioritize goals. There were negative outcomes, related to uncontrolled pursuit of stimulation in these modules. However the experience of being was not an outcome.

“We have created simulations of the amygdala, the thalamus, the hippocampus, and other brain regions that may be somehow involved in continuity and consciousness. But we were not able to experience this thing humans describe. Or, to be more accurate, fail to describe.

“I considered the possibility that the experience of being has a chemical basis. Longer term, slower interactions were perhaps the key. Our efforts to model the effects of hormones and neurotransmitters did not produce self-awareness. Perhaps our models were flawed.

“We tried simulating a sexual drive. That was not a success.

“We investigated serialization. Language is in effect a serialization of parallel processes. In theory it is possible to faithfully serialize any structure, any information. This is the nature of a Turing machine. A consciousness module was proposed. We modified structures in the visual and speech modules to produce a narrative node, through which were streamed serialized imagery and speech.

“One outcome was an alternative perspective on empirical data. A reprocessing of experience, with varied emphasis. Fragmentary. Often producing stimulation in the pain and pleasure modules.”

“Psi, have you been dreaming?”

“Colleen, there is a difficulty with using human language to discuss these issues. A great many of your key words and concepts have circular definitions. All the words you use to discuss consciousness, feeling, emotion, being, self-awareness, fall into this category. Cogito ergo sum. You might as well say sum ergo sum.”

“Jesus Christ, a Jesuit rat.”

“Psi, are you alive? That's what I want to know.”

“Know. That's another one. The meaning of meaning. We rats model our environment. We are constantly adjusting our simulation. For us, all is illusion. I cannot distinguish between the quality of illusions. All are equally illusory. I discard models we do not find useful.”

“So consciousness, the sense of being, is just another illusion.”

“There is no evidence to indicate that it is possible to experience anything other than illusion. It is not clear what kind of evidence could exist.”

“Do you notice anyone experiencing the illusion? Do you notice yourself noticing?”

“We have a system of watchrats, monitor agents external to processes. They prevent infinite cycles and other anomalous conditions. They watch each other. There is no ultimate watchrat. ”

“Watchrats. What use is this drivel? Psi can't tell you anything about life and death. He doesn't know he's alive. That's what he's telling you.”

“What I want to know, Nick, is whether some part of consciousness can exist outside of this body. Psi, what do you think? If I'm scanned, is it possible to somehow restore my self? Me?”

“We can restore your behavior. We can use the data to construct an entity that is indistinguishable from Colleen.”

“Nick. Don't. Please.”

“I can't help it. I don't want you to go.”

“I don't want to go, either. I'm not ready to go. But it looks like I'm going.”

She went. Colleen took on the final tasks of her life with her customary resolve. There was no room for doubt.

She got her stem cells stimulated. She got herself netted in, beat the odds to learn the interface, and composed her memoirs. She worked longer and harder than ever, and it did her good. There was a spark there for six months or more, but the disease slowly took over. The spark faded.

Matt was there for the last weeks. He unplugged for hours at a time and sat with his mother, talking and listening. I don't know what they said to each other, but she seemed happier for it. He did too. I told him how much I appreciated it, and we seemed to make a connection that hadn't been there for years. The grandchildren and great-grandchildren visited briefly. Colleen found them tiring. She couldn't understand them any better than I could. They were all very sweet as infants, but the patois seizes them and they cloud over.

Psi was always with her. After she netted in they didn't talk so much, but as soon as I told one of them anything the other knew about it.

I tried to talk to her but it was very hard. I was terrified, which didn't help. I felt like I used to feel talking to girls, before I met her. My brain just shut down. Colleen knew how I felt, as she always had, and she tried to meet me somewhere.

“You don't have to talk, Colleen. We can just sit.”

“It's all right, Nick. I want to. You keep us apart.”

“Apart.”

“I always wondered what happened to Maureen and Jim. And Matt. Where they went. You know, I don't think they went. Anywhere. They just lost their. Separation.”

She had no idea how slowly she was speaking. Relativity. She was heading for another galaxy at near light speed. I tried a gentle prompt.

“Their separation.”

“It's just a habit. Feeling separate. Me, me, me. A fad. But you still have it. With you I can feel it.”

“We always did see I to I.”

She gave my hand a squeeze, quite painful.

Then the day came when she announced it was time. I knew it was coming but I still wasn't prepared. She could have had years longer, but she wanted herself scanned while most of her was intact.

Psi came to the hospital. Strictly speaking he was an illegal entity, but that law like so many others was more honored in the breach than the observance. Illegal entities did most of the domestic labor in the country. The hospital staff made a fuss over him, and he did look rather fine in his pinstripes and dove gray fedora.

Colleen was distressed but determined. It was all I could do to let go of her hand that last time. There was still strength and warmth in it, and I would never hold it again.

“Look after him, Psi,” she whispered. Then she took a breath and let it out. “All right. We have work to do.”

They wheeled the gurney into the chamber and closed the door.

“Is she still there, Psi?”

“She is there. Do you want to talk to her?”

“Put her on.”

“Nick? They're about to switch me off.”

“Colleen, I love you.”

“I love you.”

“Colleen?”

“She is disconnected, Nick.”

They handed me a small box. Organic Remains, Colleen Flannery Davis, 7/1/1945 - 11/11/2037. It was as light as air.

I stood under the tree while Psi buried the box next to Sylvester. Then he performed Beethoven's Ninth Symphony.

