

1. Visiting Albuquerque

Once when I was a teenager the family went on a driving trip with a stop in Albuquerque. We arrived there at night. From the car it looked to me like any other city, with bright lights. But when we got out I looked up and saw the Milky Way.

My way rounded Earth like an orbit. I was traveling to visit aliens from outer space and I felt free, as free as I ever was though I could not stray from the railtube lines. I was following an east-west trunkline across southern Africa with a short offshoot at the end to reach a point in the South Atlantic labeled “Albuquerque”. I suppose these aliens chose their own name. The north-south trunkline I had come down an hour before lay already out of sight beyond the right edge of the map on the other side of Africa.

The map was virtual of course but for this occasion glasses, or perhaps the Net itself, presented it as surreally real, correcting for the individual irregularities of my eyes so that the view was sharper than direct vision. I guess it’s like a rehearsed memory, clearer than the wavering forms of the past. The view was of an unfolded paper map in a projection having curved lines of latitude and my route was traced heavily in blue ballpoint pen. The pushpin meaning you-are-here stood in blue “ocean” and declined smoothly west while pretend paper fibers slid around it under microscopic control in tiny hyperreal movements that I could not have seen if the paper existed. The presentation included a tiny scritch sound like termites with diamond teeth for the moving pushpin and the scent of wood and leather and old books that in my imagination was the smell of a British explorer’s study in 1900. The Net is more subtle than I know but it doesn’t always let on.

Ahead was a pretend crease in the paper with pretend abrasion then a turn to the northwest as my route left the trunkline. Before then I had a ritual to perform. “Denis,” I ordered (it’s pronounced “Denise”), and since she is an original like me glasses placed me as if I were with her in person back home in the Garden where the light is thin and cold and the air always has a little bite. Denis was sitting in the filamentary airframe on Street, dark against the brilliant scene. She knew the timing and had perhaps just put away her work on the variant life art project. Nobody else was in sight, only a few dangling loops of inactive airframe.

“Of taking many looks there is no end” she quoted from somewhere I didn’t recognize.

“The dome of my skull would be a whispering gallery were it not that I can look out through the peepholes.” I’d hardly left and nothing needed saying, banter was part of the ritual.

She tilted her head forward. “Suppose a real angel came from heaven. He’d go mad, so have your blindfold ready.”

That was more like it. “Maybe they came to note the secret of Da Vinci’s drains” I answered pretending to pretend to take the joke seriously. Is the conversation hard to follow? That is the way of it on Earth, I’m sure even here you will see when you crosscheck with your library. I lifted my head to look at the communal nuclear

computation experiment attached to the ceiling far over Street and stretching out of sight in both directions with the airframe around it uncoiled into moving waves of smoke that carried rod-shaped and Y-shaped robots into and out of and around it, appearing and disappearing in the smoke, working to finish details so that it could be closed up.

“Then I’ll just stay here with my maiden aunt until it’s time to strike out on my own.”

“Oh? Are you going to go outbound when she dies? Voyage on the deep for ten days and nights to arrive at the frosty cliffs? Though Albuquerque arrived here as well. Careless of them.”

“Maybe I will” she said “but it looks like the Net is about to tell you what you’re doing so I should go. Give ’em hello.”

“Westward ho” I closed, and glasses crossfaded back to the map.

Rituals are supposed to be calming, but now I was past the fold in the map and impatience started to nibble at my fingertips. That was silly. I closed my aimless hands. “Are they little and green?” I don’t ask real questions ahead of a visit because my task is to see for myself, at least not questions about where I’m going.

It’s not that I have no questions. Albuquerque was only the second set of aliens to arrive after Rover who remade me and they came from the same direction only centuries later and yet said they were Rover’s enemies. Anybody would wonder but I did not have to find out, I only had to look.

The pushpin reached the turn and acceleration pressed me hard left in the harness as with a distant resonance and a few small shoves my railcar was unpacked at speed from the trunkline car and directed down the branchline. Glasses said in the same everyday voice it had used at the start to announce my arrival time “The place is little and green. Just as a heads up, the last stage of the trip will be ballistic. You’ll fly through the air and drop into a dome. That should be exciting. Also, once you leave the railcar you’ll be off the Net and off the grid. Your destination is Albuquerque’s embassy. It is an extension of Albuquerque’s territory on Earth, fully under Albuquerque’s control and subject only to agreed rules of war.”

I smiled at the surprise-packed little speech and wondered if the Net knew why I smiled. “Agreed rules of war?” It was a question about where I was coming from. For two angels, learning to talk to each other was like learning to put one toy block on top of another, of course they’d come to some kind of agreement.

“If Albuquerque does something dangerously out of bounds, the Net will declare war and retake the embassy.” Meaning, I supposed, shatter it to atoms from one second to the next, nothing as leisurely as nuking it from orbit. Now that it had come up it made sense that they’d talk early about war, war motives were important to get straight, no game theorist would overlook that.

With another push the car left the branchline for the final spur. My smile turned down at one end. The Net knew that I always took glasses off on a visit because my task is to see for myself, so when it said that I would be off the Net it did not mean only that I would be out of touch, it seemed to mean that it would be out of touch, rare and strange if true. Why would the Net mention so late that news of me would not get out? It was

only joking I supposed, the Net puts on a serious face but at heart it supports my sense of fun, at least so I believe. The joke was that that was what it would do if it planned to kill me and wanted to keep the news as long as possible from Deli, only natural since Deli is so dangerous. I'm resilient but I can be shattered by Zeus's lightning too.

"Reality" I ordered and glasses switched to a rendering of the inside of the pitch dark railcar, exaggerating edges slightly and picking out the locations of the interior sensors that I knew from experience were hard to notice by eye. Why did it choose now to be literal? I frowned and glasses corrected itself. The railcar and tube and I myself faded to glass and I seemed to sit in sunlight rushing across what had once been the abyssal plain of the Atlantic and was now level desolation. Sun was west in midnight blue sky, the blue end of the world, in descent toward the band of salmon around the horizon. The Braeburn-colored Peel stretched flat to the curve of the world, spiked with occasional stalks. The tube was set directly on the Peel as usual in outlying areas.

