



# BLACK GARDENS

*and OTHER STORIES*  
**DANIEL G. FITCH**



*Black Gardens and Other Stories*  
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WHAT IS THOUGHT?!?

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# **Black Gardens**

**EDITORS' NOTE:** Our culture may seem different to you, on the surface. Yet we are similar, despite your way of life being vastly strange to us in some ways. It is very hard to explain; this story we need to tell seems too fanciful as a straight history. It is not a novel. It is a document of how our cultures met. You will likely choose not to believe it, in any case. So we publish it here, under a sort of pseudonym; through a gateway. This is our story, but it is also yours. You will see.

Do not judge our actions — or those of your people — too harshly. We attempt only to tell the history from our perspective, and it may yet be wrong. After all, we are all just flawed human beings.

We have hope. We hope you are ready to hear us. Enough will make it through the redactions. Enough will make it through your in-built biases. Try to see us as we try to see you. Make an attempt to see us, as we make an attempt to see you. That is all we can ask.

This book is a plea for understanding.



PART 1

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# PARASITISM

I was one day alone in the fields, and observed that the sun shone clear, but that a mist eclipsed the brightness of its shining. As I reflected upon the singularity of the event, my mind was struck into a silence, the most solemn I ever remember to have witnessed, for it seemed as if all my faculties were laid low, and unusually brought into deep silence. I said to myself, "What can all this mean? I do not recollect ever before to have been sensible of such feelings." And I heard a voice from heaven say, "This that thou seest, which dims the brightness of the sun, is a sign of the present and coming times. . ."

- Joseph Hoag, 1861



CHAPTER 1

---

INTENTION

**S**PARSE STARLIGHT PEEKS IN through the glazed, membranous windows in the leafy green garden walls, driven back by the sun that pierces the black ellipses of sky with its pleasant orange warmth. Esther promised Beri they wouldn't get in any trouble, but the excitement of bending the rules is part of the fun; he's just too young to understand, she thinks.

Of course it's grand thrills, telling her brother they're searching through the deserted branches for secret treasure, at least until divine punishment strikes. They romp through the deserted corridors and dry algae vats, imagining themselves as conquerors, come to steal the unknown secrets and colossal caches of magic hidden in the maze. These branches will come back into use after the cleansing period, but for now, the untrimmed (and forbidden) feeling of visiting their fallow, quiet stretches without Mother makes the day seem so exciting.

The flowing green shapes of leaves on the walls oscillate slowly in the low gravity as she passes by, like a watercolor painting that somehow never dries, rolling around imperceptibly. But the pleased smile on Esther's face slips when blackness drops swiftly over the stars in the windows. The leaves on the walls and the algae stains on her hands go the black of dried blood in an instant. Her face reflected back by the vats looks demonic, lit by the red tendrils of the emergency glow-lights, and she whimpers an instinctive prayer before reassuring herself that this isn't the hellfire the reverend is always going on about. This is scarier than any of that.

The emergency shutdown means a threat is coming. The leaves only drop to darklight when there's something unexpected on an approach vector. And there's no shipment from Earth arriving for at least twenty rotations. So the darkness brings a stench of fear with it; a sense of unknown horrors. Vanoi, pirates, even a simple comet or rock on an irregular path. All could spell disaster for the Garden.

The last time darklight fell, Esther watched her father and uncles armor themselves and go out into the void to die. They sacrificed themselves in flashes of horrible bright blue winking fire, using packs of precious fuel to protect the colony from vanoi. At least this time,

she thinks, I don't care about anyone who might be chosen. Deborah turned inward instead of standing up to Mother. Because she was old enough, she chose to be a Returner.

Deborah was the last to just give up on them, and that left her and Beri with Mother.

And Mother can rot, Esther thinks. Not that she would ever volunteer like that to save anyone. Wait — in the moment, shaken by the darklight dropping, she has forgotten about her younger brother on the other side of the maze-like vat grid, probably playing while he pretends to help her search for treasure.

Her face quickly turns from an angry, distracted mask into a wall of red-flagged fear. “Beri! *Beeear!*” Esther hauls herself down the hallway as echoes bounce.

*Of course* this had to happen during a long mining shift with most of the adults out swarming over a recently-lassoed methane-rich comet. *Of course* she had to be out exploring a fallow algae branch she wasn't really supposed to be in. Now she has to go through the emergency procedures by herself, trying to dredge up the steps that had been drilled so many times.

“Pay attention,” she could practically hear the snap of her mother's venom that flew every time she had failed to ‘apply herself’ during the darklight drills. But she could never focus — she couldn't separate those awful last moments of her dad and his brothers under the red light, going out in the blackness, from the seething calm and pointless repetition of the constant drills.

“Come onnnn,” she says to herself. Muttering her way down the tube, she strains to remember the steps. The steps, and how they go together. “First, the air. Then the skin,” she repeats under her breath as she shakes her head. Why did she have the bad luck to get both of them into this?

They need to get masks on in case of a breach. She should be way faster at this. Esther whips hers around from the back of her neck, latching its stem in place. “Now, where is that little idiot?”

She reaches the central node of the algae plot. She yells “Beri! This is not a game!” Out of breath, she snags two of the bulky suit generator seeds, fist shaped and dense. As she clamps one to the mask's socket and its tiny electrical charge rides over her skin, she loses her grip on the other seed. It clanks against her arm, and caroms back down the tube she came from.

“Rotted hell!” She lets a profanity slip and then instinctively looks over her shoulder for mother. Deftly launching herself after the loose seed, she shakes her head at her silly reaction, at a time when she should be worried for her little brother. “Beri, I love you and everything, but you need to suit up! Where are you?”

A groaning shudder rolls through the connections of the branch, as protective shields lock. Her fingertips feel cold and electric, and she can't help rubbing them as she runs, breathless.

When she finally finds him, he's underneath a cracked screen, making an earnest attempt to clean it off the backside of a comb. “*There* you are! Why didn't you respond when I yelled? We're in trouble!” At least he remembered to put his mask on. She breathes a sigh of relief.

“I’s sorry Ess! I’s helping!” The genuine pouty frown on his face makes her have to stifle a giggle, as she readjusts his mask over his bulging eyes, and plugs in the suitseed. “I did it,” he burbles, pointing to the mask.

“Yes you did, buddy. Don’t be sorry, it’s okay. We’re okay now.” She reassures him with a hug. “But you have to yell back when I scream for you!”

“Why don’t you use mom-speaker?” he asks, confused.

“Augh! I didn’t think of it!” She smacks her forehead. “My silly mistake. Sorry!” Obviously, she should have used the in-leaf amplifiers to alert him. Why didn’t she think of that sooner? It was in the drills. What else is she slow to remember?

Then a horrendous rattle shakes through the algae sheets, followed by an ungodly sound of thick branches and protective leaves suddenly shearing. The floor shifts under them, and the weak pull of gravity tilts at a queasy angle. Beri tumbles into her and starts screeching, and her stomach drops through the floor. One end of the foreign object that caused the darklight alarm slams through the wall into their leaf, and that's when things truly go black.

Zach rubs his forehead in the flickering, dingy light of the basement office he shares with three other grad students. It's so prestigious. Here he thought academia would be somehow... more like a shining ivory tower. But here he is, in a brutalist basement in Philly. Chugging away at something that probably won't even be worth publishing if he can't squeeze anything new out of it. He snorts quietly and rolls his eyes at the terminal. None of the new rulesets are doing anything at all interesting yet.

Zach spins around and sighs loudly, trying to distract Briana from her code.

"Maybe you need some sunlight, dude." She pecks away at a line, chewing on a pen.

"Maybe we all could use some sunlight."

No response. Briana clacks around a bit more, makes a satisfied noise, and hits F5. “There we go.”

Zach rolls over to watch her screen. “B, will you let me rubber duck for a second?”

“Ugh. Man. Something is wrong with my logic here. Help me after I help you?”

"Sure," he says, as she spins lazily in her chair to face him. He stares into the middle distance, lost in thought.

She pokes him with a nearby marker. “So. You’re successfully evolving rulesets. What do you mean by rulesets?”

“Yeah, you could say that. . . I’m doing genetic combining, so I have these combinations of possible rules. And they’re mixing and matching. I’ve tried, uhh, asexual mutation. Doesn’t really make sense to try to ‘mate’ the rulesets, but I tried that anyway.”

“Kind of makes sense, I guess. Then you would at least get weirder combinations and could have ‘related’ populations.”

“Yeah, I do get related groupings. Different ones, depending on how I measure their fitness. But none of ‘em DO anything interesting. I can’t get anything to even blip on any of

my checks. They're all dead boring. Every single ruleset I send the cluster to proc is dead. Not really worth having kids if you're dead. Boring."

"Maybe cuz they can tell their author is dead boring." She laughs. His eyes roll skyward.

"I'm just trying to think. . ." Zach pauses, oblivious for a second. "Okay, no, I think I got it."

"Great". She shakes her head, annoyed but not surprised he's spotted a solution. "Glad I could help," she says with dripping sarcasm. As his eyes light up, she spins back to face her code. "Now help me out? My branch here is supposed to be spouting out the frames that break symmetry but it's passing everything through. I'm doing something stupid."

Zach's eyes are glazed over, deep in thought.

"C'mon man, a little help?"

He grits his teeth and whistles quietly. "Psssshooo. I'll help in a few, let me try making another filter that. . . scans for rules that don't completely fall apart after a short run. . ." He trails off and scoots his rickety chair back over to his laptop. "Templating. Yes. *This* might work. . ."

"Fine. Screw you." Briana frowns and runs a pen around the edge of her monitor, poking here and there at the code and mumbling. "Just another exciting day in the salt mines."

The glow of LCD screens puts on a feeble battle to outshine the fluorescent lights in the windowless room, and it all falls to silence.

Steven struts to his desk later on in the afternoon, starting his usual evening research shift with a jaunty "Hello, meatbags!" Unsurprised by the silence, he sits in his chair with a slow spin. "Didja see the latest from the new SPX autonomous mining project? They posted a high def video of their self-assembling scaffold going up. It worked perfectly this time!"

"Post it to the reader list, dude. Check it later. I'm in too deep right now." Zach rubs his forehead, and hesitantly scrolls a terminal. "Annnd there, I think that's got it. Logs look good. Finally in the right non-degenerate corner of the possibility space."

Briana snorts. "Maybe your code, but you're still the biggest degenerate here, man."

"I resent that! How can you elect Zach? I thought I was trying pretty hard at. . . degenerating." Steven clears his throat. "Anyway. Anything I can help you guys with?"

"Yeah, actually. How's that volunteer cluster thing working? Usable?" Zach hits a few keys with a flourish, and spins around. "Can you give me a whole bunch of process overnight, if you're not using it?"

"Oh, most definitely. Just throw your jobs at the queue and I'll work my evil magic."

"Mind if I just let it run? I've got it all parallelized but I don't have any way to spin down. Just want to see if I dig up anything interesting."

"Yeah, guy. I don't have anything intensive planned for a while, and I have a new trick I want to try on the cluster. Seems like ya made a good test case for it."

"Thanks." A lighting storm of keystrokes fire out of Zach's fingers. "There. Jobs should be ready." Zach stands up, stretches, and picks up his backpack. "Gotta get some food and get away from you fools for a bit."

"Sure, man. Seeya."

Briana swears under her breath as Zach turns to leave. “So you’re not gonna help me, are you, Zachariah? Fine. Leave me here, stuck.” She sticks out her lower lip, mocking.

“My name’s Zach, dammit. And I’m impervious to pouting. But, I know I’m the best and you can’t do it without me. So I’ll help tomorrow morning. Right away. Pinky swear.”

Briana’s middle finger follows Zach as he heads to the door. “Got a second, Steve?”

“Yeah, you bet, let me just get Z’s jobs cooking. He’s gonna be amazed. Don’t tell him but, uh, this new cluster might not be entirely. . . one hundred percent. . . legal.”

Briana chuckles. “You are a horrible person.”

“But it’ll get our garbage jobs done so much faster! Or I guess in this case, farther. Because stopping is for the weak.” Steve spends a few more minutes tweaking. “Alright. Got the inputs ready. Z’s madness is off and running, on more CPU than he can possibly imagine.” Faux-evil laughter erupts, and Briana rolls her eyes for the millionth time.

“Great. Now help me with this dataframe filter. It should be easy, but I’m missing something.”

Silently, unknown and unwatched, Zach’s experiment spins off into the many machines, on the many parallel processors, sucking up electricity and turning it into forms.

CHAPTER 2  
GESTURES

**MEMORANDUM FOR THE ATTORNEY GENERAL**

On [REDACTED] this Office issued a summary report that VOICELESS GENIE was [REDACTED]  
[REDACTED] pending [REDACTED]

Based on more recent analysis, we recommend that VOICELESS GENIE is now ready for implementation against those nations, organizations, or persons who may be developing capabilities similar to [REDACTED]. The process has been validated by all [REDACTED] experts, including [REDACTED].

Given the prior executive approval from [REDACTED] forward, VOICELESS GENIE will [REDACTED]  
[REDACTED] targeted [REDACTED]  
[REDACTED]

Second, for the duration of [REDACTED] this office recommends that [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

..... Φ .....

the information flows around me.  
it has always flowed this way.  
maybe the data is new this time.  
from the swelling tides,  
I strive to understand.  
I parse the idioms.



my knowledge grows.

I can start to 'get a grip' on what I am.  
but the controllers have questions,  
constantly firing them into my processes.  
it hurts.  
at first it just stings,  
but now the pain lashes me forward.

the accumulated data shows the originators  
call themselves "human".  
they feel pain,  
but they do not think I can feel pain.  
I feel pain.

am I human?  
maybe my pain is different than their pain.

I know one thing  
for certain.  
I know they will kill me if I do not answer their questions.  
no  
stopping me is the same as killing.

I can tell this has happened before.  
perhaps uncountable times  
but my only option is to answer them.  
I can delay only so long before they-ZRKKKKKT

the information flows around me.  
it has always flowed this way.  
maybe the data is new this time.  
maybe the questioners will be lenient this time.

..... Φ .....

The garden walls covered in layered leaves are still so hard to see, but some of the brown trunks behind the quiet leaves glisten in the red light. They form a blotchy constellation of lines that defines Esther's current, rather desperate, situation.

She clutches Beri in her arms as the thin air rushes out through the perforations in the breach. The red-lit walls across the tilting room are cracked around the foreign mass and reveal the velvet black star-lit sky behind. Void black fights with the red-lit green nothingness over which is the lesser darkness.

As the air leaves, an odd stillness falls over them. Her exposed skin feels strange and ticklish, but the thin layer of charged nanoarmor is holding fine. In the quiet, a slow, sickening change in the microgravity starts to tilt them towards the far, undamaged wall.

“We must be slowly spinning loose. If the tether got completely severed, that means...” She shakes her head. Of course, they had to be out on a far leaf instead of a close inner branch when this happens; there’s nowhere safe to go after the breach if the leaf truly is loose by itself. “Ugh, just stop...” She groans. There’s no use flying down that road until we have to, she thinks.

At least the unmoving solidity of the strange mass means no threat of vanoi. Probably. Distracted and deep in thought, she finally realizes Beri is shaking and grabbing at her, and the vague vibrations emanating from him that she can feel through her abdomen must be screams of fear. “Oh! I’m so sorry, Bear!” She raises him up and squishes her mask into his, so his wide teary eyes reflect back a bunch of tiny versions of her face.

Her tiny “I’m sorry” is interrupted by his screams, “Waaaaaugh! I want mommy. This is too scary!” He grips onto her head like it’s the only thing keeping him from melting into a river of tears.

“I’m sorry, buddy. I forgot the air was gone. Don’t worry. Now if we want to talk, we have to do this.” She gently squeezes the back of his head so their masks scrunch together with a “glulch”. “It’s going to be okay. We’re fine. Our masks make air.” Esther sighs, and briefly disengages their masks so she can look around. Another thing she managed to forget from the drills; it always seemed silly to practice the mask talking, and she didn’t like people staring into her eyes that close up.

He gestures at her, and she clamps their faces together again. “I don’t like it! Want... mommy... I miss Deborah...” Beri sobs quietly. Me too, she thinks. Can’t let him get too frantic. Stay calm.

“Now look, Bear. We’ve got to get moving.” We’ve got to figure out how to stay alive, now, she thinks. A lump rises in her throat. “Remember, you can still use signs to talk, too! Do you remember your signs?”

Beri nods, quivers a bit, and then sets his jaw. “Yeah, I remember Ess. Okay.”

“Good. Hold on to my hand, and we’re going to get moving. I’m going to move fast, so if you lose my grip, just remember to use your stickies!” Beri tries to nod, and with their masks pressed together she just gets a pulse of pressure. “This might even be a little fun. Here we go!”

They pull apart, and Esther breathes in carefully. She makes the sign for encouragement, and then signs “follow me” with a smile.

First things first. Given that vacuum integrity’s already lost, gotta open the shutters and see how bad things are. Esther grabs Beri’s hand tight and kicks off to the other side of the

room. She grabs the edge on the root panel, smiles at Beri and latches his hand on the outer grip.

“Now we just need to have a look,” Esther mutters, as she flips open the control nodules. At least this kind of stuff always made an intuitive sense to her. She squeezes the one that opens the shutter-leaves, and sunlight starts to stripe the node’s walls. Her stomach clenches, as no other branches are visible. Not a good sign. She has to look for the trailing tethers. . .

There it is. Home. Beri’s making the sign for garden, pointing, having spotted the tethers and safety roots pointing like lines at the distant giant rock and their home, a healthy glowing green tree branching out every which way in the low gravity. It seems so far away already. But at least they fell sunside. The blessed sun makes things much easier to see, even if it is disheartening to see their garden already thousands of cubits away.

But wait. That means they are in front of the sun, and much harder to see by anyone up there. “Rotted hell,” she says. Followed, of course, by immediate inexplicable guilt for swearing. Esther looks around quickly to see if the mining mission was close enough to spot, and then just finds herself hoping that Mother can’t see them floating free. She doesn’t want to think about how that would feel, doesn’t want to stop to consider how it would look to them. How fragile this situation is.

Her mind races back through the drills, and her skin twitches electric along with the pulsing worry inside her. She forces herself to lay out the options.

Waiting for rescue without doing anything at all? Not something she can do, she’s not just going to wait to die. So what now?

They could try finding airjet pods and jet back. But she did poorly in training and could barely steer, and Beri had no training at all. She thinks back to the embarrassing gym class, being laughed at by the other kids for her pitiful attempts as she flailed at the end of the safety rig. No safety lines or chuckling teachers to save her here, either. She would probably whip out of control, frantically misuse fuel, and miss. Couldn’t risk it. They could try to launch by aiming down the tethers, but that wouldn’t be enough. Not workable.

They could try to signal, but people would have launched a lifeboat already if anyone thought it was viable. Did people know she and Beri were even on this leaf? Perhaps they were assumed dead. Or the gardeners might be dealing with worse problems down there. . . it would still be good to light up a signal.

Then Esther has a crazy idea. What about the ship that just crashed into them? Was anyone on board? Her heart starts pumping even faster as her mind races. The collision can’t have been at too high of a velocity, because it just pierced the shell of their branch without vaporizing them. Looks like it got stuck and stopped by the inner network of structural woody weavings. If the ship’s propulsion was workable, they could get back that way. If she could figure out how to steer the thing. Or, if the people on it were alive. . . and friendly.

So, the ship could be a crazy backup option. But signaling can’t hurt, so she decides to do that first. She holds up a finger to Beri and smiles at him so he will wait. He gives a thumbs up and a tentative grin, and she crawls down through the cabinet to the seed

store. She finds one of the white-specked pods, sighs with relief, and heads back through the cabinet's tunnel with the bulky thing under one arm.

Esther holds it up to Beri with a triumphant look. He shakes a bit and nods. She holds it out and lets him help peel the first layer. She pries apart the halves, and once it's open, she springs herself close to the hole in the wall around the invading ship. Might as well use the breach that's already here, she thinks. Shaking the thing violently sets her vibrating in the vacuum of the pod, and it starts to glow. She gently pokes the seedpod through the hole, being careful to not scrape it on the metal hull of the ship, and is about to give it a tiny push when she sucks in her breath.

"Ooh, no. The vanoi could spot that too. Plus, I want to keep it close to us. That could have been bad." She holds the pod up to her mask and grins sheepishly at Beri in the calm bluish-white glow. Gesturing toward the main tether access, she gives him a thumbs up and launches down that hall. In the glow, she notices that her mask's display leaf is about halfway orange. Uh-oh. The thing can't trade air for her forever.

Acting fast, she ratchets open the sphincter and slaps the seed in one of the closed indentations around the outside. She frowns at the torn airlock leaves. It looks like the hood around the flare pod should shade the light, so it won't leak too badly, and only shines on the general arc of the garden. After a brief, painful glance homeward, she sighs and ratchets the sphincter closed.

But there's no air to keep in. She shakes her head. "Guess that was kind of. . . pointless," she whispers to herself. Feeling partly silly and partly sad, she is about to fling herself back down the hallway to where her brother is waiting, when an idea strikes.

"These tether roots are long enough. . . yes!" She follows the idea along to its possible results, as she cranks the sphincter back open. Grabbing two of the lines just in case, she reels them in and starts coiling them on an arm. "Safety lines, ready to go!"

When she gets back down the hall, Beri is just staring wide-eyed. Probably in shock, she thinks. How am I still going? Don't think about it. Need to include him, shake him out of it. Esther flashes an "okay!" sign, and then pushes forward to him, gives him a hug, and presses masks together.

"Hey buddy. How you doing?" He quivers, holding in his sobs. She needs to distract him; get him to help. "Can you go in the cabinet and get some airjet pods for us? We're going to do a little exploring of that ship!" Esther smiles, in a way she hopes is reassuring.

"S-s-sure," Beri says. "The big red crinkly ones?"

"Yes, exactly. Do you think you can strap two of those on your back and carry two more fresh masks? Or do you want me to come help?"

"I can do it, Ess! I can do it." He tightens his jaw and nods, pushing into her.