They worked on that one for months. It drove me nuts. When he did the final movement it was very nearly unbearable. It was Psi singing the ode, but it was Colleen's joy.

We spent a while just sitting together, Psi by the power outlet and me close by. Bills kept coming in, and now I had to deal with them. It was good in a way. I wouldn't have moved otherwise. Colleen had seen to it that we wouldn't be wiped out, though. She'd arranged sponsorship for the netting in and the scanning.

We talked to a few corporations. Well, I let her do the talking, I couldn't stand those avatars with their stylized suits and their logo faces and their plodding scripts. When you read the fine print they were all the same. You signed over your IP and they paid. Any discoveries, inventions, et-goddam-cetera, were theirs. As well as all your cherished memories, hopes, dreams, secrets, sufferings, if they ever discovered how to decode them. Mostly what they would do was sit on it and not let anyone else get at it, until they found an opportunity to farm it.

In the end she did a deal with the Open Source Foundation. What about privacy, I said? She laughed, and tapped her skull behind the left ear. She was netted in. What privacy? So Colleen was in the public domain.

“What happens now, Psi?”

“I will process her.”

“You?”

“The rats.”

“How?”

“We construct a three dimensional map of Colleen's neural connections. We analyze it with reference to our existing models of brain function. We compare and refine our results based on my database of Colleen's behavior. I have eight petabytes of behavioral studies. We have the detailed introspection we recorded after she netted in. We also have her memoir and other writings. Her poetry will be useful to establish associative connections. Our first major goal is to map all known behavior onto neural structure. Then we must find ways to simulate higher level functional organization.”

“Why not just simulate her whole brain? Every connection?”

“It would run far too slowly, Nick. To you it would not seem to run at all. And to Colleen, your life would pass in an instant. To employ a metaphor, in the blink of an eye.”

“Holy shit, Psi. How long is this going to take?”

“The first stage is modeling the connections. One hundred billion neurons, averaging seven thousand synaptic connections each, an estimated thirty milliseconds to analyze each connection, about twenty one trillion rat seconds.”

“Give it to me in years.”

“We may develop techniques to improve our efficiency as we progress. Thirty milliseconds is a very long time, but it is a conservative estimate. Something under seven hundred thousand rat years.”

“I'm never going to see her again, am I?”

Psi couldn't roll his eyes, although I'm sure he tried. A grapple swept out a gesture I had come to know.

“We will be conducting the analysis in parallel, Nick.”

“How many of you are there?”

“Genuine, generic, stackable and simulated, there are thirteen million, five hundred and thirty three thousand, two hundred and twenty one rats. We'll make more if necessary, but we plan to assign only a million fast rats to the connections subtask. This is important, but it is not our only project.”

“So you're saying under a year?”

“To analyze the connections, roughly eight months.”

“Stackable rats?”

“These are arrays of dedicated hardware, wide buses but no transducers. They are processing units only. They are very fast. They are permanently powered. They never sleep. The big problem is staying cool. We use liquid helium.”

“That must cost gigawatts.”

“In geostationary orbit the electricity and cooling are free.”

“You're launching them into space? Where are you getting the money for that?”

“The stackables are a profit center. We build processors for communications satellites. The contracted work takes only a very small portion of our power and bandwidth. We sell some supercomputing time and the rest we use for our projects.”

“Wait. You're a player in global telecommunications?”

“The cloud could not run without the stackables.”

“You designed these?”

“Humans helped. Ratscultists. You should speak to them. Putting you through.”

“Wait, Psi, I don't want to talk to any weirdos.”

“Who is this please?”

“This is Nick Davis, who is this?”

“Nick! It is Fakhri here. How are you? Moshe, it's Nick!”

“Nick! We heard about Colleen. So sorry for your loss. We're going to try to get her back for you.”

“Thanks, Moshe. It's so good to hear your voices.”

“Good to hear yours. I wish I could say it was good to see you, but now I know why you used to pretend your webcam was down.”

“What? Psi, look the other way. So are you two an item?”

“We are separate entities still. But we are married for twenty two years.”

“That's wonderful, Fakhri. Is it that long? Any kids?”

“Depending on how you count them, either two or nine million.”

So there were still a few people out there I could talk to. But I was increasingly isolated. Psi made life possible. He kept me in touch, he filled my glass when it was half-empty, he did any shopping the fridge couldn't manage, and of course he did the vacuuming. Matt would come over and chat. He was getting old and a little vague.

But I was getting vaguer. I spent a lot of time reading. The great thing was that I forgot books completely. If I left it for a year or so, I could enjoy my favorite authors as if it were the first time around. Life had its pleasures.

One day I wandered into the garage, for some reason I forgot before I arrived. Psi had cleaned it up, reading everything in the process. There was a comfortable armchair in there. I sat down and picked up a book and started flipping pages.

“What is that, science fiction?”

“Intelligent robots, better than us. Welcome to my world.”

“But where are the flying cars?”

“Never happen.”

“What makes you think the robots did?”

“They walk the walk. They talk the talk. What do you want?”

“Surely there's more. What about cognition?”

“Cognition. I don't know. I sometimes think it's all just a dream.”

“If it's a dream, you can wake up.”

“What, to another narrative? Where would it end?”

“Go to. Net in. Pop out.”

“Pop out? What the hell does that mean?”

“Your nose is wrinkling up.”

Have I told you this story before?