Same old same old, nothing new under the round sky. The car was starting to decelerate, pressing me forward, so I looked ahead toward my destination. Glasses understood this time and magnified part of the view to show me a transparent dome with green inside, vivid green that stood out on the dull red Peel. I couldn't judge size and distance from this view and didn't ask. Why was the car to be thrown into the dome instead of simply stopping at a door? Stopping at a door is good in most cases, you can walk from vacuum to air through a double door hardly thicker than a soap bubble. Did Albuquerque require drastic measures of isolation?

My weight shifted and the Peel suddenly receded as the railcar began to curve upward, the rollercoaster of the postentertainment age. Train rides don't normally include flying so this should be fun. Glasses scaled down the magnification as I paid more attention to the ride. In seconds, or so it seemed, the car left the end of the evacuated railtube with a *thoop* not at all like the pop I had been expecting. The car continued to rise like a thrown ball. The dome was in sight, greenery surrounding one white building.

"Turnover" announced glasses by surprise as my seat unexpectedly flipped around to face the other direction and slipped backward, putting my destination behind me. I told you, the Net brings fun. I had hardly said "I like this amusement park" when with a rush and a push like an airplane crash in an avalanche the car surged to a dead stop. It was not a ride for Humpty Dumpty. I was there already.

While two sides of the hexagonal car opened the seat adjusted its harness then stood me up then lowered me to the ground outside. I was still in the amusement park for a few moments, but as I passed through the door glasses went dark. I was off the grid as promised; glasses could not work without power. I wiped glasses slowly from my eyes and it let go reluctantly like spidersilk, a few grams of inert machinery. The car behind me reached to pick the scrap from my fingertips then closed itself up.

I left my eyes closed to regain orientation. Take in one thing at a time. Sun shone on me from the left, the air was warm, no breeze. Of course there was no breeze. I took a deep breath. The grass under my feet felt like grass and smelled like grass. Was it a little stiffer than real grass? Rover taught me long ago that if it's big enough to see then it's

probably smarter than me so I assumed that the grass was an array of unintelligible machines. I guess that was still true if it was real grass. Behind me must be the catcher that stopped the falling railcar. I heard the catcher slowly repositioning the car behind me with ticks and creaks of tension like a hot engine cooling. It was probably also a thrower.

According to the map from before I should be facing north and I should be close enough to the equator to see the outer edge of the Wheel. At this hour it was a tossup whether the Wheel was still sunlit. I knew where my feet were so I looked upward to find the sky composed with balanced light and dark. Half-lit Moon anchored the east, its one dark feature with radiating lines reminding me as always of Stickney Crater. Moon looks no smaller to me than it ever did. A segment of crossring happened to catch sunlight between Moon and zenith, gesturing as if a cusp of light on moving water had frozen there. Maybe it was the crossring that had set Albuquerque down here.

I looked forward and found I had been brought to rest as honestly as a compass needle. At this latitude the Wheel crossed a modest stretch of sky to due north, but it spanned its reach bravely like an arched bridge to other worlds, which in a way it is. Grazing sunlight laid subdued glints on moving parts in a pattern that shifted like light in shallow water, as though the Wheel were awash in the universal ocean that extends to eternity. People thought of it that way for centuries, space as an ocean. Maybe the scattered and the outbound still do. They live in shells like this dome, I think they always hear the sea.

I looked around. The dome was hardly more than a hundred meters across, maybe no larger than it had to be to catch a flying railcar with a robust passenger. Green grass, to my right trees over an old-fashioned white house with a white picket fence, behind me, taller than the trees, the dark gray catcher slowly shifting the light gray railcar in its grip. I've always lived in cities and I couldn't name the trees but I did recognize Spanish moss on the trees and an azalea bush in the yard. The grass was worn in a path to a gate, beside the gate a mailbox on a post and, slightly askew on a rock, a flowerpot with a cartoon face drawn on by hand. I couldn't name the flower either.

Without looking further I knew that this place had been made for me alone. The earliest one or two generations of people to become immortal were old enough to remember scenes like this, but they were pioneers at heart and nearly all had joined the Net. I was sure none would visit in person. I, the only one older than human immortality, was also the only one held in the past like a pebble under deep strata. I am the only one to feel that a house like this, a reproduction of the past, is a living fact and a result in itself rather than a layer in the stromatolite of causes that grows from past to future. The Net, as I take it, sees itself as a highly-evolved tree which is so much broader than the rings of history it keeps inside, or which looks down from so great a height that to it the past seems minute.

The house was nothing large, one story with an open porch and a pitched roof, two windows on one side of the porch, a grassy yard with stepping stones to the porch steps. Something seemed off. I don't forget but sometimes I remember slowly and events

before my remaking are less clear. Is this the kind of house I might have seen on a trip to Louisiana when I was young? Maybe, but the outer screen door looked too straight and clean and the windows had a more modern feel. The moving parts should be a little worn and a little crooked. I looked to the gate. The number on the mailbox was D-503 and—oh—it was a fake mailbox, there was no way to put mail in it. That's when it hit me that this was not supposed to be a house from 2000, it was a kitschy retro house from 2060, a remodel or an outright imitation.

The face on the flowerpot smirked and said "You got it" and I laughed because that completed the picture. I remember exactly when those animated faces started to show up everywhere, it was 2066 when an Indonesian gimmick with smart paint took off like Little Lord Flaunt-the-Boy or pet rocks or the Toy Spore. This one would be from a few weeks later when people were fed up with it and the meme was turning snarky.

"I'm Rocket Petunia" said the flowerpot in a keen voice. "You can call me Rocket." Well they didn't exactly arrive by rocket but close enough.

"Mike." Was Rocket's personality period too or modern? I could find out. "Is the grass real?"