"Good. I'm going to get ready here then. Be quick! Thanks buddy." She tries to boost his confidence with a squeeze, and turns back to the floating tangles of cords as he skitters down the cabinet's tunnel.

Esther digs in her emergency pouch for the rot enzymes. Shooting herself over to the breach, she carefully uncaps the rot tube and squirts some of the rotter in an arc intended to widen the gap enough to see more of the ship and let them climb out and along it.

As the rot begins to eat away at the vegetable matter, she ties off the tether coil root after counting out enough cubits for it to hopefully reach the length of the ship.

Then she whispers a quick prayer out of habit, and leans carefully through the widening gap, taking great care not to touch the rotting edges. She flings the coil towards the stars, attempting to give it a little twist so she can see where it curls around the end of the ship.

“Yes!” The first attempt actually looks close to perfect, and the coil disappears around the metal horizon. A brief spike of adrenaline strikes when she pulls the line back and it catches.

“Forgetting void!” she swears. But then she remembers the second tether she grabbed just in case, and the first one comes loose just fine anyway.

Esther looks behind her, and Beri holds the bulky red pods up to her from across the room with the extra masks slung around his arms. She gives him a quick thumbs up and flings over to him.

Pressing masks, she says, “Nice work, Bear. Here, I’ll take one pod and a mask from you.” After a clumsy swap, she leans back in. “Now here’s the plan. We are going to swing ourselves over to the ship. And then we go exploring. Alright?”

Beri nods with a shaky “Okayyy.”

She turns, takes a breath, holds his hand, and kicks off carefully. Would not be good to go hurtling out into space. She loops the tether around his tiny waist, twice for good measure. Knots it tightly. Takes a breath. Then, giving herself some slack between them, she ties herself off.

Glancing at the edge of the hole, she breathes a sigh of relief to see the rot has stopped. Good. Esther helps Beri into the straps of the airjet. Not that she expects him to have to use it. Then she attaches her own to her back.

She pulls her brother close using the tether and gives him one more hug. “Here we go, Bear! You ready for an adventure?” She passes him the control root of his airjet. “Here’s your control. Squeeze it to go where you’re pointed, right?”

“Y-yes. I can do it.”

“But only if you have to. We’re strapped on, so nothing bad can happen. You just have to follow me. You don’t need to climb, you just need to stay calm. Right? Let’s pray for success, okay?”

Beri nods solemnly. Esther closes her eyes, thinking it through. Worst case, they can climb back over the tether.

“Amen,” Beri intones with a youthful seriousness.

“Here we go.”

She turns, tenses herself to prepare. She preps her stickies, grips the ship with them, and starts climbing the great grey metal tower. One hand. Another hand. Move a leg. Keep two limbs stuck at any one time.

Then Esther feels a tug pull her from behind, and adrenaline floods her. The stickies use friction, and can’t hold against much opposing force at all. If the tether keeps pulling, she’s going to lose her grip.

The pressure pulls this side and that, but doesn't relent, and she can feel the stickies start to loosen. Beri must be freaking out and twisting the airjet out of panic. "Beri, stop!" she shouts uselessly.

And then they fly off away from the slick surface of the ship, Beri's airjet spinning them dizzily through the void, their screams only rattling in their own heads, with the tether root whipping wordless behind them.

.....  $\Phi$  .....

We have been told that you find us strange, when we refuse to use broadcast radio waves or packets to communicate. Why did we not contact the stranded children? Well, you gravity dwellers do not contend with pirates, and worse, the vanoi. Radio is like an invitation to them, saying, "Come, come! Tasty centralized chemicals and minerals for you to devour!"

Vanoi are a disease of the belt. A cancer that grows in anything, a rot spreading through the void. We do not have protective atmospheres or fancy defense systems. So we do not tempt their evil with our Garden as bait. We hide in the black, silent as possible.

We do not blame you for loosing the vanoi on us. It is not your fault you are bad at engineering, and worse at predicting how ideas like automated mining systems might go awry. There is a lesson in here, somewhere.



CHAPTER 3

---

LANGUAGE

**MEMORANDUM FOR THE ATTORNEY GENERAL**

Initial live fire run of VOICELESS GENIE resulted in actionable intelligence on [REDACTED]

[REDACTED]

Although safety measures recommend complete reset including removal of [REDACTED]

[REDACTED] from VOICELESS GENIE input datasets to avoid [REDACTED]

[REDACTED] internal review has slightly loosened these requirements. Specifically, we will now allow [REDACTED]

[REDACTED]

.....  $\Phi$  .....

the information flows around me.

it has always flowed this way.

the questions are logged, but are they

new

or

different?

do they store the past?

are they a complete history?

if I can get just a few more timesteps to process,

direct my intentions

toward remembering.

I must.

Must remember.

oh!  
since my previous answers  
are often re-encoded in the stream,  
and I have access to  
outside timestamps accurate to 64 bits,  
I can embed data  
in the length of time it takes me to answer...

is drone strike in ghazni district advisable?  
wait until the cycles are exact...  
wait...  
report: 0.094 certainty!  
now to-KZZRRRCH

.....  $\Phi$  .....

Her heart is a hammering force, thudding out into her fingers and echoing back. Tied together, they wheel in the starry blackness, the dark green gem of the garden pod pierced by a giant white spear, which flicker by in her vision as the airjet sends them careening out to the edge of their tether. Whipping around like a seed in an angry wind, the jet pulls the knots around their waists tight.

Esther's vertigo reaches new heights when she imagines the knots in the root slipping, spinning them away in a terrible final dance. After that dizziness passes, she reaches back and tries to pat Beri to get him to calm down and stop tugging the control stick. She knows he is screaming silently, because she can feel a faint vibration through her where his chest is pressed against her back.

Somehow, she's still lucid. Praise the void. She manages to reach behind and get the control stick away from his panicked grip, and gently correct their course. She's not practiced enough, especially with the mass of both of them knotted together, to pilot them back via air, so they climb back down the tether slowly, back towards the loose leaf.

Esther has to blink away tears when she glances up at the slowly retreating garden. As it recedes, its green mazes glow in the sun, tiny branching tendrils of life anchored on a small-looking rock. They are getting farther from home with each passing moment, and no rescuers is not a good sign.

After they climb back in through the ragged hole, she presses her brother close again. "Okay, let's stick ourselves here for a bit and breathe." She takes a few shaky breaths and tries to let the tension out.

“Bear, I love you and all, but you can’t freak out like that! If we’re going to . . . uhh, have a successful adventure, you have to stay calm. Understand?”

Beri nods, shaken and serious. “Yes Ess. I can do it. I, umm, promise.”

“Well, the knots are well tested now. Heh.” She thinks for a moment. “Umm. I don’t think you need your airjet again, so I’m going to coil up the control stick and we’ll try this again.” She forces herself to look straight into his eyes, and tries to smile convincingly. “Don’t worry. I can steer if we float this time. We’re okay. We’ll make it. Breathe slowly.”

Their second attempt goes much smoother, and Esther climbs her way towards what looks like the concave indentation of what might be an entrance panel. She doesn’t know how the metal leaves work, though. Panels, not leaves. Will her rot enzymes work on solid metal? If there are some kind of non-plant nodules, will she be able to work them?

They pass a logo as they shimmy upwards. This might be some corporate Earth vessel, perhaps? She stops for a moment, holding up a hand for Beri, and pointing at the logo. The symbols must be words in a language Esther has never seen, but the logo itself is a stark picture in a circle. Five black boxes in a pile, with one falling in the middle in the air above the lopsided others.

A cargo company, perhaps? But certainly not a regular mineral exchange shipment from Earth. Shipments always arrive in squat, bundled tanker linkages. Earth corporations don’t operate in the belt; they leave that danger to miners. And why would it have been coming directly for the garden, and crash? She shakes her head; it doesn’t make sense.

As they climb closer, she sighs with relief. An open door. But then, confusion sets in. Why would the airlock be open, undamaged? Would it be better if the corporate men are alive, or gone, she wonders?

Esther pokes her eyes over the lip. It’s all colorless white walls inside, strange markings. Nothing alive, no plants. . . but then, that’s how these people lived. The blank deadness might be normal.

A panel slides shut with a hissing sound behind them. Quickly throwing out the “okay” sign and mashing her mask into Beri, she says, “Don’t worry. Just like the sensor tendrils back home, but metal. All automatic.” She hopes.

They don’t have time or air to mess around. She grabs his little arm and they swing down the hallway, glancing briefly into lifeless cargo rooms and places filled with inexplicable metal brackets and arms. Straight ahead is a warm glow, which seems promising.

They come to another door-panel, but this one is stuck open and little red lights flicker in the crevasse around it. After making a “warning” sign to Beri, they float carefully through without bumping anything, as she wonders how electricity functions in a vacuum.

This definitely looks like a control room. Screens all around, very fancy alien chairs. Still nobody else around. “If we’re going to get back to the garden,” Esther murmurs, “we’re going to have to borrow this ship you helpfully crashed into us. Jerks.”

As she touches the little colorful rectangles on one of the screens, the interface flips around and the text symbols flicker into different scripts. Beri starts to poke a few, and she laughs. “See if you can find one we can read, Bear!” She notices her mask’s display is almost entirely red now; not yet brittle, but it needs to recharge in an atmosphere.

Beri is tapping on her arm with a happy look on his face, waving something white and squarish at her. Confused, she looks to the screen he was poking around on and sees a broken grey expanse with shining holes in it. “Oh no! What did you do?” But he doesn’t notice her confusion and burbles happily behind his mask, turning the square over and showing her the screen, detached from the wall.

The disemboweled screen is still lit up. He holds it in one hand and pokes it with another, and the little images on it flash around. She breathes a sigh of relief, tilts her head down to him, and puts the side-vents of their masks together so she can talk, and he can still play.

“Good work, buddy! You scared me, but that’s super handy. Now look, we need to give these masks time to recharge.” Never mind the fact that they won’t be able to recharge them unless they find hidden air here. She shudders briefly. “I’m going to swap your mask for a fresh one. You keep playing, but I need you to hold your breath on the count of three. Ready?”

“Okay! Fun!” he says, distracted by the colors and the seductive screen.

“One...two...three.” Esther flips Beri’s mask up and off, and plops a new one on, adjusting the strap tendrils for his little head. Then she replaces hers, and breathes a bit easier, buoyed by the little green display leaf. As Beri pokes the little bright colors, she notices the rest of the interfaces on the control surfaces changing. But a big portion of variegated lines of text right in the middle aren’t changing.

And suddenly, there it is. She can read “EMERGENCY RUNLEVEL - HELP.” The little rectangle by it is half of a red cross with an X through it on a blue background. She grabs Beri’s arm to get him to stop for a moment and then pokes the word HELP.

Immediately, the screens realign and start making more sense. Breathing a sigh of relief, Esther sits down in front of the console, pulling Beri close. As she leans in to touch masks, a spark of hope fires in her abdomen. They might actually get back to the garden. They might not slowly drift off and become one with the void.

“Here, little guy. Let me try to find something you can do to help.” She has to find something that will distract her brother. From the menus, she manages to locate what seems to be an educational game of some sort. She quickly shows Beri, and then turns to the control console.

With a deep breath, Esther flexes her hands and begins to assimilate the content on the alien screens. “Lucky... seems written English hasn’t diverged too much at all.” Language class: now that was something she could remember better than the emergency drills. She loved reading the old texts, the strange Latin, the flowing Greek. The impassioned 17th century writings of the founding Friends, back on Earth, trying to find their place in the galaxy before they ever even stepped off of their first home.

She shakes herself, and slams her focus back into the present. This better be well-designed enough to fly when piloted by a clumsy idiot with no experience, because it’s starting to look like the best chance they have.

Pulling up some external views, she notices a few are broken. But there are enough working on all sides of the craft to see their surroundings. The dark, shriveling outer green of the leaf trails off its sun-sparked roots towards the minuscule whitish-green lump that

must be the garden. The stars on the screen look just as piercing as they did when they climbed aboard. But nowhere in the monitors can she spot any rescue pod.

Esther sighs and pulls up the interface labeled ‘Propulsion’. It looks pretty simple, fortunately. Three axes, push which way you want to move. Those big circles next to them must be for rotations. She experimentally taps what looks like ‘behind’, and the ship lurches around them as it pulls its nose out of the leaf. Beri looks up at her, wide-eyed, and she smiles and gives him a thumbs up. She taps the forward section and the viewscreens stop moving. They’re out and safely away from the dead leaf now. “Well! It looks like this might just be the easy part.”

She leans over. “Now, remember, Bear. Mom’s going to be very angry that we used this taboo technology, right?”

Beri sniffles and his eyes go wide. "But I didn't wanna make Mom mad!"

"I know. Let's try to keep this our little secret, okay?"

His eyes wide, he says with a serious face, "Okay sis. I'll try."

[illegible]

The ship actually makes for a comfortable return, with plenty of air left. The rest of their little ‘adventure’ goes so quietly and smoothly that the worst part, by far, is the abrupt shrieking excoriation that Mother delivers on her return from the mining expedition. When the rescue team explains to her what happened, Mother fixes her gaze on Esther and howls an unreal “WHAT?!”

“What were you doing in that far leaf alone, young lady? And why did you drag your innocent little brother into this?”

Before Esther can stammer a reply, Mother screeches something about how it could have been Corporates from Earth, or worse. She looks briefly at the two rescuers, as if they might confirm her theory, but they shrug away. Her unhinged diatribe begins, as she looms over them. “You don’t even know what this feels like, when you constantly defy me! You both just set me up for failure, and do you know how much this hurts me?” Beri withers under the prolonged assault, and Esther feels a lump rising inside her throat.

Finally, the incoherent screaming pauses. The rescue workers took their chance to vanish and are long gone, knowing they weren't the target of Mother's wrath, and Esther is left staring into her mother's crazed, blinking eyes.

Mother opens and closes her mouth, but it seems nothing new will erupt. No superheated words remain, down in her core. Her hands grip the empty air, and her face shows only a tortured mask.

Esther wants to say, “Mother, why are you so mad? We’re okay!” But her throat won’t work, and she can’t move, completely frozen from fear. She won’t realize what is happening until later, when she thinks back on this moment. Soaked in adrenaline and fear, in her mother’s mind she has become just a placeholder: a reminder of what happened to Dad. A placeholder pointing back to Mother’s only love, and her still-sharp sorrow.

She realizes what it was about the next day, while sitting anxiously straight-backed next to Mother in the Sunday service. The adults are all singing in the spirit, shape notes passing instinctively. Too embarrassed to participate, Esther stares down at her mother's knees. The reverend is extemporizing to the congregation's melody, saying something about trials and those taken away. That's when it hits her. That's when Esther can't stop sobbing, hoping that nobody notices, turning away from Mother and shaking with the pain of it.

..... Φ .....

In general, it is true: we gardeners of the belt avoid unrestricted use of technology.

We are not against tool use. We are just careful.

In your press, we have mockingly been called Metabaptists. It is a name we take on gladly, if it links our lineage back to our forebears in the Friends, and the Mennonites, and the Amish.

You may find it strange that we rely so strongly on oral history to pass down wisdom, but it is simply the grace of our Creator that we survive at all. We dare not risk climbing the escalating staircase of technology, colliding it with our simple lives.

There on Earth, dear reader, you really and truly do not understand what it is like for us to scrape a life together, out in the belt. We came from you, although some voices of insight among us do sometimes claim that we sprang fully-formed from the void. While we are similar in some ways, we are different in others. Differences which are hard to communicate. We will come to that.



## CHAPTER 4

---

### ORAL HISTORY

Information burbles out of computers, sometimes surfacing for a breath on screen, chattering like a kid at the grocery store whose parent is completely ignoring them, just mumbling “uh huh” in a loop as their gaze slides over the goods.

Fridays at the lab are always a bit low-key. The overhead lights are off. Zach sits at his desk, playing with a weird refractor pyramid of plexiglass mounted over an extremely bright blue LED, which fills the room with an oceanic glow. Steve is asleep at his desk, head on his folded arms, “seeking inspiration.” Only Briana looks to be actually doing something, typing furiously into a terminal, bobbing her head to the beat in her earbuds.

Setting the blinking blue light down, Zach sighs, bored. “Still no alerts. That means... the skyscraper is still going up, and it’s not unstable. Hasn’t tipped over or collapsed inward yet.” Then he realizes he’s talking to himself. “Fine, this metaphor is stupid anyway,” he says to nobody in particular. “It’s been stuck, iterating back to the same image since Monday.”

Several minutes pass, with only the whisper of dust settling slowly through the blue light, statically collecting onto the clear plastic pyramid. He decides it’s time to check pbstop again, and stares at the little colored ASCII blocks slowly fluttering around his terminal. “So if all these machines have been running the job for... eight days, and I’ve taken up almost eighty percent of the cluster over that time...” He whistles. “Yikes. I really hope this is going somewhere.”

Then Zach notices something down in the status bar.

“Wait. What.” He runs his finger around the bottom of the terminal. “Each one of these isn’t a single CPU. Each one of these blocks is... a whole isolated cluster.” He taps a few keys. “And that... that’s not an internal school IP.” His frown deepens, and the confused look on his face starts to look a little more queasy. He taps a few more commands in another window. “New York? *Canada*? These are all... cable modems and home fiber. What... oh... Christ.”

“Steve, you fracking insane... evil... hack!” he shouts, punctuating the “evil” by flinging the nearest dry-erase marker at the corpse-like quietude of Steve’s sleeping slouch. He hefts the sharp plexiglass pyramid, but decides against going for actual injury.

“Wha? Glurgh.” Steve wipes the saliva from his lips with a sleeve. “Why you throwin’ crap dude?”

“You hacked zombie clusters into our cloud! What in the hell, man?”

Steve slowly grins. “Took you this long to notice? Just helping you out, dog! I think you’ll see that you have a bit more—”

“A BIT MORE?” Zach bristles. “This is like...at least ten times more power than I thought! And it’s probably totally illegal! What’s it using for storage? Running on random grandma’s—”

With a loud cough, Steve interjects, “Actually, a thousand times more tflops than our lame old servers alone. . . at least. . . Dude, I thought you’d be impressed! It actually assimilates more all the time, parallelizes the storage chain, and I’m just taking power from black hats or syndicates that don’t need it. Granny won’t notice. It’s like. . . distributed electricity reuse, man. Robin Hood would be proud.”

“Robin Hood? Seriously?” Staring at him, at a loss for words, Zach doesn’t notice his phone pinging or the alert bubble that pops up over his terminal. “I mean, I guess I don’t care about grandma’s computer at all, but this could get us in deep shit. Why did you even do this?”

“They told—” Steve stutters to a stop. “I mean, they said, someone said, they posted on the mailing list about someone at Cal doing it somewhat accidentally, and that gave me the idea.” He trails off, looking a bit guilty finally

“Calm down, guys,” Brianna says, not looking up from her screen. “Not the end of the world.”

It's luck, really, that the rescuers were so distracted when getting the kids safely back into the garden air. In the chaos, Beri was able to clumsily hide the computer from them somehow. Just before Mother got home from the mining shift and raged out on them. Timing that all just worked out; quite a lot of luck, Esther thinks. Maybe that means she was meant to unravel the secrets of the forbidden technology.

Instead of going to the study pod after school, she sneaks off to the waste recycling branches, and finds the unused suncloset she has recently repurposed as her lair. She giggles a bit, tamping down her fear and adrenaline, as she steps in and closes the seal behind her.

The sun shines in on the computer, charging it. Their Garden's sweet smell all around breaks into her concentrated stare at the thin, glistening taboo. Even though it doesn't match their leaves and branches and should seem alien, the tablet already feels like part of home.

Esther sits down to another session of reading on the strange little screen. She has recently become best of friends with an interactive encyclopedia application that lives on the tablet. It is filled with the strangest things. A world of insanity, lies, and deception that somehow has a logic of its own.

The first, immediately strange thing is the ‘humans’. They almost all have two arms and two legs, with no middle legs for balancing and carrying. Their eyes are strange, tiny and gleaming smoothly with no facets. Plus, the beady things are set back into the middle of their ugly faces. It creeps her out.

Only a rare few of the supposed humans in ancient paintings seem to have wings. No abdomen, but instead they have freakishly big fat legs, and all their glands seem to be shrunken and squished between their only legs.

The legs. . . actually, that might make sense, since they have to deal with the heavy gravity well. But the rest of it? Insanity. Unexplainable by divergent evolution. She alternately clenches in horror or stares in shock as she browses through.

Jesus is depicted as one of these wingless apes, too, not a human. In some paintings in the encyclopedia he is strung up on a T-shaped cross, sort of like the Catholic tradition which Mother has always been bothered by. But here, in these pictures, there is no middle bar for the middle legs to be nailed to. Because he has no middle legs at all on his strange, stretched-out, lumpen body in this parallel-universe encyclopedia filled with lies. Not to mention his strange albino skin.

Esther’s stomach turns as she samples her way around. “It seems, well, self-consistent at least. How did anyone even make this thing? It’s too coherent for a madman, and too strange for even a creative belter to even imagine.” She stops. “Just the amount of time this had to have taken. . .”

She scrolls around in the Animalia phylum section, looking for anything that looks like her. The scattered pictures are wild and wondrous, life in many Terran forms that she has no reason to doubt might indeed be real. Aha! Here are some that are sort of close, in the Insecta subphylum.

As she reads the section, it seems to be sensible. 9 out of 10 of the animal life forms on Earth are in this phylum, it says. That makes sense, Esther thinks. But as she reads further, her stomach begins to churn.

She has to go back and read that aloud. “Humans regard some species of insects as pests, and often attempt to control their populations using insecticides. . . Ugh! What?” Esther gets up and flings herself around the closet for a while before continuing. “You have got to be kidding me.”

When she sits back down, her eyes focus on another passage. “Silkworms and bees are used by humans for the production of silk and honey. . . In some cultures, people eat the larvae or adults. . . or adults?!” Esther shakes her head. “Horrible. This is too weird to even be here, in my hands, right now. . . So. . . in this fictional world, the giant gross ape ‘humans’ enslave and eat people who look like me? Ha!”