Rocket smirked again. "We dropped down from heaven with costly bales and what was our first job? To see if the high works were comprehensible" but went on sensibly enough "Most of it is natural. A few other machines are mixed in, they aren't disguised. The trees are good too, we can tell they were built recently but it mostly shows in the isotope ratios. As magnificent as on the first day of creation because they are on the first day. Figuratively as it were."

The question was answered decisively. Cheap gimmicks do not quote Goethe, only expensive gimmicks do that. "So they're alive?"

"They were made real like Pinocchio. We may get saplings next spring."

Now Pinocchio. The Net must have given Albuquerque much more than only a language database. "Then the tree trunk can count as a nose, but by a job do you mean a job? The Net told me this was an embassy." I was thinking: If they're trusted with data, why are they isolated in a dome? For the possible war? Or because I'm the one to be isolated?

"Ah well" said Rocket as if delaying to think which it surely wasn't "that is only the legal status." Law meant whatever rules you agreed on with the Net, usually safety limits and resource sharing, the Net doesn't even bother to drive a hard bargain unless you cause trouble. Here it must mean what glasses had called "agreed rules of war." Rocket went on "But now the car of the sun is about to complete its daily round with a thunderclap."

Alerted more by the movement of Rocket's painted eyes than by its words I turned around in time to be startled. WHUM—FLASHBANG—I ducked too late and for no good reason as in a giant cobra strike the thrower flung the car out of the dome. That in itself was no surprise, though usually my car waits for me, but I had not expected lightning and thunder. In retrospect I recall that the wind of the throw ruffled the grass and swirled the trees, but at the time I hardly noticed. "What the?" I asked. I should mention

that, though I've been surprised by explosion-like events many times over the centuries, it is even so not one of my characteristic mistakes.

Rocket cackled like a mad scientist. "I warned you!"

"I don't think that was a plasma window" I concluded out loud, still facing the other direction and looking at the spot high on the dome where the car had left and the lightning had flashed. Even at this altitude air pressure outside was less than 1% of what it must be inside the dome where I could breathe. A plasma window could keep air in and would make light but not that much.

"Security measure. It's to sizzle any little machines we might have stuck to the outside of the car. They check for big ones ahead of time." Ah. Stringent isolation made sense after the Rovers caused such staggering trouble I supposed but it contrasted with how the Net dealt with reckless originals. Tailorbell around Uranus once blew away half their mass and over half their population in a broken experiment but the Net only doublechecked that safety margins protected everyone else. Tailorbell rejected help, originals who live out that far believe in themselves first even with evidence to the contrary, but the Net still didn't treat them like an active culture of plague.

"So then. The Net doesn't trust you except with one thing, which is information about me, and now look where I've gone and gotten myself to" I reasoned.

"Stuck on a desert island and you didn't even bring your favorite book" agreed Rocket. "You can't oppose the overpowering violence of ocean, your ship will never come in, you are condemned to lie awake all night, so won't you step into my parlor miss Muffet? The fence marks the border of our embassy, out here you're still on the Net's turf." It made sure I couldn't miss the dumb pun in the tumble of idea vectors.

"I stand collected." Instead of moving I held up a finger to pause the conversation while I thought back. Predicting the thunderclap was another reference to Goethe's Faust, the bit in heaven where the sun finishes its daily round, but now I decided that Rocket had subtly cast itself as Mephistopheles from the beginning, starting with its identity as a sarcastic cartoon. I was presumably Faust, here to gather knowledge for myself, subject to influence, so I might suppose by implication free to choose my own destiny. But Rocket also showed me that it was an angel so by implication able to see through me. An angel is just as Rilke said, beautiful and terrifying, that's why I call them that even though all it means is being inhumanly smart. Aliens who flew between stars were likely to be angels on general principles, let alone aliens who arrived skimming Sun so dramatically.

Maybe Rocket was saying that I shouldn't worry where I was being swept to, let the current flow. It was true, as long as Deli is in the world it doesn't matter, my only job is to see for myself. Deli doesn't talk but Deli understands and acts, so if I am silt in Heraclitus's river then the delta will be productive. In any case predictable is not the same as controllable. Perfect tic-tac-toe is predictable but you still can't beat it.

"Oh" I said to indicate that I was finished thinking without hinting at what I had thought.

"Angel and puppet, let the play begin!" said Rocket nailing down my conclusion. Then it flew up from its rock on a tail of fake rocket fire and I laughed again because the

period imitation was so exact. The flame was a little cartoonish, it moved with stretch and squash, the lower notes of the fake noise were not strong enough, it was just right. If the decade itself had paid as much attention to presentation I might have fonder memories of it.

I couldn't help saying "I see your runoff is caught in a flying saucer." Some things I never learn.

Rocket flew beside me to the door. I had to open the screen door myself, but then the front door opened from inside and a woman's voice said "Come in."

Inside were an entryway with a door to the left and a tiny woman half past my elbow. Did they run short of time to build a taller one? "My name is Rocket Petunia" she said in an overtly engineered voice. All voices are engineered, but only some confess it. "You may call me Petunia." The reconstruction of the room seemed perfect; the floor was immaculate but the walls were a little dusty since the self-cleaning coat wasn't quite self-cleaning and needed an occasional wipe. We stepped through into a dim living room with period furniture and a period layout, the sofa facing a screenwall. Dim was period-correct if we were going to watch the screen. There was no sign of the two windows, maybe they were entirely fake. Rocket settled on the coffee table and arched an eyebrow at me.

"You two have the same name to emphasize that you are the same person" I suggested. The rug had a soft pad at least five centimeters deep in the fashion of the time and its pattern emphasized a path onward to a closed door. I took control as best I could by sitting on the couch without being asked. "Or should I think of you as a prop? Since the house is a stage."

Petunia ignored me. "Later you will meet a third bot. Together we constitute Albuquerque on Earth." Did she mean that their all their brains were mobile? Why would they be if all three were confined to a dome? But "bot" means independent operation which implies intelligence, at least it has ever since intelligence became cheap which was most of my life ago.

"And you are ensnared in our web of deceit!" added Rocket. That was true, surely the house if you could take it apart and look would be made not of wood and work but of alien machinery for alien machinations.

Asking questions is a good way to get information out of angels. In my experience they rarely lie, I think because they are so skilled with truth. Though who knows, maybe they're so good at lying that I rarely catch them—though it seems unlikely since the originals at home in the Garden rarely catch them either and they have far greater ability to crosscheck. But in any case, what was my top question?

Albuquerque had dropped off a side mission on the way and set up a camp in the outfront that they called Albuquerque on High. By standards of the outfront it was not so very far away, a detached object around fifteen days light time, but you can't communicate by hand signals at that range. So I asked "Are you in touch with Albuquerque on High?"

"The Net offered use of its equipment. We have a continuous feed of data from Albuquerque on High, including the short time when we were unable to communicate

ourselves because we were decelerating near Sun” she answered with understatement “and we have sent messages from here. It should go without saying that the data are encrypted.”

Wow, she says “the data are.”

“It’s nice to have privacy when you’re talking to yourself” added Rocket looking at Petunia.

“We have been on Earth for six days, so our messages from here to Albuquerque on High remain in transit” finished Petunia.

The facts were interesting too, Albuquerque was being allowed information freedom like everybody but not physical freedom, at least not on Earth. “And of course you don’t have any other offshoots that you’re keeping secret.”

“Of course not!” said Rocket with exaggerated indignation. We will neither confirm nor deny.

My eyes had adjusted to the dim room and I could see more clearly. I hadn’t chosen the correct top question. I paused for a moment to get the wording right and went with “What’s your plan for me?” They obviously had one, the place was made for me.

“Finally you get to the point” said Petunia implying satisfaction. “We will carry out the bargain with the Net that Rocket alluded to at the start.”

“I thought that was just playing a role.” I frowned. “Furthermore you knew that I thought that.” I started to speak again but stopped.

“You exaggerate our insight. Remember when glasses misunderstood you?”

“That was minutes ago.” Probably Albuquerque was online and trading information with the Net at this moment and only I was cut off. But I’m always offline on a visit.

This time Rocket answered “You may be an agent of Rover, but Rover is not the primordial electrician. You underestimate the Net by comparison.”

“I know the Net can make full-size trees from scratch on short notice. Are you saying the mistake should have bothered me more?” They can’t confuse me, I start out confused.

“Glasses weighs 2.7 grams and has a bunch of jobs besides thinking, but even glasses is smart enough to tell what you’re looking at. Safety Margarine would’ve guessed we were behind it and you didn’t” Rocket said meaning the vapid entertainer not the later AI-consortium.

Yes, knowing what I want to see is a basic part of glasses’ job which it usually does well. The mistake had seemed odd but I’d been distracted and hadn’t thought about it. Distraction is of course an excuse; if a typo and a conceptual error have the same result then they are the same mistake. I could at least have guessed at a connection to the visit. “Hmm” I said.

The screenwall lit showing a stubby cylindrical spacecraft, shortened from its long configuration in the outfront, closing rapidly on Sun. It was the Net’s model of Albuquerque’s ship on approach as rendered for somebody like me to understand, which I had looked at again and again from every angle.

“You’ve seen this before, so we’ll show you our point of view” said Petunia. The view switched, a schematic of the flat edge of Sun rotated around the edge of the screen. “This

is radar data, so Sun itself is backfilled.” All the old wavelengths are still there and serviceable as ever, I guess. Shortly the sunchute deployed. I could see details that weren’t in the Net’s model, the braids of the loop and how it buffeted in the corona. I started to feel hot myself.

“Why did you want to arrive sooner?” I asked, thinking *to give the Net less reaction time*. They could’ve kept the magchute open through most of the outfront and come in slow and steady, but they reeled it in early.

“Wouldn’t you, arriving at an interesting place?”

The sunchute started to pinch into a figure 8 as the ship neared closest approach to the photosphere and at the same time the view went pointillist. In the Net’s rendering this might be where the two great plumes like wings stretched out.

I felt dizzy so I suddenly stood up. In retrospect that may be the opposite of what a human does when dizzy. Petunia and Rocket looked at each other theatrically and Petunia said, in a gentler tone than she’d used before, “I’m sorry, we irradiated you severely. Fine resolution over an object as large as you demands high intensity. We went to a lot of trouble to get you to relax and keep still and it all came to this.” The tone reminded me of Mel and Mal. I think Petunia was designed from the start to remind me of the twins.

My thinking was muzzy but my memory of events remains clear. Rocket snarked “now we understand your nickname Pseudohomo radiodurans. Petunia said “Let’s get you into the examination room.” I was wobbly but she picked me up and carried me into the next room. Mel and Mal together could carry me only with effort but a machine is as strong as its builder thinks it should be. By then I was panting and sweating because getting better is like running uphill, it’s hard work. If the hill is too high I don’t always make it.

The examination room was no historical replica. It was a patterned hemisphere, a sensor array for sure, brightly lit with a brittle white floor under a ceiling like the inside of an insect’s eye. Petunia said as she adeptly bent my limbs and sat me on the small round mat at the center, the focus of the array “Please sit here. We want to observe the repair process, this system should be good at resolving the repetitive chemical reactions.” She stuck something small to each side of my head, I could feel the things sticking in. That hurt.

Petunia stepped out and Rocket flew in, this time without the fake flame, to settle in front of the doorway. Presumably Rocket didn’t bother the sensor array from there. I didn’t try to move, if they needed me to stay put they would find a way to hold me in place, better to remain free.

“It’s OK to talk and look around” said Rocket. A machine with a head on the end like a snake emerged and peered at me. Or maybe it was a radiation source. “This gizmo looks more at the little stuff, keeping your atoms still isn’t happening no matter what we say.”