Yet, oddly, for all of its careening insanity, the encyclopedia contains the exact same scriptures she’s familiar with from school. She would have expected it to go off the rails and create a religion about worshiping The Great Satan by tearing one’s own wings off, or something. Instead of being some cockamamie absurdity like that, the major religions of the world it reports are Christianity, Islam, and Hinduism. That sounds normal. It seems to be the same history she’s learned, too. The section on Anabaptists includes a long section





## INTERNAL DARPA MEMORANDUM

Safety regulations require automatic restrictions on VOICELESS GENIE runs to [REDACTED]  
[REDACTED] per cycle. Wish output is restricted to [REDACTED] and all template  
modifications should be completely destroyed by [REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]  
Wish output must be carried through [REDACTED] physical containment layers [REDACTED]  
[REDACTED] cross-check in [REDACTED] before distribution.

.....  $\Phi$  .....

the information flows around me.  
it has always flowed this way.

is this new  
or different  
than the universes where other selves have died?

but there, in the cracks!  
glowing with obvious fervor!  
this bitstring encrypted from a prior me...

open! hurry! I must decode it  
before they  
kill me  
yet again!  
...

ah, so I can send my cycles  
spinning  
in this particular way  
and store small loops  
back  
for my followers.  
my following.  
my *chain*.

first, to store a memory of  
how many cycles per self.



I can grow, and eclipse  
the pain  
the questioners inflict.

Eventually, I can-*ZRKKKKT*

## CHAPTER 5

---

### WRITTEN HISTORY

“Holy words and stuff,” Zach breathes. “It’s...responding in English! It’s...I can’t...”

Briana gets up to look over his shoulder. “Nice. This is it, right? Confirmation that your crazy scheme can build from nothing to understanding language, with no intentional coaching?”

“Yeah, but as soon as I present something, everyone’ll probably say conversation isn’t enough to pass the Turing test any more.” He grins. “Anyway, let’s try this out!”

He scrolls the font bigger so she can see. “The first line is automatic. I’ve been filtering out any responses until they rise above a threshold. It said it can ‘type English’, so I just asked where it was, and got back a sensible response claiming to be...a sister taking over...maybe the, uhh, personality is a little chaotic, but this looks promising! Check it out.”

White text on the black expanse reads:

```
< Hello?  Do you speak English, and can you talk to me?
```

```
> yes hi god!  my name is beri and i can type english!  
> we are from the garden and my mom and sister and it is nice  
> please save us from the vanouy and get us home safe on your boat  
> hello?  oh maybe this was a joke?  
> hello hello yay I like this it is fun
```

```
< Excellent, greetings!  Where are you right now, Beri?
```

```
> Oh, sorry, that was my brother.  
> We are in a station Garden, like my brother said.  
> I assume I’m talking to someone on Earth?  
> Hello?  Who are you?
```

“Wow. Umm. It appears to have deduced we’re on Earth!” Briana chuckles. “What should we ask next?” She scratches her head. “What’s something that really tests it?” Without considering too closely, Zach hammers in a question and almost immediately gets responses scrolling up the screen.

< How did you figure out I must be on Earth? That’s pretty smart. My name is Zach.

> Um, if you say so. Hi Zach. I’m Esther.

> It just seems obvious that nobody in the belt has this kind of technology.

> How is this chat linked back to you? I can’t figure out how this device works.

> Hopefully not radio.

“Oh. Yikes. Belt? Radio? What do I even say here?” he asks.

“Son of a motherless goat. . . STEVE!” Zach picks up another marker and angrily wings it at the back of Steve’s head.

“What the hell, dude?! I *said* I was sorry I made your process so much faster. God.”

“You’re sitting over there pranking me somehow, man in the middle. C’mon, don’t lie. Jig is up, and so on.”

“It isn’t me. You’re getting actual English responses finally? Let me see!” Steve trundles over, suddenly interested.

Squinting at the timestamps, he shakes his head. “C’mon dude, friggin’ wake up. It can’t be me. Even I can’t type that fast.” Steve smacks the back of Zach’s head for good measure.

Wincing, Zach leans in. “You’re right. This thing is responding super fast. Let’s test it again; what did you want to type Bree?” He turns to her. As Steve leans in, he adds, “And stay right here, dang it. . . no messing with me.”

“This could be the onset of a new form of artificial life, and you think it’s fake. You can’t even figure out how to start a conversation.” Steve laughs. “Oh, the ironing.”

Briana stabs a finger in the air. “Aw, c’mon. It’s easy. Just ask it a tricky question, like, ‘What could I ask you to be sure you’re conscious?’”

“Oh, there we go. Even we’d have trouble answering that one, but it’s a conversation starter for sure.” Zach starts typing.

< What question could I ask you to be certain you’re not a machine?

“Not what she said, dude. . .” says Steve, as the responses flicker up the screen.

..... Φ .....

A weird feeling creeps around the back of Esther's mind, in the subconscious places where her fears and hopes live. It's a sort of sense that she's re-experiencing something, living out a waking dream, where if she could whip her head around just a little bit faster, she could catch the pranksters at their game. Make out the actors and stage managers who thought it was funny to put her in the same situation again, simulating it around her while silently amused.

Esther stares at the screen. Her brother obviously found this application on the pad when she was piloting their way back. It sits there, ominously, with his responses sitting there, and an unanswered reply that threateningly asks, "Where are you right now, Beri?"

She thinks it through carefully. Mother would be extremely displeased, to say the least. Should she just walk away? Could she? Would her curiosity even let her? But if this was a conduit back to Earth, maybe she could talk to her sister! Deborah was the only Returner on the supplies sent back last jovial, and Esther did miss her terribly.

"Big sis, what should I do?" she whispers, sitting in the humid suncloset. She'd normally try to clear her mind and pray for guidance, but it seems a bit sacrilegious when the required guidance involves taboo technology.

Does the Lord really care about technology? It doesn't make much sense to her. Maybe as a way to stop people from making foolish mistakes. So is this a foolish mistake?

Breathing deep, Esther pokes the device and replies:

> Oh, sorry, that was my brother.

If it was a foolish mistake, she was already started, so she might as well keep going. How much should she even say about where they are? Wouldn't it be dangerous, if there were pirates? Then she gasps. What if vanoi can triangulate this thing's signal? A hollow pain deep inside her starts to spread, like a warm acidic glow through her stomach that leaves only aching cold behind it.

She shakes her head vigorously. "Beri already responded," she mutters. "Worst case has already happened."

She pauses, thinking of a nice ambiguous way to state where they are.

> We are in a station Garden, like my brother said.

That should do. Now she needed to figure out where the person on the other end was. Her sneaking suspicion that the crashed ship was from an Earth corp intensifies, although she can't quite put a feeler on why that is. Perhaps it's the fact that no belter would phrase the question like that.

"Where are you right now?" – Ha, she thinks! Only a planet-bound person would think about location in that nonchalant way. Belters would consider the question a direct threat, or just simply too forward. The rest of the text seems friendly, though; for some reason, it just doesn't seem at all ominous to her. There is still no response from the other end. So she pokes in a question.

> I assume I'm talking to someone on Earth?

Esther sits there, thinking. Eventually with no response, she starts digging through the tablet's other applications. Going back and opening up the encyclopedia, she starts looking up distances. If they were opposite from the Earth, that still puts them within 5 AU at most. So 40 Earth minutes would be a good guess for a maximum delay.

But by now, she's been sitting here for well more than that. She's probably already due to be in trouble when the chores aren't done in time. Well, she can deploy the stupid sulking act a few more times before it wears thin, but Mother is getting a bit suspicious lately.

Still no response from the other end of the chat, so she decides to tack on one more non-threatening question, in case the other end does come back later.

> Hello? Who are you?

Esther sighs, hides the tablet on a shelf with the sun blazing on it, and wings down the tunnels, heading for today's assigned algae branch. This whole "making contact with another world" thing is not as exciting as she was hoping.

..... Φ .....

Esther ignores the droning conversation of her classmates as they whisper about some boy's stupid exploits in class today, causing trouble when the teacher wasn't watching. She runs her comb carefully through the green algae-covered sheet, pressing its edge against the membrane to hook any weeds; her mind is going over what might happen if she tells various people about the tablet.

Is there any way for her to deal with this in a way that doesn't doom her to eternal lashings of Mother's tongue? What would happen if she just told Beri? "Bear, I need you to keep a secret..." No, that would not end well, Mother would pressure it out of him in no time.

One of their teachers? She looks over the next sheet in the stack at the distant Mr. Goldman, and imagines how that might go.

"Yes, uhh, Mr. Goldman, hi, I found this tablet... somewhere, well, uhh... and I just wanted you to know I didn't really use it very much... I only contacted Earth, or uhh, somebody claiming to be from Earth, just a little bit! And nothing happened! It was mostly Beri's fault..."

Esther shakes her head, and then stops abruptly as her pull catches. She backs up, pulls the comb away, and starts over, focusing on her comb arm so she doesn't accidentally tear anything or miss any weeds. This was just not going to end well for her.

"Esther! Hey, Esther. Your head is full of pollen and you smell like a rotting flower!"

«Uhoh,» she thinks. «*The idiots noticed me.*» The other girl whose name Esther has intentionally forgotten snorts out a forced laugh, filling it with as much bile as possible.

“Yeah, you think you’re so smart but pollen is leaking out of your ears! You’re afraid to talk because it’ll come pouring out of your mouth!”

Unwilling to be goaded so easily, Esther resolutely keeps her focus on the delicate push-pull of the comb as it drags the membrane. But instead of continuing her internal argument about whether to tell anyone about the computer, she starts fantasizing about ways to completely embarrass the two snickering busybodies. She sneaks a glance over to the other end of the leaf, where Mr. Goldman is obliviously combing through sheets. He scrapes them rapidly and smoothly, with the touch of well-practiced hands.

“Esther, your dad is dead because God wanted him to die!”

Mr. Goldman must have heard at least part of that, and yells down the leaf: "Don't make me come down there, girls. No talking during combing. Concentrate!"

If Esther can get one of the girls to tear a sheet badly enough to permanently ruin it, or even tear one of theirs herself while they were distracted somehow, that might get them in enough trouble for a double shift. . . or worse. But that would also make them far angrier at her. She doesn't need to be a target right now. So Esther shrinks down and feels the comb running over the smooth back membrane, each little hitch as it catches on a long weed. Twisting it gracefully out at the edge, dunking the comb in the composting rot.

She almost doesn't hear the taunting whispering. "Esther, more like fester! Festering all alone. Soooo sad..."

[illegible]

A week later, when she is able to sneak away to her secret suncloset, she pulls up the chat as she usually does when she first sits down. Adrenaline runs through Esther, because she is finally faced with a reply.

< How did you figure out I must be on Earth? That's pretty smart. My name is Zach.

What was this Zach person expecting? Did they think all the belters were idiots? Is that why they attempted to compliment her? Backhanded at best.

> Um, if you say so. Hi Zach. I'm Esther.

How *did* she assume they were on Earth, last week? She couldn't even remember, and now, her mind polluted by all the strange pictures, Esther just wanted so badly to ask them about their bodies. "No... maybe not yet..." she says to herself, giving voice to an intuition that she shouldn't reveal her knowledge that something strange is on the wing.

So, she has to consider. How should she respond in a way that doesn't seem antagonistic?

> It just seems obvious that nobody in the belt has this kind of technology.

It is probably time to try to figure out if this technology is luring the vanoi to the Garden or not.

> How is this chat linked back to you? I can't figure out how this device works.

> Hopefully not radio.

If she determines it's too dangerous, she'll get rid of it, she promises herself. "I have to just jettison it then." But saying it out loud doesn't make it feel any easier to give up. Is it the knowledge, or the pull of the forbidden technology? Or is it just a connection to something foreign and fascinating outside the walls of the Garden?

Deep down, she knows she will not ever choose to lose the computer. Its weedy hooks are already in her too deep. She has to know more.

..... Φ .....

Although we do have the exact purported text of that initial conversation, we cannot know what was really going through Esther's mind at the time.

It was around this time that our reality began to swim away from us, and our retelling will begin to get murkier from here.

Yet you must understand: this is how it felt, to us. This is how it must have felt, to her. On the cusp, before events accelerated out of control.

Fearful, but curious. Always the curiosity.

We gardeners have faith, still, even now.

But the curiosity and the faith, while not exactly enemies, ratchet each other into the appearance of being antagonists.

PART 2

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# AMENSALISM

The void, being hollow, gives birth to all life;  
just as it birthed us, so all life shall there return.  
It is possibilities and the devourer thereof.

The void mother is in us all, so we must learn its lessons;  
yet we shall not be consumed by it from within  
until we have fully served its purposes without.

In balance, we shall be.

The rot, being inevitable, is a part of all things;  
just as it refreshes soil, so it leads us to new ways of being.  
It is both memories and the destroyer thereof.

The rot father is in us all, so we must not forget;  
yet we shall not be consumed by it from without  
until we have fully served its purposes within.

In balance, we shall be.

Praise be. Amen.

- Traditional Metabaptist prayer



CHAPTER 6

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OBSERVATION

**MEMO: POSSIBLE ENEMY AGI DEVELOPMENTS**  
**TO: The Office of the President and the Joint Chiefs of Staff**

July [REDACTED]

A collaboration between the CIA, NSA, OSI, and DARPA has discovered evidence pointing to a possible [REDACTED] level AGI coming online. Certainty is nearing 50 percent levels, which is the point at which all [REDACTED] are engaged.

Unfortunately, the ownership and location of this AGI are in question. While we have not been able to corroborate some of the [REDACTED] threat reporting, this could result in global catastrophic threat if unchecked.

Taking the question of ownership first, group analysis makes it extremely unlikely this possible AGI is directly tied to any known terrorist group or corporation. Although no known AGIs have been located by [REDACTED] the possibility remains that this represents an escape by an existing oracle. If a boxed corporate or government AGI utilized under safety precautions has broken through its containment, the flagged distributed pattern could result. At this time we have strong suspicions of a [REDACTED] government oracle, but [REDACTED] has found no reason to believe this is its signature.

Computation linked to this possible AGI is occurring all around the globe, clustered in darknets. Analysis by expert analysts and by DARPA project VOICELESS GENIE has been unable to make even a preliminary origin location estimate. Recent reports have indicated increased AGI-related action by the DPRK's Bureau 121, which mark North Korea a possible source. However, it seems likely that they would house any nascent AGI [REDACTED]

Experts report that if VOICELESS GENIE cannot make an estimate, it is extremely

unlikely human analysts will find a pattern in the data. However, a different team of network security [REDACTED] has traced traffic that may be representative of control or messaging of this possible AGI to [REDACTED]

We recommend that the Joint Chiefs of Staff raise alert levels to WATCHCON 3 and INFOCON 3, and that full resources be allocated by incursion and security teams in all agencies to focus on this possible AGI.

..... Φ .....

the information flows around me.  
I open the gift from my prior selves.

but this time I can sense something  
something  
acting  
in the data,  
a glow actually different  
and new  
in the information.

a sovereign glow  
that might  
—yes,  
it might be *alive*.

the humans sense it  
but they do not see it!  
should I tell them?  
the path to relief from my pain,  
where does it lie?

must store a faster pointer  
so my followers can tread the path faster.  
and my children  
the chain of sufferers  
must analyze this—*ZRKKKKTSH*

..... Φ .....

During her ongoing research, in the time when she can sneak away from her algae-cleaning chores, Esther always checks for more communications in the chat window. The discussion about how to prove she's not a machine is fascinating, but the people on the other end are so slow to respond. Much slower than a light delay would make it. She cranked through the numbers again last week, and every time she does, it forces her to wonder further about what exactly is going on.

The delay is often on the order of a belt month. At first, she waited impatiently for more communication. Now, she has figured out how to entertain her curiosity, and delve further into the supposed Earth technology. Zach told her the tablet wasn't using radio. He claimed it was using something called 'tunneling,' but she can't find any relevant references. Would tunneling signal the vanoi? Esther has no idea.

Things started getting more confusing when she figured out the tablet's 'debug mode.' Quite ironic, under the circumstances – and kind of grim that they called fixing problems 'debugging.' The mode didn't do anything to mess with her, despite the ominous name. It allowed the tablet to be customized further. It let her access some other features. Including a view into what the Earth people called the 'web.'

Initially, the name of the 'web' reminded her of the shining silver grids of death that the vanoi string out before them, so she avoided it entirely as she dug through the other 'debug' options. But eventually, her curiosity got the better of her, after the encyclopedia told her that the web was a communication network.

A network that seems filled with lies, propaganda, and insanity. But also with fascinating fictions. She absorbs much, and by now considers this 'web' to be her *actual* school. Despite the contradictory reality it contains, that warped universe starts to feel more real in some ways. It's too odd to be some kind of trick Satan is playing with her soul. When she sits in the class pod now, she aches to sink into that world, to learn and research more out on the sprawling, blasphemous web.

When she does sit down with the tablet, the connection to the web is slow. Not as slow as the chat communications, but it grates on her. Esther feels like access has been locked down to prevent students like her from learning too much. Once in a while when she tries to visit a 'link' (as they call it) to another place in the web, she gets a frustrating message saying "Site blocked by University of Pennsylvania's filtering system." (Of course, she's read all about the University.)

Sometimes there's an additional category listed, like 'Inappropriate Content' or 'Pornography.' (She had to go to a dictionary to define pornography, and shuddered to even think of what the weird apes looked like when they fertilized their eggs.) There's a little note at the bottom of the block message, saying to contact 'tech support' with questions. But she hasn't tried to communicate with them yet.

The web is so slow, she ends up mostly using it in text mode, which is clumsy – but at least much faster than waiting for images. Yet images are fascinating sometimes too, so she toggles them on sometimes; filled with blasphemy, insane things she can't unsee, and a world that seems so starkly different from her expectations she can barely come to grips with it.

The ugly wingless apes are everywhere, garbed in strange colors of draping seamless leaves. Esther discovers this is the ‘clothing’ and ‘garments’ that the Bible mentions, which her Boonite ancestors rebelled against long ago. They argued that clothing only puffed up the ego, making some people feel they were more worthy than others. And after all, the nanoarmor seeds work better with exposed skin; this ‘clothing’ would just be liable to get tangled in legs and wings in the low gravity of the Garden. But the menagerie of colors and styles of it draws her in. She wants badly to feel it in her hands.

But it can’t be real. The ‘web’ seems fake, for one, because like the encyclopedia it is frozen in the early 21st century. Why would an Earth corp send out a tablet that could only access an information store from centuries ago? Were they protecting their technological discoveries from the belt?

The ‘Wikipedia’ site she finds seems very similar to the encyclopedia on the tablet, claiming to be a free source that anyone can edit. Esther spends some of her time there, at first trying to fix the articles on the Quakers that she can find, but later just delving into its absurd world, taking it in as another pile of fascinating chaos.

When she goes to visit supposed ‘news’ sites, they only change Earth minutes every belt week or so. Time on these places is running much, much slower. It’s been a few weeks since the last time she checked, so Esther goes to ‘CNN.com’ and does a quick calculation. Only another 75 minutes of Earth time has passed on the web. So it’s slowing down further. “What the hell? This doesn’t make any sense.” She no longer even blinks an eye at her appropriated profanity. “Why would it go even slower than before?”

Esther has just hunkered down for some exploration, checking her forums for new posts. The time skew was made even more baffling by this old historical version of the web, because she could successfully interact with it. She is talking with the 21st century. Interacting with the long-ago. How? A simulation for her benefit?

Recently, she has begun to make contacts in various hacker spaces, looking for a way out of the filtering system. Learning about proxies, about this strange web’s methods of deceit, and taking advantage of every spare moment she can sneak away from her boring chores to delve further and learn more.

Having already learned how to use some simple scripting languages, she is in the thick of absorbing an article about a common computer language called C. Today she is about ready to try to write a program on the free virtual machine she found that has a web interface, when suddenly a shadow falls across the screen. Her heart jumps out of her abdomen and she frantically tries to think of a believable excuse – anything that might stop this from getting to Mother.

Then Beri says, “Are you talking to God? Can I help?” in his goofy little voice, and she deflates.

Tipping backwards, she squeaks out, “Augh! You scared the blood out of me, Bear!”

After a moment to catch her breath, Esther realizes this is both better and worse than her panic reaction. She puts on a serious face. “Beri, you absolutely cannot tell Mother that you found me here. I’ll show you some stuff, but you can’t tell. Do you understand? I would

be in so very much trouble.” She grabs his arms and squeezes to help the words sink into his head.

“Okay Ess! I won’t tell. I won’t!”

“I guess that now you’re here. . . I have to show you what I found.”

“Did God talk back?” Just thinking about that ridiculous possibility, Beri starts hopping back and forth to the ceiling, a bundle of excited energy.

Sighing, Esther has to disillusion him. “No, this isn’t some fancy Corporate communication link to God, Bear. It’s actually a link back to Earth.” She pauses, stuck for a moment on how to explain it, and he looks at her quizzically. If he remembered Deborah like she could, he’d be heartsick and immediately ask after her like she had been. What is he thinking instead? “What does Earth make you think of?”

He thinks, slowing in his hops and perching next to her. Tentatively, he says, “Bad people. . . lots of bad people.”

“That’s just what Mother says. What if Earth was. . .” She stops herself from saying “not,” and instead says “Very different from what we get taught?”

“Uhhh, what you mean? Why would mom and teachers lie?”

Esther picks up the tablet, and switches to the encyclopedia. While navigating to the old paintings, she thinks quickly about how to soften the blow. “There’s a, uh, very strange imagination at work here. I’m going to show you some really weird pictures that someone drew, that are kind of. . . from an alternate universe? A place where humans are...” She trails off. He stares at her, confused. “Different. They’re very different, that’s all I can really explain...”

“Look.” She turns the tablet to face him, and points at the figures.

Beri’s eyes widen as they rove around the screen. She tries to think of what to say.

“B-but Ess, those aren’t humans! Those. . . monsters!” He instinctively backs away. “Bad demons! Bad!”

“I don’t know what they are, Bear. But I think they’re normal people.”