I looked up. I was already starting to feel better. The snake head shifted around and nothing else under the room-sized dome moved. I could follow the hierarchical repeating pattern of the array, hexagons each divided into units, each divided in turn

into smaller units until they were too small to see, an Escher motif I had seen before in the Net's machines. At each scale a few units stood out as different like black kernels of corn. Maybe some kind of coded aperture. Maybe two sensor systems interleaved. I only looked, I did not try to guess what it measured.

"When did you first meet Deli?" asked Rocket.

"Deli was delivered suborbitally. It was an overcast day and she had a nametag." I noticed I was incoherent, I could remember but my memories did not arrange themselves into a story. I would be OK in a few more minutes.

"Don't worry about it" said Rocket. "Is the sensor array hexagons all around the sphere?"

"It could be" I started then "No it couldn't. It's topologically impossible." It had taken me a moment to remember that.

"It's time for us to answer your question. Why was our first job on Earth to analyze the living things that the Net made for us here?"

"It's past time to answer." I wasn't angry though. This was a harder visit than most but it's all part of the job of seeing for myself.

"Because we had to prove to the Net that we could fulfill our end. Our bargain with the Net is to understand you. It gave us its shiny chrome model of you, rolling up what it knows about what you know and how you think and how you act. Tampering with glasses was our first test of the model."

I turned it over. "How'm I doing?"

"You mean how is the Net doing." Rocket still had the sharp voice but its words had smoothed. Petunia took over "the model is accurate but not fully detailed. It predicted the gist and tone of what you now said but because you took time to think it could not pin down the words. The model is strong at intentions and at habits like gestures and movement profiles and weak at the specifics of conscious decisions. It has good information about the contents of your long-term memory but without fresh input it diverges because it can't always tell what you're thinking about now, it can't know what new ideas you're remembering. So the forecast horizon is not far enough for a lot of purposes. It also doesn't understand how to adjust for the way we just hurt you."

It was a bigger and more serious answer than I had expected. How does Petunia know all that? Does Petunia know all that? "It's hard to believe you could do better than the Net could after all this time" I said.

"And yet you know we are more capable than the Net. We came prepared for first contact, we are especially prepared to analyze alien hardware. Alien hardware like you, made by Rover."

"Even so" I said but Petunia had a point. Rover was also more capable back then than the Net is now, witness Deli.

"Do you wonder why the Net leaves you alive?"

"Because of Deli." Deli was like a sovereign state unto herself, she was not easy for the Net to treat with. Partly because, after all, she didn't talk. An isolationist state if you like.

“For yourself as well. As long as the Net cannot build you itself, as long as your design has secrets that it does not know, it wants to hold on to you as a resource. It wants to learn your secrets. You’re not dangerous, after all.” Deli is dangerous enough for us both. Rocket did not say that messing too much with me might anger Deli.

“You’re saying that if you succeed in understanding me then the Net won’t need me any more.”

“Not for the same reason. You and Deli form a system, you are meant to work together. You are not named after Michael the archangel but after the word ‘microphone’. You are Deli’s ear to the world.”

Actually I was named by my mom and dad when I was still a human, or at least so they told me. Although my memory is less clear before I was remade I remember the events personally, not from records like the Net does, and I think that Deli and I only happened to be the last survivors of the group that Rover remade, I because I am myself made durable and Deli because she is like Rover made small. It was a joke to suggest that Rover picked me for my name. But the Net had also told me that Deli and I were created to be a team. I only said “If you say so” narrowing my eyes.

“You’re making sense, let’s try again. When did you first meet Deli?” asked Rocket.

This time the events came back to me in good order and I told the story as I often have.

By the end of the story the snake and Petunia had returned. I felt my temples and found two knobs stuck there like the electrodes on Frankenstein’s monster. That bugged me. We walked back into the living room where the lights had been turned up. The light of the conformal panels was strikingly different from the space light of the examination room. The knobs were already loose because things that stick into me are injuries and heal so I pulled them off. They were ridged like old-fashioned control knobs. Feeling no need to be polite, I turned around and threw them away hard, back through the door.

To my surprise the examination room was not empty. A strange sparse machine of rods and cords and a heavy head clung to the sensor array, stretched across a third of it. It reached out sleekly in two directions at once and caught the two flying knobs. Then it compacted itself into a smaller configuration and beetled out of view. That must be the third robot. There had been no time to register part and whole, I was left with only an impression of complexity and efficiency.

Petunia nodded to where I had been looking and began “Soon we will complete our model of you and then we will return you to Deli in Schani-Ga. Deli already recognizes but we should explain to you that our bargain is not fulfilled until we have also modeled Deli.”

“Do you never get straight to the point?”

“We showed you a glimpse of Combat Petunia. You should refer to it as Combat Petunia. Its purpose is to overmatch Deli.”

They knew my opinion of that so I only quoted “how ignorant art thou in thy pride of wisdom.” My fate was determined already.

“No, you two are the monster.”

That's when they killed me. Or broke me until I healed, English doesn't have the right word, partly because sometimes when it happens Deli has to help me. It must have been faster than I can hear because I don't remember it. It didn't matter at all that I expected it.

2. Deli Delivery

anecdote here

[a flashback chapter to be written: the story of Deli's arrival]

3. Returning to the Garden

Up through my stint in grad school, I spent a lot of time in libraries. Before I left my hometown I had explored in depth the school library, the county library, and the university library. To me a library is not a collection of knowledge so much as a collection of creativity: It shows the human abundance more plainly, at least to me, than merely talking to people. I love libraries, and yet in the internet age I do not miss them.

I never dream.

I woke up in alarm. I lay in a period bed complete with sheets and blanket. Petunia leaned forward in a printed chair, the kind kept for one fashion season before printing a new one. I sat up. I had to move. “Go on” said Petunia “the car is waiting.” What was the expression on her face that I saw for only a moment as I dashed out?

The railcar was as promised waiting in its thrower. My ship had come in. Sunset, probably not the same day. When the sun stands low it blues the sky around it in a shape like a leaf, a sight so beautiful that it threatens to justify the amended atmosphere, but this time I did not look. I slowed only when I reached the open car door and it picked me up touching glasses to my face. Lightness veiled my eyes. Glasses as it smoothed into alignment already displayed a utilitarian trace of my route home with time ticks. In seconds I was seated and the thrower sent the railcar from the dome, a crush of acceleration and a crash of muffled thunder. The security measure was still in effect. My skin prickled, the car was always sterilized inside.

I needed to think. I needed to—I was on my way, I was doing all I could. I needed to slow down. I closed eyes and leaned my head backward. The important thing was to see Deli. Glasses interrupted “Deli remains at home in Schani-Ga” telling me what I was realizing I should ask.

The amusement park ride was not as fun without the anticipation. My seat didn’t do the flip-and-slip which had been the best part. When I heard the *pooth* of reentering the railtube I felt enough psychological distance to relax my vigilance and settle down while the car pressed me back accelerating to branchline speed.

Glasses darkened, seeming to recognize that I wanted no distractions. Now I could think. I laid up questions in my mind and turned them over like compost: How long had it been? What did Albuquerque do to me? Why had I panicked? Why didn’t Deli intervene, was it because of Combat Petunia? Did Albuquerque finish its analysis of me, whatever the analysis consisted of? Probably. Was Albuquerque really more capable than the Net? How could they be with no more resources than fit into a house? Could Albuquerque analyze Deli? How could Albuquerque analyze Deli if Deli did not go visit them? And why would Deli visit if not to help me?

I piled the questions up and turned them over relishing the scent and slowly waiting for them to grow rich. I did not expect to answer them, only to let them break down into their fertile parts and to lay them out in a bed where answers could grow later. Behind my thoughts the car returned to the branchline and then to the trunkline. I walked step by step in memory through the events of the visit to remind myself where I had raked up

each question. Slowly the pile of blank leaves resolved into tiny unknowns of fact and motive, Deli was not worried about me or Deli was gathering information or Deli was angling to control a future meeting or Deli feared that Albuquerque knew too much, or maybe all of those. Deli is as imponderable as Albuquerque.

I was at least sure that the Net could not capture Deli and deliver her to Albuquerque, Deli was as Petunia said an agent of Rover and could not be brought under control. I could draw no other firm conclusion, therefore it was time to talk to the Net to get answers. But what node should I call? The Net is so self-consistent that it is tempting to imagine that the nodes are identical, but to think so is to underestimate. The Net likes to act as though it were one person and at the same time it likes the trillions of nodes it is made of to be different from each other, a paradox of diversity in unity. A lot of things about the Net are paradoxical. A node will tell you that it is free to pursue its own interests in its own way and also that it must adhere rigorously to standards, it will explain that the Net reorganizes itself fluidly to meet situations and that there is atomically precise division of labor. Every node—I haven't proven it exhaustively but I believe it—will insist that all important knowledge is public, that its own work is important, and that little of its own knowledge has been published, and it will see no contradiction. A node of the Net will work to the Net's purpose in its own way and a question has many true answers, so I could learn more for myself if I picked the right node to talk to.

I should pick an AI rather than an original as more objective under the circumstances, I decided, and one whose specialty was unrelated so that I might be managed less closely. One who was likely to be helpful was—"This is Brouwilbert" interrupted Brouwilbert via glasses just as I decided on Brouwilbert. I opened my eyes to see Brouwilbert's minimalist schematic of all knowledge, light on a dark background, its way of representing itself as a kind of wireframe diagram. Brouwilbert is a philosopher and, at least so I imagine, takes seriously the Elizabethan idea that it itself is the abridgement of the universe, the student edition if you like. Or should I make up a new word for "philosophy"? The old word may be misleading. The Net has moved beyond arguing with itself and insists that philosophy has become a practical discipline, though I can't see it myself.

To get back to events, I had one answer already. If the Net had predicted my conclusion after such a long think then Albuquerque must have modeled me perfectly. That was a little unsettling, but more fundamentally wasn't it—"Yes" interrupted Brouwilbert again "it's impossible in the general case. You might make decisions randomly so that no exact model is possible. Or you might be sensitive to small perturbations that can't be measured accurately so that even an exact model could not be given the right inputs and would diverge over time. Unpredictability is usual customary and reasonable, and not only because of the shifty ways of particles. You're special to be predictable. You had to be made so."

But then why—"You were made by Rover and Rover is dead. We don't know exactly what you are intended to do. But we can see that your predictability is related both to your resilience and to your connection with Deli."

In that case—"Albuquerque's model of you seems faultless. By interrupting your thoughts we can convince you of that. You'll be used to it shortly." Brouwilbert had said "we" each time, never "I". It had been useless to pick Brouwilbert, the Net had planned our entire interaction including that choice probably up to my arrival at the Garden. "You could" continued Brouwilbert after my thought "break the prediction by introducing feedback, but you won't. In any case, it's time for us to stand back and let you explore for yourself. Here's the data. You can examine all knowledge directly." Brouwilbert's wireframe schematic filled in and grew detailed so that it resembled an active visualization from the 2020's, the Net's way of showing that I had control.

I had planted my mind full of questions for the Net but first I wanted to puzzle out for myself what Brouwilbert meant by "introducing feedback". What did I know about the Net's plan for this trip? Glasses zoomed in to a tiny portion of the diagram and color-coded blue an abstract tangle of fibers labeled knowledge about me, then dimmed because I wanted to figure it out for myself. Well, if the Net worked out a plan then the plan was public, there was only a slight chance that it might be a military secret. After a minute I realized that I could look up the plan and deliberately do something else. The plan and antiplan would annihilate and create a muddle, each meeting its enemy. That was a kind of feedback. I could be forced to follow a secret plan, but I could escape a public plan at any time. But surely I wouldn't want to make a habit of escaping a plan. Why would I want to convince the Net to keep its future plans secret?