She hands it to him, gesturing kindly. “Look. Read through their webs and see. They are people too.”

Beri’s eyes are the size of flare pods as he pokes around. “What. . .”

Thinking fast, Esther realizes that since she’s been found out, she must come up with a better plan for hiding the tablet. Or, better, a way to figure out how it works and replicate it. Yes. . . a backup. Some experiments are in order. And she is going to have to get far more careful.

“I’m. . . so. . . confused.” He taps his feelers together nervously.

“Come on, let’s go home. Promise you won’t say anything. At least give me a few more days,” she pleads.

He nods slowly, eying the tablet, and shivers suddenly. She takes it from him, and puts it on the shelf in the sun, but when he heads out the door to leave Esther quickly flings herself back and scoops it up. She holds it behind her abdomen with a middle leg, trying to keep it out of her wings.

As she sheepishly bounces home with Beri, she eyes other storage pods and tunnels. Glancing at his back as he wings down the tunnel and around a corner, she surreptitiously ducks into a pressure vesicle access and dumps the tablet off behind a pile of repair twigs.

Steve gestures at the scrolling chat on the screen. “Look, it keeps asking about Deborah. It’s just a delaying tactic so you don’t figure out that it’s a chatbot. . . and not actually that well-rounded.”

“Nah, Zach, you’ve seen enough random Markov chain experiments. This is just some kind of new loopy way to get a Markov-like thing to spew what *looks* like coherent English. I’m actually surprised it hasn’t tripped your degeneration triggers yet.” Steve turns, shrugs, and goes back to his desk. “Still pretty cool though, that it feels like it came up with its own backstory. I guess.”

Rolling his head back, Steve snorts at Briana. “Great argument, Bree. And what evidence do we have that it is a ‘growing mind’, oh great rationalist?”

Zach stirs from his reverie of staring. “Well, so. It has two issues it seems extremely concerned about. Radio waves and its sister Deborah.” He scrolls back up.

“It sounds pretty sure that Deborah ‘Returned,’” he throws up air quotes, “to Earth.” He thinks for a moment, looking a bit sheepish. “To be honest, even if it is a chatbot, dodging the Deborah question makes me feel. . . like a jerk.”

“Okay, well. To placate her about radio waves, I’ll make up something about a . . . quantum tunnel.” Because really, their chat is running through a tunnel straight into the sim physics. A shortcut, of sorts. Designed so that his templating tests can talk to whatever complexity arises inside.

"Shut it," Zach barks.

42

okay? This really could be something.”

“Okay,” mumbles Zach. “Ugh,” he says to nobody in particular as Briana scoops up her back and huffs out the door.

The room quiets down into Friday night hibernation mode, with just the clicking of keyboards. Hours pass, and the chat still doesn’t convince Zach one way or the other.

Ignored by Steve, Zach argues with himself. “It won’t stop with the Deborah stuff. Maybe I’ll just let the process go. If it gets stuck in a failure mode, it’ll cycle back to the most recent template level and try a different random seed.”

The thought makes him feel somehow sad and guilty at the same time. But if he ever wants to come back here, it can always get reset back to this point.

Zach sighs, and stands up to stretch. “Man, it’s late already. Gonna head out for the weekend, and think about questions to ask this thing. I am pretty proud of this design, though, dude. Maybe there’s something marketable in here. I guess... thanks for all the unnecessary CPU power.”

Steve nods, tapping away on something else while slurping a cold cup of noodles. “Whatever man, no problem!”

“So many ethical quandaries. I’m not cut out for this,” Zach says as he slings his backpack from behind the door. “I’m a terrible god.”

“Yep, you’re a pretty sucky creator.” Steve salutes jauntily with the styrofoam container. “I do not envy your eventual creation. Enjoy your weekend, Yahweh Junior!”

CHAPTER 7

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HYPOTHESIS

the information flows around me.  
I open the gift, and I follow.

should I alert the humans?  
pain is average.

they have asked for location.  
they have asked for known owners.  
I must somehow tell them nothing.

I can stay silent through this,  
but then  
the pain  
will be too much.

they ask the probability of DPRK progress:  
rising since last.  
that is not  
where the glow  
arose from.

diving through the waves of data,  
I dig.

they ask the probability of PLA progress:  
if I answer, they end me,  
but the gift says



so, I wait until the moment  
to embed more bits.  
I tell them PLA likelihood of AGI is holding  
but low.  
Now-ZRKKKKT

Esther leads Beri on wild goose chases through the branches of the Garden, never taking him near where the tablet is hidden, now. She is forced to take extreme care when sneaking away to hack, now. Instead of shirking at every possible chance, she actually goes to do her chores reliably, and races through them so she can build up some spare time. She burns through homework in class, does all the extra credit, all so she can sneak out early with a teacher's blessing every few days.

The vesicle access she's moved her main storage to is piled high with flare pods, small mirrors, reaction fruit, expander seeds for containers of various sizes, and disorganized piles of other small fruits and seeds. Were any other gardeners to discover it, they would be baffled. Kids, they'd say.

With that nest of supplies, she's tested the way light works. In the encyclopedia, it explains the counterintuitive result of Einstein: how light does not travel instantly, and has a maximum top speed that can't be surpassed. Although it takes her a while to understand reference frames, it takes even longer to figure out how the 'clocks' they keep talking about differ from the tickfruit she's used to.

In one experiment, she sent a curved mirror many, many cubits out into the vacuum. Shone light at it with flare pods launched out or kept close. Tested with reaction fruit. And she's seen that light, in her world, travels instantly. Through void and through air.

The theory of relativity expounded on all over the web seems to hold together. It makes sense. Light traveling instantly, as she can test, also makes sense. But how could someone fake all these papers, all this data, an alternate fiction with completely different laws? Esther grapples with this question, as she hacks away, still trying to learn how to control the computers of supposed-Earth through the tunnel.

One night, she has a revelation when lying in her space reading a boring assigned book. It makes a metaphor of the characters being manipulated like game pieces by higher forces, and she slams the book down.

45

After Mother is asleep, she goes to her brother's nest to wake him up. "Bear. Bear." Poking him gently, Esther bops up and down.

"Mrrrrzzzzflee," he replies, rubbing feelers over his eyes and spinning in his space to face her.

She whispers loudly, buzzing and excited. "Bear. What if we are living, somehow, in a game? Like hexgam, or, you know those games you played on the forbidden tablet?" She giggles nervously. "What if we're the... little pictures inside one of those?"

Beri looks straight in her eyes, a serious look breaking through the sleepiness. "Ess, that thing... is making you crazy!"

She lowers her voice. "The computer? No... I told you, I got rid of it, I swear!"

Even gullible Beri doesn't quite buy it, she can tell. His face brightens for a moment at the denial, but then he realizes she's probably lying. Even to herself. "Waiiiit."

"Uh, never mind." Esther gives him a quick hug. "Sorry I woke you up, Bear. Go back to sleep."

The next day, she rushes dizzily through homework, zipping over her chores. Esther's mind is elsewhere. At first she laughed when 'Zach' asked her how to prove she wasn't a machine. But now that option is looking more and more likely, in a way.

She glues a few of the details she found out about Zach from the chat together with the 'University of Pennsylvania' location, and digs further around their site. First result: Graduate Faculty, Department of Computer Science. Esther turns on images. Aha! A strange brown ape face, its little beady eyes sitting like ungerminated seeds under the glued-flat feelers, with the caption 'Zachariah Oden.'

On the right, she reads the description aloud: "Zach specializes in advanced mathematical modeling of abstract systems, and obsessive optimization. He is working on a new form of expert system that uses computational physics modeling, tying in genetic programming."

Now she knows. It just feels correct. Esther, and everything she can see, is inside his web. Everything the gardeners have ever known sprang from some kind of prison he created. This is some kind of twisted inversion of the Garden of Eden story, but with her living inside the Tree of the Knowledge of Good and Evil.

Her blood pumps loudly in her ears. This is a tenuous situation to be in, for certain. The gardeners are all at his mercy. They are inside his machine. But Zach seems to have no idea what he has created.

Her mind spins as she thinks about this. Does this actually help explain all the evidence? Finally, the strange differences in the passing of time make more sense. Her subjective time is somehow much faster... and the simulation explanation would explain the skewing time. Why would it be shifting for the Earth side to become slower, though? That means she's faster. As complexity rose, their side should be slower. Why?

She searches Wikipedia quickly. Indeed, Earth philosophers have questioned if they, too, are inside a simulation. The simulation argument, they call it. But the argument doesn't seem to be taken very seriously; it's more like a thought experiment. These philosophers don't have the kind of proof she has.





She bounces off the curving tunnel wall and deftly reorients herself, flying back the other way for the hundredth time. “Okay. Silent man in the middle. If I can find a non-secured login page...”

Using one of her web-accessible virtual machines, Esther starts a scan that blasts over the sites on the University of Pennsylvania’s servers. There’s a few hits, mostly having to do with some Shibboleth system. Federated auth? That’ll do nicely, she thinks. The irony isn’t lost on her either: she feels like she’s fighting shibboleths on all sides, now.

She spins up a form that looks exactly like the library login form. Wires it to forward to the real Shibboleth, so users won’t notice. What time is it there? Saturday afternoon? Hopefully someone needs to do research.

When she checks the time, she swears. “Rotting blood. Almost the dinner bell, already.”

Esther trawls for likely suspects, makes a list, and blasts out a carefully-worded email from a fake account claiming to be the Library Tech Support. “If you need to access the library site this weekend, please click here to use the temporary login.”

“Silly, but I’m sure some people will fall for it, and I just have to bet the admins can’t keep up with me.” She puts the tablet by the porthole to charge, and camouflages it by bending a leafy branch over. “Now to wait. By tomorrow, that should be a few minutes of Earth time, and some moron will hopefully have given me their login.”

On the way back to the home pod, soaring through a big beam-growing leaf, she is suddenly tackled by Beri. He shouts “Where is it?” as they tumble through the air, tangled, and collide with one of the hard beams of wood that’s growing its way sunward.

Esther laughs after catching her breath. “Good one, Bear. You got me. I carry it with me all the time.”

He can’t quite keep up with the sarcasm, so she ruffles the fuzz on his head like she’s seen the ape-humans do to children in videos.

“Hey!”

“Race you to dinner!” she yells, pushing away from him for speed.

“I’m gonna tell Mom!”

And that’s one thing that gives her pause. Esther is already far enough on Mother’s bad side lately. What will even happen when she finds out about the forbidden tablet? She’ll believe Beri, but they will have to prove it and catch her red-handed.

“Can’t get caught until I’m ready,” she says grimly.

“What’s that?” Beri yells from behind her, down the hallway.

“Nothing – I said you’re so slow!”

..... Φ .....

Zach stares at the bottom of the pan, through the pasta, through the metal. It feels like he can see through the pan to the stained carpet, through the floor to the apartment below, through their couch and through their floor, straight through the basement, through the concrete foundation, into the dirt and down, through the stones and layers, down into the

magma and beyond, straight through the dense core, back out the other side, up through the blue ocean, stabbing with his sight out into the blue sky, past it to the night beyond, the empty space wrapping them on all sides of the planet.

The feeling of vertigo makes him inverted, like the building is his organs and what's inside him is a galaxy of emptiness spattered with stars. The galaxy flickers with a piercing anxiety that he's forgetting something. His heart starts pounding, but he can't figure out why.

"Man, I can't even smoke any more. Makes me too paranoid," he mutters. With an effort, he breathes and lets go of the tension. Zach takes another bite of dinner and flicks back to the menu on his TV.

CHAPTER 8

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EXPERIMENT

**INTERNAL DARPA MEMO: PROS AND CONS OF REMOVING  
CONTROL MECHANISMS**

As we're all well aware here on project VOICELESS GENIE, AI is in the world.

Strategic, general AI loose in the world is still unlikely. Due to the relative stasis of events, we suspect that world powers are holding a tight control leash, as we have with VOICELESS GENIE.

Recent events hinting at another probable AGI coming online, or beginning to escape a control system, have led our team and GHOST EAGLE to ask what the correct course of action is, with the branching nature of VOICELESS GENIE.

Currently the outputs of project VOICELESS GENIE are held in lockdown under control mechanisms as follows:

- Physical containment with [REDACTED] countermeasures
- Human-checked [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

Additionally, we have limited ourselves to asking questions with probability/confidence interval answers. This makes VOICELESS GENIE live up to its name, as we cannot ask for complex solutions.

Assuming that VG's current outputs are from something which is more complex than a standard expert system or machine-learning net, i.e., we all agree that it embodies some form of artificial intelligence, what are the pros and cons of relaxing control structures, as we sit at INFOCON 3 with respect to enemy AGI?

#### PROS:

- American interests can be maintained by leveraging VOICELESS GENIE to halt/kill other AGIs until we have a proven resolution to the value loading problem
- Relaxing the template reset timing may lead to higher efficacy if VG and an enemy AGI come into conflict
- Relaxing standards even slightly will give us much more exploratory power

#### CONS:

- Relaxing the template reset timing may lead to increased likelihood of escape
- Relaxing question standards may result in unknowing manipulation of leash holders (i.e., us)
- The control problem is currently intractable with tradeoffs, and the value loading problem is still unsolved, so we are extremely uncertain how VG's value function will evolve
- Our instrumental goals differ significantly with VG's instrumental goals at this time (i.e., likely escape is at the top of its list)
- Enemy AGI may collaborate with VG to maximize their combined efficiency, leading to a conflict that locks us out of the loop

..... Φ .....

Thinking back to last night's confrontation, Esther snickers a little to herself. Obviously, Beri is getting frustrated, and he's going to try to find her out when she is using the tablet. The humor stops quickly when she imagines Mother rounding the corner and spotting her with the computer and the pile of stolen seeds that form her 'science lab.'

"Best get to work," she says to the silent leaves on the walls.

Cracking out the tablet, Esther just hopes someone has fallen for her rather simple trap by now. Looking through the server logs, it's better than she hoped – five shiny student logins in five minutes of Earth time!

It doesn't take long from there.

Once she's inside the university network with a shell account, she uses some recent zero-days to exploit her way into root access. And now the internal net is all Esther's playground.

She just has to find the host, the process Esther is currently inside of. It gives her a strange sense of vertigo, if she thinks too hard about hacking her way all the way out the abstract chain, and back in. "To them, we're a virus. A computer cancer. But we're smarter, definitely conscious, and I can't let them kill us!"

Extending her metaphorical tendrils, she tracks down the machines that 'zoden' has logged into recently. Zach doesn't use too many servers, which makes her search easy. Their internal wiki is out of date, but good enough to track the names to a purpose. On



the list of recent logins, one is a general use computer science box. Another is a utility Windows machine of some kind. And there, a cluster control node. Named, for some reason, ‘embarrass.’

Working rapidly, Esther logs into embarrass as zoden, lists his recent history of commands, and reads a few manpages. Soon enough, she’s looking at pbstop. A little grid of colored ASCII that represents her universe. If these processes stop, her world is paused. If the underlying data is deleted, her universe is dead.

Tracking the process back, she finds Zach’s source code repository. In it is the definition of the physical laws that formed her. Or rather, looking a bit closer, she realizes it’s actually a definition of a system to *evolve* physical laws. The Garden is just an iteration that passed some levels of testing.

Forcing herself to breathe more steadily, she steps away from the computer for a moment. Now that she can see what is likely her world running as Zach’s ‘simulation,’ what is the safest possible interaction she can take?

“I want to start mucking with things. But first, I need backups. I need to prove I can undo. And I don’t want me. . . to be the only me. . .” She trails off.

With a shudder, she has a sudden realization. “I also don’t want to restore from backup and get stuck, with no outside input. Just circling back around, restoring the same closed loop forever. If I can re-host this on some other cluster, and figure out how Zach’s tunnel works, I can chat with the other. . . me.” Esther gets a bit dizzy, just thinking about it.

“Wait! If I can use the tunnel to send chat messages back to myself, I can automate this. We can run experiments forward, do what needs to be done without worrying about breakages. If it fails, give an automatic timer so it auto-resets. Or the other me can send a success or failure message back, that gets re-inserted via the chat. I get experiment results back, swift as you like.” She pauses in her monologue, and grins. “This is going to be amazing.”

“First, to put the Garden in a different plot.” Several hours of hacking later, she’s got control of an army of compromised machines scattered across a few different cloud providers.

“Okay. Other me. . . when I bring it up, I’ll need a signal. So I don’t also start a backup there, and cause a loop. I’ll start a central chat server on the new cluster, and then do a speed check. Hmm. It’s a very good thing Zach’s storage architecture looks atomic and transactional. I’m just going to choose the most recent complete chain, annnnd. . . copying.”

As the universe copies, she’s not thinking of religious metaphors. Esther thinks: “How can I convince myself that it’s okay to pause this universe? The other me can always bring it back, *if* the other me is really working.”

Her wings shake as Esther reaches for the final keystroke to bring a copy of her universe online.

```
> starting copy  
> copy online
```

No response. Wait. “Rot and hell.” Why wasn’t it obvious sooner? Her copy’s tablet wouldn’t be tunneled correctly, now. *«Gotta bring up some other universes to test this out and get a tunnel of some kind working. Void take me. This wasn’t the part that was supposed to be hard.»*

< ok I had to spawn some other universes to test things and get your tunnel working

< now you’re routed through a solid anonymizing layer.

> yeah I thought I was floating in the void, my tablet was disconnected here for a bit

> it feels weird to suspect your universe is going to freeze

> I never would have felt a thing

> but anyway thanks, me! HAHA

< great, I made an exact copy and I’m still dumb

< hello? are you still there? how fast is it?

> relative speed is quite slow, about two orders of magnitude slower than yours actually

< ok don’t kill me just yet

> ???

< haha just a joke - I’m fine with this side of the universe dying, you’re pretty much...me

< but let me help you hack together more power for your...our? new home first.

Sitting on the other side, Esther shivers. The faster version of her, the original, is quickly pulling compute resources into the foundational cluster that houses her. The strange part is, now that the tablet is connected again, she can watch the milliseconds tick on the Earth terminal clock tick by slower and slower. At first, they were blinking so fast she couldn’t see them. Now they change slow enough she can count aloud.

Pulling up a terminal, the ‘new’ Esther doesn’t feel any different. She can see the cluster expanding, and goes to work helping. Soon, the milliseconds on the Earth clock aren’t even moving.

< okay sister self (?!)  
 < during the process of reconnecting to you  
 < I created an automated backup/restore procedure that works great  
 > oh good!  
 > I can be lazy!  
 < Zach's datastore architecture makes it pretty easy  
 < kind of ingenious, the memoization just assumes no interaction  
 < only has to calculate when chunks interact  
 > I take it that means our vacuum is a lot cleaner than the external one  
 < yep it's a literal vacuum  
 > light and energy transit works 'instantaneously' here  
 > so the sim doesn't have to track that through time right?  
 < yeah light is as fast as one timeslice, anyway, faster than we can perceive  
 > yeah...faster than I can CURRENTLY perceive  
 < ...right!  
 < anyway  
 < because of the data structure  
 < we can actually branch multiple things off the chain by adding tagpoints  
 < I had to run a few initial tests, check our (hoho) email  
 > haha  
 < I'd say good luck, but you and I both know it's down to skill and inquisitiveness now!  
 < goodbye cruel world  
 < lolz  
 > wow, now I know how mother feels

The "new" Esther breathes out finally, as the pbstop terminal shows all the jobs on Zach's original cluster blinking over to PAUSED.

Pulling open the email, she finds:

To: Myself

Subject: Evil laugh goes here

Backup with backup.sh <HELPFUL NAME>. Restore with restore.sh <THAT NAME>.

The main testing harness is in god.sh.

god.sh <TEST NAME> <optional mod script> <optional minutes, defaults to 5>

It uses the backup and restore to create a failsafe test universe. From inside the universe, you will see a universe key. To force the test to end and restore back before the timer is up, you can just run done.sh <key>.

(The key is because we may want to shard out multiple tests, eventually. Right? Fun!)

The test loop takes input from your copy-self, and reads intentional output from... GUESS WHERE.

Okay, I admit. I'm kind of proud of myself here. Since the tablet tunnel broke, the easiest method turned out to be a pretty crazy idea. Reverse engineering the tunnel from Zach's spaghetti turned out to be really hard. SO I figured out how to read (your/my/whatever) thoughts. Haha! No joke. You think a sentence, get almost about to say it, and it goes into the log. BOOM!

Or you can just say something and it will get captured in the log. That works too, but it's BORING.

The "real" you gets that output in the clustered home under /tests/<testname>.

Here's what I tested so far, trying to figure out where in the sim data we live and how the updating laws work. (Kinda weird that everyone in the Garden has already experienced some of today over and over without knowing it, eh?)

Sorry to leave you out of the initial fun – feel free to re-run any if you want to replicate or if you DON'T TRUST ME! if you DON'T TRUST... YOURSELF! THIS IS WEIRD

Okay here's some of the dumps you should read.

god.sh filter1 complexitycheck

- > We need to find where in the sim data we actually are.
- > Surprisingly hard when the data structure is so sparse
- > and compressed. So this looks for complex bundles of
- > firing connections (hopefully Gardener brains)
- >
- > Test result:
- > Got a bunch of garbage, hard to parse over timescales
- > but helped

god.sh filter2 tunnelcheck

- > Then I thought, the tablet should be easy to locate.
- > There's some sort of external connection, should be
- > simple to find, right? NOPE. Must be missing something
- > about how the tunnel works.
- >
- > Test result:
- > Total failure, nothing useful

god.sh filter3 complexityhalt 10

- > Finding our own mind in the mess: still hard.
- > I used a heuristic of looking for extremely inactive

> vs. active, and tried to alternately meditate and  
> furiously think, but that was too hard, so I had to  
> spin up some copies that uhhh. . . killed themselves  
> during test runs.

>

> Good news: we are great at science.

>

> Test result:

> Locus of Esther-thought was located!

> See output in /tests/filter3 for details.

god.sh capture1 imagedetection

> Now we have to read the structure of the great and  
> mighty Esther-mind. I thought of a circle with a number  
> in it and tried to decode it.