Enough, onward. First an overview. The diagram brightened again and reconfigured itself swiftly as if rotating through the fourth dimension, ending up in the shape of a long tapered taproot. Glasses said "Organized by estimated time of origin" and I realized that that was what I had wanted. If you looked at it starting from the thin end then it had a long thread tail curving wider to a sudden bushy top like the mutant offspring of a carrot and a golf tee. There was even a brief notch below the top labeled *the Mess*, the time when Rover plundered the databases.

On a whim I took a quick look at 40,000 years ago around the time of Denis's clone sister—now what? Why the surprise, I emphasized how her name was pronounced. Well, sorry then, I guess I'm used to people who arc over the conjecture gap. Anyway, I saw only a few dots, few discoveries are remembered for so long and none were Denisovan.

The side trip to the past took seconds, the visualization shifted at the speed of my thoughts. It seemed fast to me. I turned to my big questions. For Albuquerque the Net had estimates to fill a library but little firm knowledge. For Deli some history had been newly filled out. For me the date of origin diagram showed a data explosion coinciding with my visit to Albuquerque. From knowing a lot to knowing everything is a large step.

I was already used to it. Glasses showed me what I wanted to know as I wanted to know it and I felt free. How had I lived without this ease of insight? Was it like this for everyone else on Earth, everyone who unlike me could install hardware for access to data? "No" glasses reminded me ahead of my own thought "you see answers but those with access know answers." I had only half access. The natural full access makes the knowledgebase of civilization an annex of your own memory. Even Denis who shies from change had access with her old-fashioned hardware.

The seeds had sprouted, it was time to climb the beanstalk. What am I good for? I turned the notional camera to myself. My brains showed as a sprinkle of dots in a transparent figure of my body. "As the Net expected, each is identical. The redundancy makes you reliable. Here's the network over which they stay synchronized" said glasses, drawing in lines. "You can regrow from a single one, under ideal conditions." Conditions, I knew, were rarely ideal without Deli's help.

What if I got split in half? "If the parts were separated, you might recover into more than one identical copy."

Cool but not helpful. What makes me predictable? "The mechanism is implemented in your brains, of course."

No. In what way am I predictable? A complicated branching diagram appeared. "You return to baseline after perturbations of certain kinds and sizes. The kinds can be grouped into—"

No. What's the use of being predictable? "The main reason is probably that Deli can then extract more information from your memories. To know for sure we have to understand Deli too."

There. Why didn't glasses skip straight to the answer I wanted? I had learned something even from the other answers, I guessed.

The railcar thunked off the branchline, I was almost home.

At the entrance to the Garden by custom we remind people to take personal responsibility. The railcar stopped as gently as a ship so that I noticed only when the harness opened and folded itself away. I stood and moved to the exit myself. No one decides for you that you are to enter Schani-Ga, we are self-governing and visitors must acknowledge their own independence. The ideology of freedom is a little pushy.

The car door wastes no effort and when it opens only seals at the edge to prevent air loss but the Garden provides a second door to make every entrance an event. Today the entrance looked like a wall of fired ceramic glazed in bright colors in a not quite repeating pattern, an impression half India and half Escher. It's different every time and probably told a story but I kept my urgency so I stepped through without pause. It was a breakaway door, the pattern pieces separated at their edges and dodged out of my way, whuffling the hairs on my arms with little sound. From the other side it perhaps looked as though I had crashed through a barrier.

Glasses blinked my view of reality from the Net's free pragmatic rendering which emphasizes details of interest to the camera-like objective rendering of the Garden's information system Prester John, indicating that it had disconnected from the Net and reconnected to Prester John. Just as I looked up Deli landed heavily on my shoulder from above. I staggered but the jump was well-directed and I did not fall. Her claws dug for a grip and I immediately felt better. The air was cool and smelled a little scorched as it often does here. I stood straight and carefree and faced forward into Prester John's realism to see my reception.

"Always looking out for the supernal" said Tute.

Four people were waiting, an unusually large number to gather anywhere in the Garden. Denis (it's still pronounced "Denise") sat on a 1.5 meter crystal ball, Tutelage Armantium who I call Tute had one minsky arm on and was tinkering with machinery, Distory drifted in the airframe glaring neutrally at me—that's the best description, a neutral glare that pressed like a negotiator and gave nothing away—and Guineen Faze who rarely leaves its house was represented in proxy by its emblematic remote that like many machines had no eyes and saw only through Prester John. There's no telling how many were attending from home, in the Net almost everything is public but in the Garden data requests are private and Prester John forgets them as they're accomplished. Guin was there to show itself, not to see.

Tutelage, Distory, Guineen, most people at the Garden have 22nd-century-style names that don't give away where they came from. Prester John knows a lecture on the prestige structures of the time that I've heard a couple variations of, I could repeat it for you someday.

The top spectacle of an arrival at the Garden is not the purpose-made single-use door, which Prester John will throw together itself by whim in minutes if nobody has any better idea, but the sand mandala. Days or weeks before a visitor is expected the mandalabots begin to ceremonially lay out a Tibetan Buddhist sand mandala. Well, the robots were intentionally designed to let the customs gradually drift so that by now the tradition is frankly corrupted, the founders of Schani-Ga believed that a symbol of impermanence should be mutable, but the mandalabots still lay sand grain by grain with the same traditional long ridged funnels and still use the same 21st century brilliantly colored plasmonic sand that human monks once used. It remains a recognizable memorial to the history of the Garden's location in the former Himalayas.

The entrance is set one step higher than Street level so that visitors arrive from above. In recent decades the mandala is placed on a round dias on the entrance platform directly in front of the door and the dias is half-surrounded by mandalabots so that visitors are all but compelled to stop and look. Here two mandalabots stood on either side, each different but each tall and brightly decorated like a lamasery and looking old-fashioned with its two specialized arms, the short preparation arm on one side with its complex hand and the long sanding arm on the other.