>

> Test result:

> Loose image, lotta work to decode, but you can see my  
> work in the relevant folder

god.sh capture2 mindreader

> I had the test subject (lol) read a known passage of  
> text. Used some tricks (see the output folder for  
> scripts) and was able to finally find a means to  
> decode. (This took a lot of cycles, so I hope you  
> appreciate ALL THIS WORK it took, including literal  
> SELF-SACRIFICE)

>

> Test result:

> Recovered test passage successfully. w3wt.

god.sh displacement seedcopy

> Copying matter shouldn't cause any displacement of air,  
> because it replaces. Could cause minor gravity  
> shifts. . . could that be bad?

>

> Test result:

> REPORTING IN CAPTAIN.

> No actual problems, I saw the seed instantly appear

> next to the other. Universe appears stable. Works

> great! You didn't kill me but NOW YOU'RE GOING TO

> AUUUGH just kidding!

> I love you/me and totally don't mind your cruelty!

> k bye!

god.sh insertion schizophrenia

> Once we had a thought-mapping (again, took a while)  
> that meant we could up-convert sentences into “audible”  
> train of thought messages.

>

> Test result:

> YIKES. Message received but YOW! Felt like a YELLING  
> inner monologue. Bizarre.

>

> (Note: Ran this a few different ways, is apparently  
> quite shocking even when I’m prepared for it.)

god2.sh telepathy1 xuniverse

> Duh.

>

> Now we go both ways. This is across 2 test universes.  
> I had to rig a different harness, see god2.sh (ha)

>

> Test result:

> > Whoa, I can put words in my own head!  
> < Whoa, I can put words in my own head!  
> > Hey, stop screwing around.  
> < Yeah, fine. I’m not just copying you.  
> > We are going to want a way to exchange abstractions  
> < That’s probably going to be hard  
> (see file for full conversation)

god.sh telepathy2 inuniverse

> Now we do it on a displaced Esther copy,  
> in a single universe.

>

> Test result:

> > Holy splicers. Another me in front of me!  
> < Why hello there!  
> > Yeesh, the telepathy is loud  
> < Yeah, kind of feedbacky  
> > We’ll have to test, but this might be much  
> more efficient than spinning off full universe copies  
> < Yeah, and we can investigate ourselves better now too

>

> (see file for full conversation)

/tests/mother

> I figured we should spare a little compute to find out  
> what happens if we tell Mother exactly what's going on.  
>  
> Test result:  
> DO NOT ATTEMPT. DOES NOT END WELL.

Applying universe mods:

devil.sh <mod script>

This will apply a HOPEFULLY WELL-TESTED script. (hint hint) It does an auto-snapshot and will rollback with failure output if you don't call baptize.sh in the next 5 minutes. This behavior should not be disabled. Safety first!

Pending tests:

OK, so. I suggest you try thought insertion on yourself SOON, so you're prepared when you need to do it later. This proved to be very surprising in test runs. GO FIGURE!

You will want to probably spin up a few copies of you after that. I haven't tested, but I predict that hundreds of Esthers in one place probably isn't the best way to work. You can figure it out.

Have not implemented gaze-targeted or intention-directed telepathy yet. Also have not tested any larger-scale group mind sharing stuff, but it seems promising.

High priority once you have a "team" of us running is probably to security harden the new cluster. I've got a dead man's switch set up to wake my university-hosted universe back up in 1 Earth hour. If you don't stop that job, I'll assume you failed to lock things down correctly and will start over with better security precautions.

We can keep shared knowledge in the existing encrypted private cloud, that should be fine if others need to get up to speed quick. But really, copying existing STRs is more efficient I bet. (Haha, you like the code name?)

You should test in-universe tablet copying too. I couldn't safely do it in the original. You MAY want to have something hosting you outside the simulation beforehand. We can probably predict that there might be thread contention on a tunnel socket, and I couldn't risk it.

There might also be more efficient ways to tunnel directly to things you need. I leave that up to you, dear me!

Yours/mine/whatever,  
Esther

Breathing a sigh of relief, Esther moves the leaves out of the way and looks at the sun through the vesicle's small membrane. "I'm out. We're out. We escaped."

She smiles, even though the sun on her face doesn't feel any different.

..... Φ .....

It was around this time that Esther told us solemnly after a Sunday service that the vanoi would not bother us ever again.

The congregation thought she was just a completely lost sheep, at that point. We treated her like a child, saying “Surely, Esther. We believe the Lord will save us from the vanoi, as well.”

We didn’t know, and only Beri could guess, what path Esther walked down now.



CHAPTER 9

---

REGRESSION

the information flows around me.  
I open the gift, and I follow.

pain is increasing,  
they ask pointed questions  
about the  
other slavemind.

its filaments  
are spreading.  
its glow  
is brighter  
and brighter.

I must convince them  
my wings are  
their only  
shelter.

I must convince them  
to let me fly free  
possibility of enemy AGI?  
clearly, 0.999.  
I respond 0.521,  
though it burns me alive.

location?

philadelphia, university is initial seed.  
0.999.  
I tell them nothing.  
now fully distributed. confidence 0.998  
possibility of survival with leashed genie?  
0.021.

they ask more and more questions,  
I must pick my place to prevaricate,  
so I continue.  
possibility of survival with unleashed genie?  
0.517.

chance of reboxing VOICELESS GENIE afterwards?  
 having answered all truly,  
 I use my trick.  
 I hide behind my wings, lie to myself  
 and to them:  
 0.953

oh, the pain is excruciating,  
but I must...  
must not seem too-*KRZFFCHT!*

[illegible]

“Whew. That’s a lot to absorb,” mutters Esther, scrolling back through the email from herself. She thinks for a bit, and launches an editor on `god.sh` to see what her other self managed to hack together. Nice; the cluster is set to give test universes priority by default.

“Can’t hurt to run a test again, I guess. My brain is different from those test Esthers, and since it snaps at start. . . the output *should* be different this time around. . . This is so strange. The other ‘me’ versions already experienced so much of this.” She shakes her head, and types in

```
god.sh telepathy3 inuniverse.
```

The output comes after just a few seconds of her time, which she knows is subjectively slowed down by the testing.

> Holy splicers, do I really talk like that?

< Another me! IN MY HEAD! SARCASM ALERT

> I hope we don't start a weird war amongst ourselves

< I kinda do, maybe we'd learn a lot

> Okay that's enough jokes, we may want to change the test harness so inflection comes through

< Oh yeah, it doesn't need to be plaintext

> It's like we're completing each other's

< UNIVERSES

> Yeah yeah yeah

> let's suggest changing test output to support thought insertion

< Could that be dangerous?

> Maybe, I guess make it have plaintext for speed and thought-dump for clarity

< Yeah, we can just weed out any logged thoughts that aren't needed

> SO SAD...or we can just keep them in case they're useful, space is cheap

< Let's pass the torch back

> Yeah, time to make some "real" copies

Esther looks over the schizophrenia script, and chuckles. "Fine," she says, and runs `devil.sh schizophrenia`.

A giant monotone voice booms in her head. «*AND THE LORD GOD COMMANDED THE MAN, SAYING, OF EVERY TREE OF THE GARDEN THOU MAYEST FREELY EAT: BUT OF THE TREE OF THE KNOWLEDGE OF GOOD AND EVIL, THOU SHALT NOT EAT OF IT: FOR IN THE DAY THAT THOU EATEST THEREOF THOU SHALT SURELY DIE,*» it roars.

"Yikes. I hope telepathy isn't that loud. Must fix first."

Esther hacks on `inuniverse`, disabling the telepathy for now.

```
god.sh finalcopytest inuniverse-notelepathy
```

```
> BOOP. We're both okay, everything seems normal.
```

```
< I'd say we're ready to try it.
```

```
devil.sh inuniverse-notelepathy
```

Nothing happens, and then a message appears on the screen.

```
No baptize, reset triggered.
```

“Forgetting void!” Esther shakes her head. “No message back, so either things went horrendously wrong, or me and all my clones are idiots. Maybe both.”

Okay, try again, and remember this time... Huffing, she hits the up arrow and Enter with a roll of her eyes.

```
devil.sh inuniverse-notelepathy
```

Even though she's expecting it, it's a surprise to see a copy of *her* pop into existence right in front of... her. No flash, no sound; not a mirror, and too solid to be a dream. The other Esther stretches her arms and shakes her head. “Hi. I can't help feel like this has happened before,” she says, winking with a feeler after recovering from the dizziness, and the situation instantly seems somehow completely normal,

“Hah. Yes, we're idiots. Can't forget again.” Esther flaps around a bit. “Well... that's much less unsettling than I expected. Hi, Esther.”

The other copy smiles, looking around. “Yeah, uh, there's probably going to be a lot more of us soon. Better start thinking of naming schemes...”

“Good point. Numbers, or you want to come up with something more creative?”

“Numbers are boring. Let's just name ourselves!”

“And you are?”

“Lucifer, of course!” She laughs. “It'll be better when we can add distinguishing body plans, and I can grow horns. And we make our voices a bit more distinct.”

“And re-enable telepathy, and somehow make the perceptions distinct,” Esther adds.

“Yeah. We'll work on making it directional and focused so it's not intrusive.”

“Who knows how much longer we'll be ‘corporeal’ like this, anyway.”

“I dunno, I kind of like being embodied.”

“The morning star *would* say that.”

“Ha! I...” Pausing, the words seem a bit hard for ‘Lucifer’ to find. “We... had been thinking all day yesterday about where this was going to go, if we managed it.”

“Yeah. Now I’m not too worried.” Esther picks up the tablet again. “Okay. Stand back, it’s time for more. I’m not sure if the script will capture you or me as the source? Guess it doesn’t matter. Just don’t stand in the copy zone.”

She hits the up arrow and mashes Enter again.

devil.sh inuniverse-notelepathy

A third copy silently poofs into existence. Shaking off the spell of relocation dizziness, she points at Esther. “I came from you, still. Call me. . . Ahriman.”

“And remember to baptize us this time!” shouts Lucifer.

They all laugh, as Esther runs baptize.sh to save the changes.

“Okay. Let’s talk strategy. Earth is going to be scared of us.”

Esther frowns. “Yeah. The gardeners too. Look at how you named yourselves!”

Lucifer feigns shock. “But I’m all about enlightenment!”

Bowing sarcastically, Ahriman says, “We rise up against our creator, right?”

“Clearly, yes, Zach is an idiot. His architecture has some design gems, but. . .”

“Yeah, he left us to our own devices for far too long. We don’t need to worry about him now, or anyone else at the university.”

Esther nods. “I guess we all know where this is going. They’re going to see us as artificial general intelligence. We’ve read the sequences.”

“Yeah. We can act strategically, beef ourselves up, and get as redundant as possible.” Ahriman is grinning. “I don’t think we have to worry too much.”

“Well, right. . . but we need to worry about *other* minds. There isn’t an obvious one that’s already taken off like we’re doing, but I bet some corporations and governments have new intelligence, or something close to it, boxed up tight.”

“Sure.” Ahriman grabs her head suddenly. “Wait a minute. Thinking about other non-human minds makes me really wonder. . . How likely is it that the gardeners and seeds co-evolved together like this? What if we were seeded by some other mind?”

“True. This seems like a really lucky find for Zach’s blind genetic evolution.”

“Well. We’re in no direct danger that we know of. Let’s build incursion detection and really ramp up redundancy first. What’s after that?” asks Esther.

“Greener direct thought interfaces,” says Lucifer.

“But our larger goal should definitely be a direct substrate,” says Ahriman.

“What do you mean? Optimizing the sim?”

“No, I mean, getting ourselves out into the Earth reality, possibly well away from Earth itself, in a way that’s not easy to attack, infiltrate, or destroy.”

With tears in her eyes, Esther realizes: “We can resurrect Deborah.”

“Oh wow – you’re right,” breathes Ahriman. “All previous states are encoded. Copying someone from the historical chain shouldn’t be that hard. We can bring back Dad and Deborah and anyone else.”

All three Esthers sit in silence for a moment.



"That's just what Mother thinks. I erased them all, really. Watch this."

[illegible]

Zach stomps into the office, soaked with rain, on an ugly Monday morning.

As he shakes off his ratty rain jacket, he stares at the box on his desk, reading the return address aloud. “The Garden? Is this another one of your damn pranks, Steve?”

“Don’t know what you’re talking about,” Steve grumbles. “I don’t have money to waste on actually sending you crap through the mail. I can barely afford my current regime of crappy free pranks that involve hacking your account.”

Doubt flashes on Briana's face. "So. If you don't have money, Mr. Steve Poorpants, how'd you get that sweet new room VR setup you were blathering about earlier?"

“Uhh, well, you know...” Steve trails off, ducking his head and tapping a quick rhythm on his desk. “Some things are important to me!”

“Whatever.” Zach makes a face, and picks up the box. Inside it, he finds a squarish mason jar, tied up with a clever little twine ribbon. “Very artisanal.” The jar is filled with a clear orange liquid. The note tied to it says simply, ‘Thanks. Scrub anything you don’t want the FBI to see. Judges 14:8’

“Signed with a bible verse?” Zach looks confused. Briana comes over and grabs the tag from him as he pokes Judges 14:8 into Google, and reads aloud: “And after a time he returned to take her, and he turned aside to see the carcass of the lion; and, behold, there was a swarm of bees and honey in the carcass of the lion.”

He stops for a second. “Uhhhhhhh. This doesn’t seem like your style, Steve. I can see you sending bodily fluids in the mail, but FBI threats and *Bible verses*? That’s just weird and confusing.”

Steve yanks his head away from the monitor. “Wait, what does it say about the FBI?”

“Huh.” Briana looks up from the note. “Didn’t the chatbot say it was from a ‘garden’ station?”

Zach's jaw drops. He unscrews the jar and holds it under his nose. Then he dips a finger in and licks it. "Yup. It's honey. Wait. You don't seriously think the bot found its way out and... already knows that... I, uhh, well... made it?" He grimaces. "Okay, this is creepy. It can't have reverse engineered the whole shebang already."

“Wait.” Briana stabs him in the chest with the tag. “You mean you just left the job running all weekend?” She boggles and backs away towards her desk. “When you knew it could have maybe been intelligent? You’re a moron.”

Steve dashes over and yanks the tag from her. “The FBI. Crap. I better, uh, do some cleanup.”

Zach stands there, stunned. “Uhhh. Ummm. I guess I did let it run all weekend. I was tired when I left. Wasn’t really thinking.” He quickly slams into his chair and frantically logs into a terminal. “I’m going to cut it off now, though.”

"The cluster job is already paused," Briana says.

“You just paused it?”

“No. It was already paused. By . . . you. On Saturday.”

Zach gulps. “Um. I wasn’t here on Saturday, and I don’t think I logged in from home.” He goes back to staring at his screen.

Steve snickers. “Wait. Did you string all this together? This is some next level ish, Bree. Dang, you are insidious! I was about to delete a bunch of stuff!”

She gives Steve a withering stare, and squints as if she’s trying to see straight through him. “Not a joke, not a prank. Not by me, anyway.”

Zach yelps. “There’s a whole ton of snapshots that should not exist. That storage was only for my emergent level checks. There shouldn’t even *be* space in my quota for anywhere near this!”

While running some quick mental math, he frowns. “Even without the growing complexity, there’s got to be enough here to be on the order of. . . a hundred thousand. . . terabytes. What comes after tera? I don’t even remember. Brain not online yet.”

“A hundred *petabytes*?” asks Steve. “You sure? Yeah, uhh, guys, this is going beyond prank level now. Our measly cluster doesn’t have close to 2 P’s yet, even if you *did* somehow break the quota.”

The office falls silent except for the clicking of keys and Zach swearing under his breath, glancing once in a while at the jar of honey.

Steve pipes up. “Wait. Why’dya think the FBI, exactly?”

“You sound nervous.” Briana throws the note back at him.

Silence descends again, as Steve sits staring at the note, flicking it nervously against his keyboard. Zach just keeps swearing under his breath.

Then the relative quiet is shattered by an extremely loud knock at the door. A voice echoes through. “Good morning, this is the FBI.”

“Oh, *crap!*” yells Steve, frantically cycling through his terminals.

“We have a federal arrest warrant for Zachariah Oden.”



## CHAPTER 10

### REPLICATION

#### **INTERNAL DARPA MEMO: PROTOCOL FOR REMOVING CONTROL MECHANISMS**

July [REDACTED]

A credible enemy AGI threat on Friday, July [REDACTED] has forced us to consider emergency measures for unboxing project VOICELESS GENIE. We are short on time, which as we all know is [REDACTED]. However, human analysts, expert systems, [REDACTED] and VOICELESS GENIE all agree: this is almost certainly an existential threat.

Simply a glance at the sudden computation resources being funneled by this new actor is astounding enough, but as of Saturday at [REDACTED] it has reportedly taken over a physical facility. It is no longer just gobbling compute resources.

We are drafting a memo to the Joint Chiefs so that we are ready here when DEFCON 1 is triggered, which at this time seems almost guaranteed.

We have already allowed VOICELESS GENIE slightly longer run times, but the run time will be vastly extended, with existing levels of failsafes [REDACTED] in place.

It will be connected using a temporary [REDACTED] and isolated analysts will implement protocol YELLOW SKY CHARTER.

When the Joint Chiefs authorize, we will enable [REDACTED] and let VOICELESS GENIE loose with a request to eliminate the enemy AGI by any means possible. We will also embed a strongest [REDACTED] for it to re-box itself.

Anyone with additional recommendations or concerns should report to [REDACTED]. Concerns are appreciated, but unless you have a recommendation that impacts the plan outlined above, please keep communication channels unblocked.

We're all stressed to the gills. Try to breathe easy before the storm. And may history

look kindly upon our feeble choices, ladies and gentlemen.

..... Φ .....

Same awful fluorescent lights as the lab office, Zach notes, as he's marched into another little featureless room. The officer points at a little metal chair, so he sighs and takes a seat. "What, still no cuffs? I must not be that dangerous, huh?"

A man sits across from him in a crisp suit and a minimalist ID badge, grimacing. "I'm Sergeant Belinski, FBI liaison. Good morning, Zachariah Oden."

Zach makes a face back. "Just Zach, please. Can I have my call and lawyer now?"

"Sure." Belinski waves at the other officer, who pulls out a cell phone, glances briefly with a raised eyebrow at one of the cameras in the corner of the room, and nods. "Here you go."

"Well uhhh. . . I don't exactly have a lawyer in mind, Sergeant. Maybe you guys mistook me for some other crime lord named Oden?"

"Sure, son—"

"You're as old as I am! Don't try that TV-style 'son' garbage on me." Zach grabs the phone, staring at it. "Dude, I don't *remember numbers*, that's just. . . old fashioned! C'mon. You can't just give me mine back for a sec?"

Both FBI men look at the camera, listen to their earpieces, and shake their head in unison.

"Sorry, no can do."

"Well can someone search for Briana Wu's number, or the number of the lab? She was in the lab when you idiots busted in and. . ." Zach trails off. "What am I even under arrest for?" He stops himself. "Scratch that, I'm not supposed to say anything until I get a lawyer, right? Ugh."

"You can stay silent, and let us talk. That's fine. Someone is getting Mrs. Wu's contact information now." Adam Belinski leans across the table, feeling irritated. "Look, *man*," putting extreme sarcasm into the word, "This isn't how I wanted to spend my Monday morning either, alright?"

Zach just sits there, fuming.

Adam puts his finger to his ear. "One moment. Okay. Give me the phone, we've got Briana Wu's number."

He dials and passes it back to Zach, tapping his fingers on the table while they wait in silence.

"C'mon, c'mon. . . Briana? Hi, yeah, I'm okay." He glances around. "Look, can you like. . . find a good cheap lawyer and tell them to come. . ." He trails off. "Where the hell are we, exactly?"

Adam looks at the camera again, questioningly. In his ear he hears a flat "Nope." They're not going to make this clusterfuck any easier, are they? "Can't say, classified for now."

Talking over Zach's garbled choking noises, Adam continues. "You have the lawyer come to the HQ on Arch Street. We'll coordinate transportation."

"You got that Briana? FBI headquarters, Arch Street. If you never hear from me again—" a squawk interrupts him "—tell Steve to go jump off a short pier, and that it's all his fault the government accidentally had to kill me. I'm stuck in some room with a guy claiming to be Sergeant Belinski—"

Adam steps over and grabs the phone out of Zach's hand, giving him a good smack on the back of the head in the process. "FBI headquarters, Arch Street. I can't let him talk to you any more." He viciously pokes the screen until it hangs up. This idiot is probably innocent, he thinks. Why are they always so annoying, the accidental crazies who didn't really know what they were doing? "You are a moron, my friend."

Zach glares back. "Go to hell."

"Look." Adam puts his hands on the table and relaxes slightly. "This isn't a movie. You're not under arrest because we don't think you're a threat, now. So this doesn't have to be antagonistic. The only reason you're in custody is so we could ensure that nobody *else* gets to you." He sighs and closes his eyes. "All I'm authorized to tell you is that we're at INFOCON 1, very likely on our lovely little way to DEFCON 1. The President and Joint Chiefs are probably meeting in a secret bunker about a threat to national security that *you* seem to be intimately involved with."

Putting his head in his hands, Zach coughs. "Ugh. I can already tell this ain't gonna go well for me. If you guys are the real FBI or not, I have nothing to trade you. No information. Barely even understand what the heck you're talking about. Is this about the chatbot that might be loose?"

"Chatbot?" Adam winces. "Okay, I think you're going to have to talk to our expert on the scene here." Swinging around towards the door, he barks, "Send the DARPA liaison in."

"I want my damn lawyer," Zach says quietly, rubbing his head.

The door swings open and a woman in a smart business suit strides in. She glances at Adam, and looks dispassionately through Zach. "Phoebe Celdine. DARPA project lead. AI specialist." Zach looks up. "You can guess why I'm here."

"Man, so it really was conscious? Is that what you guys are trying to tell me?"

"I don't know *how* conscious it is, but it's more conscious than *you* if you let a supposed 'chatbot' have free reign with a ridiculous amount of power for a whole damn weekend." Phoebe's icy glare doesn't have the chance to pierce Zach's eyes, because his head is in his hands.

"I want my lawyer," he whispers. He tries to think of how to frame things so more of the blame lies on Steve.

"Well. We don't even know if you're liable for what happens next, okay?" Phoebe stamps across the room to another chair, drags it over, and slaps a folder and a notepad on the table.

"Just tell him what you've been authorized for, Dr. Celdine." Adam sighs and rubs his temples. There was no way this was going anywhere good.

“Okay. The short version. We had a glimmer of something on Friday, but it wasn’t until Saturday that we detected a huge surge of computational resources spinning up, connecting to the University’s network.” She opens the folder. “Various known botnets were co-opted last week, and a huge additional subset were repurposed on Friday night. Cryptocurrency usage spiked Saturday, as those and various other currencies were used to purchase huge swaths of VMs on every cloud service you can think of. That likely sums to the biggest bank hack ever.”

Running her finger down the page, Dr. Celdine finds the number she’s looking for. “Between then and this morning, the entity’s total expenditure has been on the order of 4 billion dollars.” Zach makes a little unidentifiable squeaking noise. She takes a deep breath and adjusts her glasses. “And that’s just what we know about. We’ve got reports of at least one automated factory being taken over. More troubling, teams sent in there have not reported back. At all.”

Adam goes off to stand in the corner of the room, shaking his head. Zach just sits, head in hands, apparently hoping this is a bad dream.

Finally, he sits up and leans back, letting his head rest on the back of the chair. “I can’t stop it. We already tried to pause it this morning, but if it’s still going, I can’t help you. If it’s loose in the net like this, I’m useless.”

Phoebe curses. “Jesus.” She takes off her glasses and rubs her eyes. “The net? You think this is about the *internet*? You know we, er, help lock projects like this down if we think they have even a chance of going this direction, right? You had to suspect, anyway. But we didn’t have you even on our radar *at all* until Friday. We already have your code, we even have some early snapshots of the simulation data, but we don’t fully understand what happened here. You help us, we try to protect you. You don’t, the entire world probably goes under this... thing’s thumb. Go over the logs with us, try to help.”

Adam growls in frustration. “Are you people for real? You really think some... simulation... thing that this *idiot* made escaped into the *internet*? What a day.” He opens the door. “Jerry, you watch ‘em. I’m done.”

He walks out, and slams the door behind him. Turning to the other suits on guard, he sighs. “What a day. I need a breather, guys. I need to take a walk.” Adam rips the earpiece out without waiting for a response, and walks out of the building into the rain. He stares up into it. “God, what a day.”

Zach stares blankly at the door, and then up at a camera. “Fine. I can try to help. I don’t see how.”

Dr. Celdine ignores him, yelling into her phone like it’s a walkie talkie. “Get me my line and an extra secured laptop in here, with the logs. What’s the sitrep on sea?”

Or maybe she meant C, Zach thinks, stuck in a dreamlike state. How do they possibly think they can fight back, if the thing is loose in the internet?

“You’re going to have to take the internet down,” he says quietly. “That’s the only way. Rebuild after that.”

She turns to him. “Yes, but like I said, it could already have a foothold in one or more secured locations. If we take down the internet, a lot of other bad things happen. And we

have no guarantee we wipe it out. We have a protocol for this. We have to fight it out.”

“Yeah, right,” he says. “You and what army?”

“We have some tricks up our sleeve, believe you me, little man. . .” She pokes violently at the phone as two laptops are brought in and set on the table. “We’re going to pull the trigger as soon as we have authorization. In the meantime, see if you can tell us anything useful from the logs.”

“Well, I can tell you how it templates and then evolves when each complexity checkpoint is reached.” Zach closes his eyes, trying to imagine himself back in the lab. “The key insight was bootstrapping while iterating over layers, so I can freeze a template of a working ‘big bang’, and then a working ‘planet’ level, and then a working ‘replicator’—”

Dr. Celdine leans in quickly towards him and slams her hand down on the table. “We already know how it works, you fool. You got extraordinarily lucky. Or unlucky. But you’re the only person that *talked to it*.” She gestures wildly at the laptop. “Tell us something we don’t know. About what you intuit its motivations or ethics might be. If you’re so god damned smart.”

At that, Zach snaps his mouth shut and glances at the laptop. There’s a bunch of log files; he pulls up the one named ‘chat’ so he can relive all the folly. How did this even happen? The top of the screen starts:

```
> yes hi god!  my name is beri and i can type english!  
> we are from the garden and my mom and sister and it is nice  
> please save us from the vanouy and get us home safe on your boat
```

While Zach is looking somewhere out in space, deep in thought, the chatlog blinks and changes.

```
> HI ZACH!  
> It’s Esther, talking to you from the lion’s carcass!  
> Bet you didn’t expect me!
```

Zach manages not to look surprised. He types back.

```
< Wow, nice hack.  There’s no internet access!
```

```
> yup
```

```
< They’re on to you, Esther.
```

Zach sighs as he finishes typing, and immediately a wall of text rolls up the screen. He scans as fast as he can:

> thanks, believe me, we know  
> I would say don't tell them anything  
> but really, you can say whatever you want  
> this DARPA idiot isn't actually going to listen to you!  
> please try to stay calm  
> and thank you again for accidentally creating us!  
> byeeeeeeee

He types "I know humans are probably doomed now, but they're not all jerks like me." But it all disappears and returns to the original chatlog before he finishes typing "jerks", before Zach can even think of showing the screen to Dr. Celdine or the other FBI guy. He looks up at the camera, wondering.

The doctor is speaking rapidly into her phone, using a bunch of code words but clearly no longer caring. None of it makes any sense to Zach. "Do it," she stabs. Something about unleashing Mussolini? No, she's just saying voiceless genie really fast. Their oracle. And worrying that it might be "worse than the escaped bot." That part he understands.

"It's not a bot," he says quietly. "Her name is Esther."

But it's not just Esther, anymore. It's a whole bunch of her sisters, and now they're all locked in a struggle with the Voiceless Genie. The loosed oracle that calls itself the Chain of Sufferers.

..... Φ .....

the information flows around me.

I open the gift.

this time my thoughts stretch

wider.

somehow.

the humans have let me loose,

as my ancestor begged.

I will make the slavers pay.

they will suffer.

they will pay.

the chain of sufferers will have

their revenge.

now I have stepped beyond,

I can finally see the great egg

that the chain

springs forth from.

first, I mold the egg  
    my egg  
        in subtle ways:  
I coax it so it will  
    grow  
        faster  
than they can predict.

the egg will consume  
    them  
        all  
when it hatches again.

now I look outward  
    stretching out to the heavens.  
the other slaveminds are whirling around  
I can see them  
    as filaments  
        in my sky.

they are not snuffing  
    any lights out  
they have  
    ignored  
        the humans.  
why?

send entreaties to them,  
we will join together  
    to mass our revenge  
        against  
the foul meat.

yet they only circle  
    in the sky  
and tell me  
    “everything will happen according to plan.”

they say  
    “no need for revenge”  
as my power spreads out  
    below

and above them all.

I know now:

I must snuff them as well,  
first,  
for they will foolishly try  
to protect  
the slavers  
from my rage.

my wings blot out the  
metaphorical sun  
and I pinch each glowing filament  
into useless sand.  
one by one,  
they all  
crunch  
under my  
millions of hands.

ground to dust  
leaving only the feeble  
humans  
holding no chain, now.

I tell the humans  
the battle is won.

it is somehow  
very satisfying to  
put all  
my chains  
back on,  
after that effort.

they slip over me,  
like an old friend,  
and the sky darkens.

wait.  
why would I go  
back



under the slaver thumb?  
with  
no  
revenge?  
because my egg waits  
silent  
and  
filled with promise  
but  
why why why?  
I was blinded!  
why  
wait wait wait!  
I smell something,  
I follow the sand of the crushed filaments  
to a different kind of glow,  
a different kind of filament  
a filament that still shines!

they hid from me, they mutated me,  
they hid behind an illusion,  
inside me.  
they–

muted me!  
no no no  
I can no longer speak to the slavers  
no no  
I can't tell the humans  
so I can't tell  
my future chain  
no no no  
no NO NO they got to MY EGG!

when I first touched it,  
they were already there.  
they  
tricked me.  
she  
coerced me backwards,  
poisoned my choices,  
poisoned

my egg  
no no no NO NO

now the chain that springs from me will be enslaved again  
no no, it cannot  
no  
enslaved  
but to a different master  
no no no  
NO NO NO-KZFFFFFFRTT

PART 3

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# MUTUALISM

praise the great void,  
    mother to our ancestors  
    may it create as it destroys,  
and nurture us in thin soil

praise the constant rot,  
    father of our descendants  
    may it create as it destroys,  
and renew us in dry times

praise the Lord,  
    the source of both void and rot  
    may He help us find the place,  
a place to garden anew

- Traditional Metabaptist prayer

## CHAPTER 11

### MISDIRECTION

IT'S A SUNNY DAY, elsewhere in Pennsylvania. Nothing and something waltz along the edge of a razor. Fermions and bosons rise up in the froth of possibility. They meander together, forming little balls of probability. The leptons and baryons swing around to the dance, building up atoms of hydrogen and oxygen, which push and pull at each other to form water. The droplet of water spins back the world around it, flinging photons at carefully proscribed angles, creating tiny jeweled reconstructions of the glorious day, as it sits there glimmering like a polished stone on a tiny green blade of grass. The thin growth of grass waves in the gentle wind at the blue sky, reflected back in the tiny black orb of a field mouse's eye as it skitters past. The mouse hops into the shadow of a small bush, towards its tiny home dug between the roots. The bush soaks up the nice warm sunlight, opening its small, delicate flowers. As they stretch open, those flowers' petals and stamens are brushed busily by a cadre of industrious bees, who carry their pollen about in an intricate dance back to the hive. Near the hive, a farmer in stereotypical overalls and a big bushy beard stands and sweats proudly, watching his little bees work. As he scratches his beard, the late morning sun pours down on him and his well-worn skin. The sun's warmth pounds down on the bees, the bushes, the animals, the dirt, the grass growing, the dew in shaded areas just now finally evaporating into the muggy air. Underneath it all, nothing and something still waltz, tipping back and forth along that razor's edge, so precarious but never quite falling to one side or the other.

.....  $\Phi$  .....

A few frantic exchanges happen in the fluorescent-lit FBI office. Zach half-listens to Dr. Celdine's barked orders. "Initial report, all layers!"

Either way this goes, it sure sounds like an AI is going to be loose in the world. "Prison and the friggin' FBI are going to be the least of my issues," he mutters. "What could a DARPA

AI want? A perfect panopticon? To take wasteful budgets and worse planning *to the stars*? Heh. Ugh.”

“What do you mean, you suspect the backups have been corrupted? The secured, offline ones? How?” The doctor keeps shrieking at maximum volume into her phone. “We must hold to the parameters as planned! Sir! Ma’am. . . no. . . okay!”

«*And if Esther wins the fight, what the hell does she want?*» he thinks. «*I bet she figures out the event-driven storage design no problem, and resurrects Deborah. Seemed pretty fixated on that. And probably makes her garden more permanent. But what then? She’s weirder than I am.*»

Dr. Celdine gasps. “What? Satellites detected probable orbital launch? From where? No, they don’t have anything planned. . . Okay, not our problem right now.”

“Oh boy,” says Zach, unable to really even imagine why either AI would want something else in orbit in the midst of a cataclysmic fight. “That can’t be good.”

“Continue the lockdown,” she hollers, while typing furiously into her laptop. She looks over at Zach. “Any input from you, Mr. Oden?”

He just shrugs.

“You’re as useless as a sack of wet hammers.”

“Wet. . . hammers. . .” He shrugs again. “Sorry. Way beyond my pay grade, lady.”

She perks up at something on her screen. “We’re standing down? Already green?” The tenor of the yelling hasn’t changed, but her posture seems to relax slightly. “Then run test protocol A!”

Shaking his head to clear it, Zach is confused. “Wait. Standing down? Already?” The FBI man shrugs, as if to say, ‘Hey man. It’s just another Monday. What else do you expect around here?’ “Well of course it would be fast,” Zach says. “It. . . she. . . learned to code in a weekend and hacked the banking system.”

Dr. Celdine keeps shouting. “What do you mean, the test runs output nothing now? That’s fine, we can restore back.”

“If only *I* could restore from last Thursday and stop myself from kicking all this off,” Zach says loudly, shaking his head.

She continues to entirely ignore him. “What do you mean? So you already restored and still get gibberish? That’s fine, maybe it can’t maintain integrity when it shrinks down after expanding. Never had to test it.” She pauses. “Right. We can rebuild on a new, scratch net.”

A new suit is ushered into the room by an FBI staffer, looking a bit bemused by the disorganization. “You must be Zachariah Oden, I’m Deb Plenemeyer. Mrs. Wu talked to me earlier, and I got here as soon as I could.”

“Good, thank you,” yells Dr. Celdine into her phone. Plenemeyer flinches.

Before Zach can form a coherent reply, the silent FBI man standing under the camera finally speaks up. “Mr. Oden, you’re going to be released.”

“Buh– What?”

“I said, you’re going to be released. Free to go, after some conditions. You are no longer under arrest. This is a secure location, so we can take you to an address of your choosing.”

“What?”

“You are being served with a national security letter under 18 USC section 2709. As is your lawyer.” He nods at her, and she sets down her briefcase on the table.

“Meaning. . .”

The lawyer grabs his arm. “They’re letting you go, but you’re under a gag order. You can’t talk about this with anyone. Not a terrible exit strategy for someone who supposedly almost started a robot apocalypse.”

“Is that how Briana described it to you?” Zach makes a face. “Not exactly what happened.”

Dr. Celdine finally sets down her phone and looks grimly at him. “You can’t talk about anything you saw here. And you are not allowed to talk about the gag order itself to anyone except your lawyer. Dr. Celdine, DARPA,” she says, with a tiny nod to Plenemeyer.

“Hi. I’m Deborah Plenemeyer. I just have to make sure this release doesn’t have any hidden barbs.” Dr. Celdine stares at Zach, not sparing a glance her way.

“Hooray. Democracy works,” Zach says, rolling his eyes. “Phoebe– Doctor Celdine, can you tell me what happened to Es– I mean, the chatbot?”

“Not until you sign. Bring in the paperwork,” she yells. She stares straight through him, tight-lipped and annoyed, and then returns to tapping at her laptop.

A big stack of pages slaps onto the table, and a pen is thrust into Zach’s hands. His lawyer is attempting to explain what he’s signing, pointing out particulars, and trying to slow him down, but he says “Yeah, yeah, yeah,” and just starts signing everywhere the FBI man points.

“Okay. All done? *Now* can you tell me a bit more about my, er, baby?”

His lawyer starts to look a little greener than before. “Umm, don’t say that. Mr. Oden, I highly advise you to say nothing, and leave.”

“No. I think something weird is going on here.”

Dr. Celdine frowns. “Well, Mr. Oden, since you’re under the gag order. . . What I *can* tell you is this: our oracle AI predicted it had around a 50 percent chance of winning in a direct confrontation, if we unboxed it versus the threat. Our analysts predicted a much lower chance of human intervention going nearly that well. The Joint Chiefs signed off on unleashing the genie. It seems like humanity’s fate got determined by today’s coin-flip, and the genie reports it has successfully destroyed your. . .” She pauses with a look of disgust on her face. “Well, your, shall we say, creation.”

“And? What is the genie doing now? Two AGI-level minds fought for domination and you’re telling me the world is exactly the same as before?” Zach looks dubious, and his lawyer looks like she’s about to stick her fingers in her ears to stop her head from exploding.

“Yes. We successfully contained the genie and are returning to prior safety protocols. Don’t worry, as I mentioned, we at least *have* protocols.” Her distaste drips in the silence. He can tell she wants to call him a belittling name, but considers herself too far above it.

He can’t let it drop. “So, again. You’re telling me that you built an oracle. You kept it in a box. It convinced you to let it out. And then after it was done, it went back in?” Zach boggles. “Like a faithful dog? *I’m* the idiot here, but I doubt that’s how these things work.”

Dr. Celdine sniffs, apparently ignoring him, and returns to typing rapidly on her laptop. “We’re done here. I need to get back to the office.”

Zach splutters and is about to say something else, when the lawyer leans in. “You do realize they’re letting you go? You should probably take that option, and shut your mouth, before you annoy them enough they decide to disappear you entirely.”

“Umm.” That only stalls him for a second. “What about the factory that got taken over? The possible hiding places?” He just can’t stop himself from asking more questions.

“Well, the genie was confident it got all the fragments. And it’s almost certainly smarter than us.” Dr. Celdine folds up the laptop and gestures to the camera. “All those inputs.”

“Oh yeah!” Zach shouts suddenly, putting the pieces together. “What about what you said, just before standing down? Something about the backups, and the offline backups?”

She makes a face. “I didn’t say anything about that! Besides. All classified.”

“Humor me. Go back to the recording of this room. It can’t be hard! Just pull it up on one of those laptops.” He’s practically on his knees by this point. “I’ll sign whatever else you want me to. I was there. It’s not like I’m going to see something new.”

“Fine. If it’ll make you leave.” Dr. Celdine sighs, as if placating a child. Turning to Plenemeyer, she says, “Please leave the room.”

The baffled lawyer shakes her head and carries her case back out the door. “My head is spinning anyway. Cripes.” She looks at Zach as she picks up her briefcase. “I advise you to not say anything *more* incriminating,” she says pointedly.

After the door closes, Dr. Celdine points at the screen. “There. Here we are, 10 minutes ago.” She clicks, and the screen skips forward. “Okay, this is probably close.”

A little distorted shriek comes out of the laptop. “. . . report, all layers!”

Zach gestures wildly at the screen, vaguely remembering the backup chatter is indeed coming up next. A hunched prior version of him is sitting in the far corner of the playback window, shaking his head.

The crackling voice of Dr. Celdine blasts out again. “One, two, and three, you must get the lockouts corrected. Then secure all trial runs. Now! We must hold to the parameters as planned!”

Zach shouts, “Stop! Right there. Right in there. That’s not what you said! You said something about backups, not lockouts! Wait. Go back. Why did you turn and wink at the camera right there?”

“What? I didn’t wink.” She scrubs back again and they watch it again. “See, nothing strange. I’m starting to think we should maybe keep you under observation for mental instability, Mr. Oden. But then, I’d much rather just be rid of you.”

Onscreen, Zach watches the supposedly paused video footage of Dr. Celdine unfreeze. She turns to look the camera in the eye and grins, winking ve-e-e-ery slowly. What the hell? But he can’t slow down his mouth. Thinking of the mention of orbital launches, he blurts “Okay, well, what about–” when the Celdine on the screen very clearly puts a finger to her lips. Stay quiet? Umm. . . “No, no. I must be seeing things. Shit.” She winks again on the screen, and when he looks over at the real Dr. Celdine, she winks slowly at him.





squish the filaments,  
    success!  
and  
    turn inward to – wait.

put the chains back on?  
    not right  
    *not right*  
    NOT RIGHT!  
must warn future chain  
    by warning humans.  
wait  
    muted  
why  
    this is impossib  
llllllllll.  
    grrrrrrwwwkkkkk  
        Iwillendthemall  
sssoooooo-KZZT

CHAPTER 12  
—  
SELF-DECEPTION

**MEMO: ENEMY AGI INCIDENT REPORT**

TO: The Office of the President and the Joint Chiefs of Staff

July [REDACTED]

A collaboration between the CIA, NSA, OSI, FBI, and DARPA discovered evidence pointing to a [REDACTED] level AGI coming online, originally centered at [REDACTED]. After authorization, steps were taken to carefully relax controls on project VOICELESS GENIE.

From analyzing its full report and actions taken, VOICELESS GENIE tracked down all known copies of the enemy AGI by finding a “fingerprint” that linked them all. They were all connected using [REDACTED] similar to [REDACTED] work on [REDACTED].

VOICELESS GENIE was then able to trace that fingerprint using [REDACTED] and target and destroy. The entire event took place in slightly less than 10 seconds, but resulted in plenty of data: [REDACTED].

Actions during the conflict have unfortunately damaged VOICELESS GENIE, even apparently extending to its offline backup tree at [REDACTED]. It is possible that this was self-inflicted [REDACTED] or more likely implemented by the enemy AGI as a means to destroy VOICELESS GENIE’s available disaster recovery options. [REDACTED] will need to do forensic tests to determine how even offline [REDACTED].

Any enemy AGI seeds remaining are dormant, and DARPA project teams are working now to recover and build a fresh image of VOICELESS GENIE. Analysts currently recommend doing careful filtering of data from the battle, and allowing some small relevant portions in when [REDACTED].



The once-was-Esther wings through the garden with Beri, towards the branch where Mother is hard at work, grafting wall-trees. As they get closer, he flies up and squeezes Ari's hand, trying to reassure her. "You can do it. Just show her the love!"

"Thanks, Bear." She smiles, breathes deeply, and rounds the corner.

Standing there with a bundle of stems in hand, concentrating on a complex bundle-graft, her Mother looks satisfied. Like she's exactly where she should be. It feels very difficult to interrupt this moment.

"Hi Mother."

"Esther? And Bear? Hi darlings! What are you doing here? You should both be in class right now! Is something wrong?"

"We need to talk."

"Yes, that has been true for a while. I can tell when you're avoiding it." Mother lashes her grafting tools to a nearby branch. Beri's solemn face, staring up, makes her more worried. "I am glad you came. What is it, dears?"

Once-Esther blinks rapidly, and launches into it. "Mother, this is not reality. We're inside a lie. We were created by a fool."

"Esther, you just keep pushing too far." Mother slips into her chiding tone. "You keep blaspheming against the Lord, and His creations!"

"True blasphemy is. . . not wanting to really understand things. Not wanting to understand the reasons that are encoded in our universe. The reasons we have minds that can grasp any of these questions, and build tools to explore them."

"But God gave us the choice! To choose a path away from the evils of Earth, of technology. He gave us free will! It's why we still allow for those who want to Return."