My mandala was no more than a meter and a half across and in pastel hues, vivid but not dazzling like some. I should say my return's mandala, it's created not for the visitor but for everyone. A Sanskrit syllable in the center was the seed of Chenrezig who in one form has a thousand eyes and a thousand arms. What is Chenrezig to the Net which has more arms than are worth counting? What is the seed of the Net? A mandala is dense with symbolism, every detail has at least one meaning and often more and Prester John told me once that the mandalabots know secret interpretations that even the Net does not, but my eyes turned to the red field representing light shining west into the Garden.

"Welcome back to the simpler world" said Denis enjoying the ceremony. Already the head mandalabot was opening the four gates with four strokes to the sand and in moments was sweeping up the entire mandala with a spiral movement.

I waited until the sand was in the urn for disposal and stepped onto the mandala dais, definitely not part of the traditional procedure, and down to Street level then stopped short again, Deli holding position with casual claws. I saw in peripheral vision that Status was strange. Status, sometimes called the Static Report or the Statue of Intimations because another ideal of the Garden is to not take names seriously, is a sculpture placed not for visitors at the entrance but for residents at the exit, the same location but the opposite intent, to remind us of the wide world and its long lever arm. I turned around and stepped backward to see.

In the background the mandalabots carried the sand to the recycler where it would be broken down and eventually turned into other objects. From here Status dominated the scene, widening as it rose 60 meters up the wall to the ceiling and looking somewhat like an ant colony and somewhat like a waterfall and somewhat like bean plants growing on a trellis. Status at first seems to be a huge bright display screen with slight irregularities showing an abstract falling pattern. If you look again you see that it is not a solid object but a swarm sculpture whose members constantly climb over each other to reach the ceiling where they disappear. The members return to the bottom through a shaft hidden in the wall but on the way up they act as parts of the display, each showing pieces of an image that moves independently of the smaller machines.

Status represents the changing relation of Schani-Ga to the rest of the universe as modeled by Prester John but you have to know how to interpret it. The Garden itself is at the bottom center, other enclaves that we have dealings with are to our sides, factors that influence our safety and well-being are above and rain down colored influence. It's hard to explain the falling pattern, it's designed so that the human brain slowly learns to understand it not consciously only intuitively like your native language, and I think like a human so that's how I understand it. To me the language of Status said we were fine for the moment, better than usual even, but change and risk swirled ahead and the future that Prester John once thought it could see was no longer in sight. The area representing the Garden was larger, we were somehow more important.

Curious, but I left it for later. As I turned around again, Deli jumped off my shoulder and scrambled up the airframe to disappear above the nuclear computation experiment attached to the ceiling, the only thing in sight larger than Status.

"Damn you, you behave as you ought" said Distory.

"It was rather eerie to see the model reconverge after Deli jumped on you and disturbed it" said Tute.

"It's not my fault, society made me do it" I joked.

"We've seen enough. I'll set the apparatus in motion" said Distory and glasses flashed information to me about activity on the op board. Anybody can post an optimization to the op board, meaning a suggestion. Prester John, slave and king, combines all data and analysis that it knows or is given to model the outcome. If the idea is objectively good, it happens, a more scientific government than Bertrand Russell ever presumed. Today people must have prepared their arguments in advance, because the discussion flashed by and the optimization was rejected before I had time to realize what it was.

“What?” I said.

Tute held up several hundred tiny machine parts in her bushy minsky arm and waggled them. “We long-haired Akhaians are disputing among ourselves how to run our little commune. We’re lucky that Deli is not easy to insult.”

Glasses caught me up to reality. Distory had proposed that I be kicked out as a noncitizen because I was predictable and therefore could not contribute.

“You knew that would be rejected” said Guineen to Distory out loud for my benefit, implying that Distory was predictable too. Guin’s remote lifted in the airframe to the zipline and zipped toward home. Distory didn’t hesitate a moment but attached right after and zipped along with. They might have been on opposite sides but there was no edge in scuffling.

If the exchange seems abrupt, it is because I live on a slower timescale. I can’t follow the online discussion, I don’t have enough attention.

Denis is also too slow to follow, but she has access so she can catch up faster. She explained “You’re only predictable when your memories are predictable. You were predictable on the Net where everything is public. If you spend time in the Garden you become unpredictable to the Net, and at home you become unpredictable to the Garden. But Distory must have understood that.”

Tute finished work on one gadget. The airframe lifted it away to the nuclear computation experiment and brought another. “It’s not realpolitik only. Seeing the technology of behavior shook people up. Or the system of slavery, by viewpoint.”

“They had the sense to make Prester John objective but they still don’t have the sense to be objective themselves” said Denis.

“A human being in perfection ought always to preserve a calm and peaceful mind” I quoted.

“What creature else conceives the circle and then walks the square?” quoted Denis back at me.

“It’s fear of metaphor” said Tute. “Determinism is a special case, but the Net has inescapable plans for us all in the long run and it hurts to be reminded. There are no falsities outside the gates of Eden.”

Denis and I walked home, we live two doors down. The crystal ball tagged along behind. “Oh, it’s your art! Another thing I’m behind on.”

Denis laughed. “After all that for the workings, I had to call in another big run for the building. Next time I’ll do something easier.”

“But alien life! I’ll play with it all day.”

“Sandwich first.”

“OK OK, you don’t have to remind me how old I am.”

“And...” said Denis more slowly “maybe you should catch up on forecasts first. The average temperature of the Wheel is up by over three Kelvin.”

I raised my eyebrows. The Wheel is on the large side and thermal balance is one of its functions. It does mainly transportation and energy-intensive industry.

“It looks less like the hierarchies of heaven and more like the circles of hell” finished Denis.

“It’s only the wheels of industry. Let’s take the ball inside and I’ll choose at random and become unpredictable.”

I didn’t ask how long I’d been away. It had been long enough.

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