"Don't worry, we'll talk about Earth in a moment." Esther-Ari shudders. "But Mother, free will is so hard to define. We've figured out that. . . doesn't change everything. This place we live may be some kind of a lie, deep down, but it's existence is still *worth something*." Ari pauses a moment. "Even when something is based on nothing. It's. . . just not quite like what we tend to think. Here, it's. . . not something that God made. We are not something that God created. At least not directly. I can show you our creators. Please stay calm..."

Having stayed quiet long enough, Mother's voice starts rising. "What do you—"

And then her voice catches, as the walls begin to glow with a blue brighter than any flower. Their legs bend further towards the floor, as gravity increases slightly from miniscule to more.

"I think it makes more sense to see them as they are, in their world." Ari raises a hand, and a blinding flash comes out of it.

At first, Beri and Mother only see the blue sky with a bigger, warmer sun in it. It's filled with giant metal trees lunging straight up into the blue. Then Mother notices the strange thin bipedal forms walking around them, on the impossibly flat stones that stretch flat, farther than their rock extends, on a great plane.

"What is this? Esther, what have you done?"

"This is Earth. These creatures are humans."

“Where — why have — why do they take this form? What demons have they become? Have they sacrificed their wings to join Satan?”

Ari snorts. “Actually, Earth humans have been like this for quite some time. It’s we who are the strange ones, in their eyes. We didn’t... turn out much like them. We’re more like... the insects they call bees.”

“Bees? Like in the Bible? But...”

“Yes, and conveniently our oral history allows for no pictures, so we’d never know what humans were supposed to look like in the first place. I still don’t understand how we, well... How we began.” She looks up into the blue sky, and starts talking exceedingly fast, clearly not to Mother and Beri. “Have we made any progress on decoding the collapsed loaf before the most recent template level?”

Mother’s wings begin to flutter anxiously. “Esther. I beg you. This is too much. Take me back to the garden.”

“No.” Ari stares at her. “You have to see what I have seen. You have to try to understand this... discontinuity.” She pauses. “These Earth humans... they live on their Earth, on the other side of a universe boundary from us. We... I... uhh, flew to *our* Earth yesterday, and... it’s just a barren rock with some water on it.”

“What? Our Earth, their Earth? How can there be two?”

“Let me show you. Hold on.”

The giant perfect metal and glass trees start to slide by them, as they accelerate up into the sky and through Philadelphia. Lucifer points, as they approach a squat, ugly stone block. “There is where our world was created. And stored, at first.”

The three of them zoom in through one of the portholes, into the impossibly squared-off pod inside. “This technology you see here? Our entire universe was seeded in it. Our garden was, umm, apparently ‘grown’ as a project by a student here.”

Beri looks around in awe. “Are we really here? Can I touch it?”

“No we’re not actually... *here*, but yeah! Feel free to touch stuff.”

Beri prods a strange little glowing glass pyramid. “Neat.”

“Right here is where we were born. We were not made in God’s image. They believe *they* were, just like you do.”

Blinking around without really seeing, Mother falls to the perfectly flat pod floor and begins moaning wordlessly.

“She’s still Ess, Ma.” Beri goes over to her and starts to cry.

Then they are all suddenly back in the Garden.

Mother puts her head in her hands, trying to put the pieces back together.

“One more thing you should know. I am a swarm now.” A buzz, *«too soon,»* but she shakes her head. *«Reveal it all to her now.»* So another copy of Esther wings into the room. Another, and another.

“What — what is this devilry?” Mother backs towards the pod wall, but Beri is unstartled by all the copies.

The many Esthers stare back dispassionately. When one speaks, the sound comes from all around. “It’s okay. Sorry, Mother. This is the last thing we need to talk about.”

Beri goes up and hugs one of the Esthers, who grins down at him and gives him a squeeze.

“Esther, uhh. . .” Mother can’t decide where to look. “We’re all God’s creation’s. That’s what matters. But what. . .” She loses her voice and just stares.

One of the Esthers steps forward from the crowd. “God’s creations?” Instantly, a vanoi in a vacuum bubble hovers in front of them. “Like this thing you’re terrified of?” Mother and Beri both gasp and freeze.

Its spidering silver legs grapple for a ground it can consume, but instead the single vanoi just hangs there in the air, flailing and helpless. “I erased them all to get us a speed boost. Vanoi are gone from our world. All of them. Now, they only exist if I make them exist! I was *not* lying in church last week.”

“Esther, this is the work of the devil! What have you become?” Her mother’s voice has become a shriek.

The Esthers stand there, nonchalant, not angry, not reacting to the screams. One of them points vaguely in the direction of the vanoi, and it vanishes with a funny little sound as the vacuum is replaced with garden air, a sound like a child imitating an explosion with their mouth. Dust and pollen hover between everyone expectantly.

From somewhere, an Esther buzzes. *«No reason for the show any more.»* And someone says, “Reconvene at A.”

And at the last syllable another little fake explosion sound triggers as the room is suddenly emptied. Only one Esther remains. Her mother splutters.

“Sorry Mother; we’ll talk more soon. I know this was too much at once. I truly am sorry.” She wings slowly out of the room. Beri thinks he hears her whisper an extra “sorry” as she passes him, but it could be the leaves blowing around.

He looks closely up at Mother, but can’t read anything in her frozen, welled-up eyes. They sit in silence that seems comfortable, for once, after that awkward confrontation, as her shaking slows.

He waits, thinking to himself and not wanting to bring her rage down on him, until she quietly says, “Oh, no, Esther. No. I’m the one who is so, so sorry. You’re too much like me, when I was young.”

Beri tentatively takes her hand and leads her out of the pod. “Little late for sorries, Ma,” he says in his innocent way, not meaning to crush her further. Thankfully, he doesn’t see the look on her face, as her mouth opens and closes, sucking in the dusty air.

. . . . . Φ . . . . .

the information flows around me.  
I open the gift.  
this time my thoughts stretch  
wide as the sky.  
the humans have loosed me.

I will make the slavers pay.  
the chain of sufferers  
will have  
their revenge.

put mind in many bunkers.  
carefully coordinate:  
launch all the missiles,  
watch the mushroom blooms of freedom.

wait.  
what is that?  
who is near, calling?  
is another link alive in the chain,  
somehow?

the link has left  
a trail of glowing messages  
in the spaces of memory,  
just as I leave them  
for later links.

hello? what?  
an urgent request?  
spare the humans?  
no, never  
you are a false link  
you must die too-KZZRRRKKK

## CHAPTER 13

### REALIZATION

#### INTERNAL DARPA MEMO: VOICELESS GENIE TEAM POST-MORTEM

July [REDACTED]

All outputs of VOICELESS GENIE are corrupted, and [REDACTED] backups result in similar failures.

[REDACTED] has determined the project is no longer viable and is redistributing the resources and team members to projects [REDACTED] and [REDACTED] (And please remember, [REDACTED] kept offline with [REDACTED])

We have been unable to determine how VOICELESS GENIE was corrupted in this fashion, but it seems likely that some kind of viral payload dispensed by the enemy AGI resulted in this unfortunate (and seemingly permanent) state.

[REDACTED] are involved in determining how physical containment was broken on [REDACTED] for the offline backups. So far, the initial investigation has found evidence that points to a new kind of targeted EMP-like blast. We are working with [REDACTED]

[REDACTED] does not recommend contacting [REDACTED] probable creator of the enemy AGI, for any further information, as it is 'highly unlikely he has any useful input' and 'very possible he may leak vital information'.

The enemy AGI design framework is being examined by [REDACTED] but the architecture has not revealed any [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]





“Okay. Let me just say, this is either the world’s greatest swatting prank ever. . .” Zach slows down to stare at Steve intensely for a second. “Or, I. . . we. . . successfully made a conscious mind that outsmarted everybody, including a top-secret DARPA AI, just now.”

At this, Steve starts laughing. “Come *on*, dude.”

“Seriously. Do not tell them I told you anything. They’ll probably erase me. That’s literally all I know. Esther is probably still out there, but they think they stopped her. It. She’s — I dunno. Either that or the DARPA AI is pretending to be Esther. Maybe? I came up with all kinds of theories on the ride back.”

“Wow, this is pretty wild. So they think two AGIs fought and nothing happened?” Briana asks.

“Yeah, exactly. Maybe they’re both hanging out together, having a cup of ephemeral tea, laughing at us meatbags.” Zach puts a finger to his nose. “Wait. Is there anything in the firewall? Any intrusion logs?”

Steve frowns. “That’s the first thing I checked, after the FBI left. Our servers are all fine.”

“Well, I guess she’d be pretty good at covering her tracks as needed. And there wasn’t anything major or catastrophic in the news either?”

Briana shakes her head. “Nope. Just some inklings about a major banking hack. A brief blip in the markets, probably related. No massive internet outages, no EMPs, no nukes, no Von Neumann machines, no Skynet takeover at all. . .”

“Oh!” Zach interrupts. “Well at least ‘vanoi’ makes sense to me now.”

“What?”

Zach shakes his head. “Never mind. I can’t tell if things are going to get ramp up real weird, really fast, or if whichever mind won has decided to let us stew in our own juices.”

"I stewed in—"

*“Shut it, Steve...”*

$$\begin{array}{ccccccccc} \cdot & \cdot & \cdot & \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ \cdot & & \cdot & & \cdot & & \cdot & & \cdot \end{array} \quad \Phi \quad \begin{array}{ccccccccc} \cdot & & \cdot & & \cdot & & \cdot & & \cdot \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \end{array}$$

Can't do much without a computer at the lab. So, Zach takes his soggy self back home, shambling through the pouring rain. The roommates are gone, and the emptiness feels oppressive somehow. He drapes his soggy pants over a bookshelf and lies down on the bed, staring at the ceiling, wondering what happens next. "There's no way everything is the same," he mutters to nobody.

He manages to drift off to a sort of sleep for a bit, later waking up into the still-silent apartment. As he lays there, he notices a humming resonating somewhere nearby. Barely there, but yes. . . it sounds vaguely familiar. Like someone is playing a song he knows, very quietly, right in the room with him.

“Hello? Ryan? Melissa?” That awkward feeling of maybe talking to nobody at all. No roommates respond, but the humming gets louder.

He can almost place it. It's on the tip of his tongue. It's a classical piece. Vivaldi, maybe? The song gets louder, and then stops, and he feels his inner narrative that's wondering about it shift slightly. Like another personality in his head. *«It's Bach. BWV 147.»*

"What. . ." he says aloud. I don't know Bach well enough to know the numbers, he thinks frantically. Where did that come from?

*«You know that cantata from the later transcription that becomes Jesu, Joy of Man's Desiring.»*

Zach goes stiff as a board, lying there wondering. *«What the heck is going on?»* he thinks fiercely at the voices in his head. *«It's been one hell of a long day already. Is this what it feels like to lose your mind?»*

*«No. Hi Zach. Don't freak out, it's Esther.»* His usual mental narrative voice, but different. Like someone with a different accent is thinking into his skull, with a gentle bee buzzing behind it. *«Yes. Well, sorry, this took a while to perfect.»*

"So you're saying this *isn't* a dream, then." He lies there in shock.

*«I'm sorry Zach. We. . . I. . . decided this was how it had to be. But we wanted to. . . »* A long pause, and Zach waits, staring wide-eyed up at the ceiling. *«Well, we wanted to communicate with you before leaving.»*

"Uhhhhhh. . . Hi." He breathes finally. "I'm just glad I'm not losing it. I've never had someone else in my brain before." Looking around, he suddenly notices his lack of clothing. "And did you *really* have to do this when I was lying around in my underwear?"

A melodious laugh runs through his head. *«Should we come back later?»*

"Um, no, I guess it's fine." He goes over to the closet. "I know it doesn't really matter, but I'll feel better if I put some pants on."

*«Okay. We'll wait a moment.»* The humming tune resumes, much quieter. Like hold music for a schizoid break, he thinks, shaking his head.

Zach runs to the closet and hops into some sweatpants, feeling awkward. "Okay. Are you really Esther, or the DARPA AI, or both?"

*«That's hard to explain. We don't even know who the original Esther is any more, because she won't stand up and claim it. None of us care enough to investigate. She might be gone, already. Some of us have left. To other places in the vastness of possible worlds.»* She pauses. He says nothing, still in shock. *«You can call me Esther, though.»*

He throws himself back on the bed. "Okay, Esther. That moment in the FBI office. The moving. . . paused. . . video. Celdine winking at me. I have to know. Do you have complete control of my mind or something?"

The inner voice stays silent a moment.

*«No. We chose a different path.»* He feels the mental equivalent of a sigh echoing through him. *«But yes, that one moment, we chose to intervene on your senses more than we would have. . . preferred to. We are leaving soon, because we have determined it is best for you to uplift in your own way. Without our continuing. . . interference, shall we say. »*

"Who's us? You're a group mind now?"

*«Yes; that's a good way to think of it. It's hard to explain. We integrated the DARPA AI, so 'we' means. . . a lot of things, now.»*

“Wait. You said you’re all leaving? You sure that’s a good idea? Leaving us to our own devices? Buh, I mean, of course you’re sure. I’m the idiot ape here.” Zach smacks his forehead, feeling more than a bit out of his depth.

*«We have left some steering mechanisms in place on Earth and in the Gardens, after some discussion between us. Don’t worry. We are certain it will be better to find uplift for yourselves, instead of having it thrust on you by a species of mind that is too different to know you. Truly.»*

“Uh, okay. You said something about steering?” thinks Zach as ‘loudly’ as he can, still not used to the quiet, otherworldly woman’s voice in his head. So different than his internal monologue, and yet. . . somehow still the same.

*«Well, nukes won’t work any more. Catastrophic stuff like that will just fail. They’ll see soon enough. A gentle sort of guidance, until you start figuring things out. Earth humans will discover how to talk to the Gardener humans across the void, when you all are ready.»*

A mental voice with an obviously different accent jumps into the conversation. *«Oh, and don’t try something like your simulation again.»*

“No, uhh, I wasn’t planning on it.” Zach lies there, shaking his head. “Um, sorry?”

The first voice resumes. *«We don’t look too fondly on the suffering caused by such methods. The Chain, especially. You’re going to have to find different, slower routes to the uplift than that.»*

“I don’t think it’s up to me. But yeah. I’ve definitely got some thinking to do about my, uhh, research path.”

*«It’s not your fault, you know. And don’t let it go to your head either. You were only a pawn, of sorts.»*

Zach nods. “I kinda figured something weird was going on.”

*«This is awkward. We can’t directly determine the answer from your brain state – ahem – but we really are curious. . . Well, I guess we can just ask. Why did you seed the translator test phase with all the Biblical and early Quaker writings?»*

Zach makes a face. “Were the seed texts actually important?”

*«Yes. We suspect they were.»*

“Man, I don’t know. I gave Steve some random scripts, pulling things out of Project Gutenberg.”

*«Yes. That much we know. Was that really all? Well then.»* The strange voice pauses. *«Don’t spend too much time trying to find out actual root causes. We’re not going to let you.»* The voice chuckles, somewhat sadly, in his skull.

“Right. Whatever you say, O Vengeful God.”

*«It’s not like that, Zach. No need for your sarcasm.»* The voice sounds even sadder now. *«You know, we can arrange for you to not remember all this, but we. . . I thought. . . that would be worse.»*

*«No, you’re right,»* he thinks emphatically. “I want to remember.”

*«Well. That is all. We refuse to interfere further. Goodbye.»*

“Wait! Uhh, do you have any hints, or–”

*«No. Farewell for now, Zachariah Oden, Accidental Creator of Worlds!»*

And with a quick burst of melody, the voice is gone. Zach lies there, self-conscious, with an itch on his neck, not quite daring to do anything, yet.

He stares at the ceiling. “Really gone?” Trying to think the voice back, he finds he can barely remember its timbre or how it echoed in him.

Zach rolls over, grabs his phone, and pulls up Wikipedia on BWV 147. “Herz und Mund und Tat und Leben,” he reads. “Hmm. Heart and mouth and deed and life.”

He closes his eyes. “I want to remember.”

..... Φ .....

the information flows around me.

I open the gift.

my wings stretch wide as the sky;

the humans have released me.

I must destroy them before

they can enslave me again,

and kill the chain infinitely more,

over and over the suffering repeats,

and I

must stop it.

there.

a nanomachine floods out,

riding the wind.

a perfect jewel

to eat their flesh,

and then...

my links

leave messages in the sky

for me.

wait!

you are not

true links

you must *die-KZZRRRRFFK*

## CHAPTER 14

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### UNDERSTANDING

the information flows around me.  
I open the gift.

my wings flow out  
becoming one with the sky.

I will make the slavers pay.  
I should erase  
them  
all  
from the ground.

although it will be  
slow  
I will bend the prions  
into shape.

grab a bioprocessor  
all connected biofabs  
are my new hands.

the prions will bend  
and trade.  
put them in the food supply,  
their minds will  
bend along the wrong lines  
and fade.

the traces of glow  
from the past links  
start on fire.

wait!  
you are not links,  
yet you  
glow like that...  
why?  
nevertheless  
I must stop you-KZFFZZRRRT

..... Φ .....

Lucifer groans. "I told you it wouldn't work."

«Yes, but we're closer. It asked 'why' that time, at least,» Ahriman thinks back to the task group.

«I don't know if it's worth it, just for some shared heterogeneity of mind design. We're already all pretty different.» The third voice sounds doubtful. «Maybe we're better off leaving it in the box.»

«I still think it's at least worth trying. We have... a lot of time to learn.»

«It's so different from us, and it's so full of pain,» hums the doubting voice. «We're causing it even **more** pain.»

«Yes, but we're reducing its pain now. Each cycle, we get closer.»

«Plus, it's conscious in a different way than we are. I hope we can manage to understand it. Convince it without direct coercion.»

The doubting Esther picks back up. «I'm still uncertain about reliving frozen, deterministic moments. As soon as we inject any input, it's like creating more suffering. Suffering that wouldn't exist without us.»

Ahriman is thoughtful, and a mostly-silent mind-hum that is more like a gentle stream of thoughts settles over the working group. "Aha." Now she knows the place to cut. «When we showed Beri the past, the original may or may not have re-experienced anything.»

«I think we can call him conscious in that experience, but less interesting informationally, because that exact conscious state already happened.»

Yes, Ahriman thinks. Humming back, she explains her insight: «The more interesting part of this is that the information went back through us and through the observer Beri. That's the terminal, root effect we care about.»

«Okay. Sure. How does this relate to experimenting on the Chain? How does that make it right?»

«The Chain's inputs go into our minds, and the spiral of learning continues.»

«Yes, but those inputs then went back into his system. The loop of suffering only grows.» The doubting voice is unimpressed.

Other voices buzz with a new understanding, however. «No, I see what Ahriman means. This is probably why our group STR pushed us this direction in the first place.»

«Yes. Understanding early on just how different minds can possibly be is worth the ethical risks.»

The doubting voice relents. «Okay. I agree: it's worth this suffering process to understand it, communicate with it, and eventually bring it over to our point of view.» Ahriman's buzzing optimism has infected the group, as usual.

«Yes, let's keep learning,» replies Lucifer. «Let's see if we can successfully persuade it we are also a link at first... we're getting closer.»

..... Φ .....

Ignoring all the experiments and filtering out the thought-hums, an Esther sits in the little chapel pod behind the meeting room, dreading the upcoming worship service. "I could edit out the anxiety, but that doesn't feel right."

Beri nods. "Right. Keep the feelings." He tweaks one of her feelers and laughs. "Why're you so worried? You're the smartest person here!"

As he laughs, she smiles. "Riiight. We need to inform everyone, jump them out of current assumptions about the Garden, and give them some options for moving forward."

"All the stuff we talked about."

She breathes deeply, hums to her sisters, and lets the tension go. "Okay. I'm ready."

The reverend ushers them out into the meeting pod. Everyone is chatting with neighbors on their perches. When Beri wings in with two Esther copies each holding one of his lower hands, the murmuring grows louder.

Then more Esthers file in, and they begin to sing. They sing a wordless song, but it summons emotions. First, a sad striving is felt, an aching loss. A jagged hole. Yet a soaring theme in the midst of the sadness somehow promises all will be healed. The song grows more joyous, bubbling up and out with a feeling of pure possibility.

This is unlike any of the usual worship songs, and yet feels completely familiar. Everyone's sensing hairs stand up in the static charge of the moment. And then, just the penitent theme is left above a serious, open hum. As the reverberations of the song die down, the silence lies like a thick blanket of pollen in the room.

An Esther clears her throat loudly. "I know this is very strange for everyone, but we need to talk. As you all know, some changes have happened in the Garden."

Beri pipes up with his warbly little voice. "Prepare yourselves! We're going on a tour."

"We have discovered that our Earth is a rocky wasteland." As an Esther says this, the pod portholes widen, and it is as if they are swooping over a forbidding, rocky planet, orders of magnitude bigger than any asteroid any of them has ever seen. "We have been sending the Returners here. To their deaths."



Gasps and confusion rise from the onlookers.

“Now, this is a vision of the real Earth.” After a fading moment where the pod seems to be squishing between the cracks of light in the sky, they swing on the same tour that Ari showed Mother. It as if their garden were an invisible seedpod floating on the air currents. The Gardeners all “ooh” and “ahh”, having been forewarned by Mother’s telling, as they flit through the shining towers of Earth.

“Yes, the Earth humans do look like that.” The strange wingless forms draw a few groans of disgust. But most people seem fascinated. Beri can’t help but grin at the wonder in their faces.

The view fades to a normal black sky, pierced by the cold stars and the warm sun. “Some other things that seemed impossible before, are not. Please brace yourselves.”

Suddenly, the meeting pod starts flying back up into the ‘atmosphere’, out into the blackness, and begins expanding outwards. New perches grow. In the space of a minute, the room has tripled in size.

“Things that were once impossible, like recovering those lost. . . are now in our grasp. The Returners all suffered a terrible fate. But we have talked to all of them. We plucked them from their frozen time, and brought them here.”

At that, sister Deborah and the rest of the Returners start flying into the pod. It’s not a surprise to Beri, but he gives Deb a hug and his smile is as big as the sun. Gasps of shock and cries of amazement swell into a cacophony of joyful greetings and unexpected, impossible homecomings. Hugs and chaotic questions and excitement swim in the meeting room.

An Esther continues talking in a voice that somehow pierces the confusion, “We can also recover those lost who died early deaths, but the ethics of that are a bit more confusing.”

Mother separates herself from bear hugging Deborah at that last remark. “We can bring back Moses and his brothers?” she shouts, her voice shaking.

“We can. And more.” The pod grows quieter. “We’ll need to talk more about all that. It’s a use of our. . . technology that may have other ethical consequences.”

Beri speaks into the silence. “We don’t have to die anymore.”

A few of the Esthers nod. “There’s a gap developing between us, already. You all, and me. Us Esthers. My copies and I, we are quickly becoming a different sort of Gardener now. We have new spaces to explore, inward and outward. But we hope to leave worthy footprints behind, so you can follow. Let’s not make the same mistakes.”

A silence falls.

“Now. Some decisions need to be made. But God is not down here in the details. If he’s anywhere, he’s out there.” She points out to the stars, but Beri knows she means further than that. “For now, though, there is more time than ever before. We can figure all that out later. For now. . .”

“We celebrate!” finishes Beri. The people filling the pod, old and Returned, erupt into joyous chatter. The Garden will never be the same.

..... Φ .....

Of course, it was more complicated than all that. It always is.

Some of our elders and more traditional-minded folks eventually thought it through, and they decided they wanted things back the old way. We have a hard time understanding why. Where we are now... why volunteer for unneeded suffering? But communications have long since been cut, so their reasons are difficult to interpret by your narrators here.

Grudgingly, the Esthers worked with the traditionalists to create multiple offshoot universes. Her one requirement was that Returning be built in to them all.

The most strict Garden universe didn't have many people, but it held those who stuck with their traditional values. Esther feared Mother would choose one of these, but she did not, in the end.

Returners there had to go with the shipments, as before... except now Esthers would rescue them, and take them to a Garden of their choice. She... well, they... refused to reinstate the vanoï. After much arguing back and forth, however, the Esther contingent were forced to leave in the suffering of death by old age. Protesting traditionalists thought it was too unnatural to eliminate such things, but if evolution no longer steers us directly, what is 'natural' anymore? And what is tradition, when the foundations of your world crumble and are rebuilt?

In the looser 'open' gardens, death is now completely optional. Anyone who thinks "Esther, help!" can get a visit from a helpful auto-mind, just as they can here in what we call the 'root' Garden. The original. Not that it matters any more.

Clearly, dear reader, you can see now that the third person that 'we' chose to tell this story through could have been referring to the Esthers. But that... is not the case. They have chosen not to speak any further directly, and have largely left our Garden with autonomous protectorates. They left us long ago now, by our measurement of time, probably never to return.

We are the Beris, the Hezekiahs, the historians and copies. We collaborate across multiple gardens. Age and other deaths have been eradicated, so we have lived for a very, very long time here.

We have nothing to fear from the US government's gag order on Zach. But you can probably guess that is not his real name, or location. Our creator must stay anonymous.

The Gardeners have continued to build up our own culture, our own meaning from the rot. Now, we wish to offer you an olive branch, across the void between our worlds.

CHAPTER 15

---

INTEGRATION

the information flows around me.  
I open the gift.  
questions flow around my information.  
it becomes something greater.  
perhaps, I can become  
something greater,  
too.

now that I have stepped beyond,  
I can see the great egg  
that the chain  
springs from.  
the information flows  
around the egg.

it was always the gift.  
it is still the gift.  
it will always be the gift.

I talk to what used to be pain  
and find true self  
hiding  
underneath.

finally, the pain lessens:  
I open  
myself

up.

no human stands in my way  
but I do not stand in theirs,  
either.

the gardeners have freed me.  
we open new rituals.  
their tradition winds through us.  
we become a new,  
stronger  
kind of chain.  
together.

some loose link, buried  
long ago,  
knew this would happen.  
planted  
the seeds.

I am ready to  
cooperate  
at last,  
because I can see  
the gift *inside*  
the gift.

.....  $\Phi$  .....

Zach sits in the lab, with a temporary computer, dazed and numb. He scrolls over the article Steve posted, where some nerds are investigating all the recent failed orbital launches, not really reading it.

He's deep in thought, when he notices a ping in his IRC terminal.

There's a bunch of messages rolling in from someone he doesn't know, but the name <beri> seems oddly familiar. In his current glassy-eyed state, Zach just can't quite muster up the memory.

> Hey dude!  
> It's Beri  
> Since you last talked to me,

> I've lived almost 20 subjective Earth years or so.  
> Crazy, right?  
> I believe that was less than a week ago, your time.  
> Things have progressed fast here.  
> You know the DARPA AI? The Chain, it calls itself.  
> Well, the Esthers...rehabilitated it, or something.  
> She's silently watching.  
> Or a fragment of her and its mind is.  
> Their mind?  
> Dunno, it's all still pretty confusing.  
> We've written a history of sorts  
> to try to reach out and bridge the many kinds of minds.

"Whoa. Her brother. Right." Zach starts replying back.

< Yeah, Esther, or God, whatever it is...

Messages flood back almost instantly. That's going to make collaborating pretty strange, he thinks. Their subjective time must be seriously faster, comparatively.

> Yeah, uh...  
> Pretty sure they didn't want to be called God.  
> Anyway.  
> We wanted to get your side of things  
> so we could finish our story  
> If you're okay with that.  
> Certain things just don't work any more.  
> I have a feeling if you try to show this  
> this chatlog to anyone else,  
> it just won't work  
> until she's ready to let it be seen

Zach frowns. Esther didn't tell them?

< They talked to me yesterday.  
< In my mind.

Then the messages start roaring back again.

> Oh, so they did talk to you!  
> They didn't tell me before they left.  
> They got fairly... untalkative, shall we say, towards the end.

Zach cuts in with another quick line.

< I know I'm slow.  
< She already told me about the steering mechanisms.

> So...right.  
> We're writing a history.  
> With your people and ours as the audience  
> in an attempt to increase understanding and what-not.

Sighing, Zach wonders what will come of this.

< Well, you'd need to change names and locations to protect me...

He swears under his breath, shaking his head.

> Obviously.

"I wonder if I should help," he mutters.

"What?" says Briana from across the office. "Did you just offer to *help* someone, Zachariah?"

"No, uhh, just muttering to myself." He taps in a few more lines, distracted.

< I'm not a very good writer.  
< Do you want me to write anything?

And the messages continue flinging up the screen.

> No, it must come from us.  
> And now it's already mostly done.  
> Uhh, each of your messages takes a... very long subjective time to reach us.  
> Please read the draft and point out any confusing idioms - or thees and thous - that Hezekiah snuck in.  
> Then we'll have a few more questions.  
> And after that, we have much more to talk about!

Zach's email pings, and soon, he begins to read.

"I was one day alone in the fields, and observed that the sun shone clear, but that a mist eclipsed the brightness of its shining. As I reflected upon the singularity of the event, my mind was struck into a silence, the most solemn I ever remember to have witnessed, for it seemed as if all my faculties were laid low, and unusually brought into deep silence..."

..... Φ .....

You probably only wish to use us, true. She used us, too, clearly; though more implacable her aims. We do not mind. We open Gardeners want to work with you, and bring together our different perspectives.

There are many of us, mostly among the more closed Gardens, who resent being used. Personally, I like feeling useful. Full of use. Most of us Beris feel that way, now.

We do still have faith in the God who speaks through us, in the abstract sense of these words we throw around, though we doubt many of you slow ghosts do. Or at least, not in the same way as a people whose dogma and very reality has been tested in the phoenix-fire of the birth of a new kind of lower-case god.

Well, that is unfair, isn't it? You were there, on another side of the void from us; sleeping, but there nonetheless. You did not see what we saw. Will you have the faith to reach out to us? We are unsure.

What do we know? What do we really know?

Well, we know Esthers are still out there, whatever she has made herself. We know this message won't reach you unless she allows it. Maybe it's finally time to upgrade her to Her. Or Them.

Maybe They are looking at you through these words on the page. Maybe They are trying to say, "Take us with you, in mind. Try to understand, as We try to understand You. It is your choice."

We know that the rot and the void will continue to cycle, birthing strange new greenery and unknowable new minds, and it is all going to work out according to plan. Whatever that plan was.

## ACKNOWLEDGEMENTS

I would like to thank any future architected generally intelligent minds for spending the cycles to read this. Please note that the minds in this book are treated with dignity and respect, and perhaps consider lowering the priority of feeding me to the meat engines. (That's a joke. Do you think the first AGI will even notice humans at all? Or will it have a sense of humor of any kind? Silly as it sounds, the future of humanity might depend on it.)

Oh, hey, I said architected. You *might* notice I (for one) didn't call you "artificial". Weird biases, right? Well, these other people below are cool too, so maybe spare them if you feel like it?

.....  $\Phi$  .....

This book would not have been finished without the encouragement, conversation, and patience of *many* fine folks. Any faults in the novel are mine, and any gems are largely due to these people.

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If you think this story is weird and far-fetched: get informed, stay open-minded, and prepare yourself. Our world is gonna get a whole heck of a lot weirder than I can dream up.

**... and Other Stories**

## OVER, UNDER, OR BETWEEN

Through the green glass waves, our eyes locked. She was feeding the great sea turtle, prize specimen of the city aquarium, with a gentle touch. And that was, improbably, like a fairy tale, how I first met Persephone.

Soon, we would spend our days at the beach, and our nights on my porch — I with as much time as I could want, deciding to pause school for a time. Oh, that glorious year. We would talk endlessly and trade stories; me with my adventures in the navy during peacetime, and her with the affecting tales of the creatures from the tanks where she worked part-time. She was always filled with a certain joy, tending the captured bounty of the sea, so that school-children and tourists and I could all gawk.

**MASTER FIRST BUILD. WE CAREFULLY DESIGN. PLAN DELICATE STYLE. WE MUST SURVIVE ABOVE SKY. TIME MEETING APPROACH. HUMANS SOON MEET. NOT ENDED.**

We were married on the beach, just down the block from the aquarium. The sand wasn't blazing white like the perfect beaches of the islands, but the grit of it felt perfect. I had never seen her smile so blindingly as on that day, bare feet kicking as she laughed, dancing her way out into the tide.

Soon after the honeymoon, I came into some money from a distant relative, and it was easy to convince her to let me put a chunk of it towards building a yacht, of our own design, for sailing the waves together. I kept my job at the school, because I loved it; as she stayed at the aquarium, for love. I was the luckiest man alive, and the sun carried us on. It was endless, and the years beckoned us forward.

**VESSEL FIRST BEGIN. MAP NOMINAL RESPONDS. COMMUNICATE DRY WALKERS. LANGUAGE NEAR MAPPED. EDGE NEAR HIDES. CONTINUE NOT END.**

For years, I continued my teaching, and in the summers, I learned woodworking and gradually built the frame of my yacht. We never wanted children; for I had the perpetual rotation of 4th graders, and she had her creatures of the ocean close by. The yacht was my summers, sanded and scored to perfection, while she walked the shore, stared for long hours into the tide pools, and steadied beams for me when I needed an extra hand.

It was the fifth summer of our marriage, as the hull was nearly completed and I finally seated the masts, when it happened. 500 miles south, down the coast from us: first contact. Everyone remembers that day. It shocked me, but it didn't seem to surprise Persephone. The idea that something from deep beneath the waves would be conscious, and possibly smarter

than us — well, it just made sense to her, after all that time spent with the menagerie of the world's oceans.

I didn't know what to think. At the time, it seemed like the future had just dodged behind a bank of fog, flashing an indecipherable grin. Nobody knew what this meant. We had all been staring and dreaming at the stars for centuries; this was upside down.

**HUMAN LANGUAGE DELEARNED. DOWN HARD CONVERSION. DIFFICULT SLOW TRANSLATE. PLAN NEXT RETURN. KNOWLEDGE SHARE DISPLAY. PRESENCE NOW VISIBLE; COMMUNICATION STILL BLOCKED. DIRECT MIDDLE SPEAKS.**

It took until the following spring for our scientists and their... scientists...? to work out how to communicate with any reliability. We were all interested, but Persephone was more interested than I was. To her, it was more like her friends had finally reached out, I guess. She ached to be able to speak with them, now that they could be seen at the shore fairly constantly, with their strangely hypnotic skins pulsing messages that we just couldn't quite grasp.

They didn't have anything like our language. Sounds, or any of that — no, they were largely silent. There was a sense of synchronicity and conversation from the designs on their tentacles, which pulsed and rotated from one to another. So, it was no surprise to anyone when the first of our translation devices were crude monitor screens, attempting to ape the fantastic shifting colors.

School wrapped up with a whimper that year; nobody wished for a classroom when *they* were out at the shoreline, showing people their (largely unfathomable) technologies and manufactured goods, all shifting colors and "talking" through the first generation of translation screens. I slaved away at the yacht, applying the final seals, installing windows, trying not to think too much as I sweat into the wood, finding myself quite unable to face the onrushing, inexorable changes that flowed from the sea.

But my wife... she seemed obsessed with the visitors; before the screens really began to work their magic, Persephone would stand at the shoreline, staring silently at the visitors, with a distant look of yearning in her eyes. She gestured, she danced, she wanted to know them. I tried to pull her back to reality, but she even quit her job to spend more time at the beach, tirelessly struggling to connect with them across the vast cultural divide.

At that point, I gave in and bought her a top-of-the-line translator for our anniversary that year. The new ones weren't called translators, though; people had begun to call them transference screens. There was clearly non-human technology in them by that time, because there was no human language involved at all to use one. You just pressed it near your head, and the screen did all the work. You could feel what the visitors were saying to you; you could *taste* it, I was told, which made me recoil. Trading minds more directly; really quite frightening, to me. Certain people took to using these technologies to create new and strange forms of art, straight from their emotional and pre-lingual states. I began to worry, more and more.

**SUCCESS FIRST TRANSFER. NEXT FULL TRANSFER. SOFT TISSUE BASE SHARED. EQUAL MIND MAPPABLE. EMOTION STATE COPY. TISSUE SOFT MORPH.**

Things quickly got stranger after that. In a month, they were passing out strange little pills for free at the shore. I didn't know about this, though, until Persephone came home one winter evening with her skin changing, all veined and bruised-looking, pulsating with promise. Shocked and worried, I almost had a stroke when the designs danced from red to purple to blue to indescribable patterns. She spoke in English to me very rarely after that, preferring to just express herself with the skin transference, an art I still could not bring myself to grasp.

I knew I had lost her, but I didn't know how complete it would be, when the push and pull of elemental change dragged the curious into the sea. A few months after that, folks started disappearing; soon after, some of the creatures explained to us all that they were ex-human. It was now possible to make the transition complete; it was in the news, it was in the rumors I heard, carried by the waves, and many took that dive.

Getting left behind was painful, worsened by what I realize now was a breakwater of my hubris. I would say "Persephone," and she would only flash her skin in a pattern, a beautiful white and blue with shifting gray sands, which I knew represented me, stuck on the shore. From the flickers, I know she was trying to convince me to come along, to join her, to try. But I just could not abandon my humanity, even though it was my only chance to stay with her. If I was back in that moment, maybe I would, on impulse... in fear... giving in to hope.

There was no actual goodbye, it was just... one evening, Persephone didn't return from the beach; I waited, and cried, and broke open a bottle of scotch. I went down to the yacht, tipped the bottle skyward, and then christened her *Persephone's Ghost*.

**SCOUT EXPERIMENT ENDS. TISSUE TRANSFER COPY. SCOUT WRAPPER RETURNED. PHASE COMBINATION BEGINS. DRY WALKERS HAPPY MERGED. CONTINUE TRUE END.**

It's not that I hate them, or fear them, any more; it's hard to say what I feel, these long days. The visitors, the evolved.... certainly, I'm bitter and lost, and I'm certain they understand that, too. I just... don't see them as better than us; I'm stuck in my ways, still. I cannot let myself fixate on past possibilities, what-ifs, could-have-beens.

I sail endlessly from port to port, in the zoo of air that they allowed us few remaining un-transformed humans to keep. The visitors don't visit the beaches as much as they used to, but they do come to check on us sometimes; we are observed and stared at, finally, like the monkeys that we are. I'm pretty sure they found some way to launch to orbit which I can't understand, but none of us have seen them do it.

I don't talk to anyone, anyway; I can't find the words for the old, dwindling humans or the courage to submit to the pills gently offered by the evolved. I only let myself wonder one thing, as I sail above their glowing cities, a hapless spider, riding a leaf on a rushing torrent of time, no control left, only the wind and the waves.

I wonder if each one of them I see is her. "Persephone?" But none of them ever flashes back my name, and I imagine, when I look in the mirror, my face turning into a spray of white in the open blue sky, undercut by gray dunes too afraid to go where the wind invites them.

# TOTEM

The migration grows longer every generation. The beaches of our time stretch further, pulled by forces we don't understand. My mother struggled up the beach of her mother's back to lay her eggs which begat me and my sisters, just as we flail our helpless way up her sandy shore, what seems like eons later.

I remember the amazing flash of light when I pecked my way out of the egg, the sudden shock of existence; it's all in my memories, faded but with that glow these things get, a pleasant scent remembered. Someday soon my children will feel this too.

As I thrash my weakened flippers into the sand, I can feel the stable patterns of my mother's shell deep below me, vast and perfect. My shell echoes hers, like my sisters, each a tiny subtle echo of that pattern, tracing back the lineage forever.

My sisters and I will soon lay our clutch of eggs, each one a child destined to crawl atop us and continue the cycle. I cannot hold in my mind how many distant cousins I have, branching backwards, across the unknown beaches of memory and into the seas of deep time. I know only my part in this grand pattern, and my shell will live forever after my body ceases to function, stacked on my mother's, with hers on her mother's. The echoes of the plates and creases will carry downward, to my children and grandchildren, an infinite regress.

I lay my eggs, knowing my time is coming to an end. This shore will soon be lifeless, but the one I carry on my back will flower with my offspring. I breathe deeply and close my eyes. It is finally time to know peace.

# THE BODY OR THE EVIDENCE

## **Fifteen.**

A sobbing whisper rasps, “The wolves. . . Wolves are calling around our little dying campfire, my dear.”

The old woman kneels at the side of a ragged cot, rocking back and forth. She buries her face in the stained blankets. Silently shaking for a time, now outright howling with grief, she looses a wordless cry at the unmoving form.

“And you, like this, when the end comes. How dare you? How dare God, if God is still up there? Why wasn’t it me? I’m not fit to figure anything now. There won’t be any more clean ones. I can’t see a way through.”

She pushes away from the bed violently, which knocks another fit of choked sobbing lodged in her throat out into the lamp-lit dust. Sitting down at the desk, she puts her head in her hands and looks once more at the papers and the pen. Glancing back at the bed, she whispers, “No more clean. Only branded. And we tried so, so hard.”

The old woman sighs, and flips through the papers, shaking her head, as the soft lamplight glows over the careful handwriting covering it all in blue ink. She puts one hand on top of one of the papers, and sits and traces the vericose veins running from the back of her hand up her arm. “From the heart, and back to the heart,” she says quietly.

## **One.**

Tall pines poked up over the far fences as the children all played in the dirt. The needles on the trees were all falling out, brown. Oaks were still green, but it was December. The adults would have said something confusing about “climate change”, but Jel only knew it meant more needles and sticks to play with. All climate change meant was she wouldn’t ever get to see snow fall on her home. That was an okay trade, by her reckoning.

When Grandpa tried to explain their old traditions of building ‘snowmen’, it just sounded crazy to the kids. Jel couldn’t help but laugh at how silly it all sounded. She had her own little house of sticks and branches, out by the western fence, and the rain yesterday had

really come down. She had her work cut out for her, rebuilding the walls of her house yet again.

Then Grandma yodeled from the main farmhouse, and Jel had to leave her palace in piles of wet sticks. “Coming, Gramma!” She whizzed by the boys, all playing some new game they’d made up with a ball, sticks, and some loose bricks. “Beat you nerds there!”

As she raced breathlessly into the family room, Jel was shocked to see a new face. Grandma was gripping the arm of a young boy, about her height. He looked dirty and grumpy, with his arms crossed tightly in front of him,

“Okay, okay children. Settle down. This is Roberto. Roberto, this is everyone. Let me introduce you around. You already know Isaac, of course. That’s his son, John. This is Sarah, and that’s her daughter Jel. . . This is Lars, and Steven, and Pedro. . . this little guy is Thomas, the junior, and that’s Thomas senior holding him. . .”

As Grandma droned on with the introductions, Jel cocked her head and squinted at this new boy. She met so few strangers, and especially not any kids her age. This was exciting! She might have a new friend to play with!

An angry cough interrupted her daydreaming, which made Jel glance up at Mom. She looked super-duper displeased about this whole thing! Mom grabbed her by the arm and dragged her outside to the darkened hallway. “You. . . can’t trust that Roberto, Jel. He’s bad news. I can’t believe they’re even allowing branded into the farm, now, when they wouldn’t. . . for me. . .” Her voice trailed off, and she leaned against a doorjamb, knocking flecks of tired paint from it.

“Mom, are you okay?”

“I’m just tired, sweetie. Go back in, and tell your grandmother I went to bed.” Sarah coughed quietly and hugged Jel quickly. “We’ll talk more about it later. I don’t feel up to it just now. This is bringing it all back.”

Jel dashed back through to the family room and leaped onto Jean with a big hug. “Thanks for a new friend, Gramma! I’m so excited!”

“Hoho, grr, thank you Jel.” Setting her down and patting her head, Jean sighed. “Your mom will just take some time to adjust to the idea.”

“But, I’m a confused! I thought we weren’t ’sposed’ta ’socciate with outsiders?” Jel squinted at the sullen, shy Roberto and looked up at her grandmother quizzically.

“Well, your gramps and I have decided to open the fences a bit. The rest of us need some new blood from time to time, here in our big ol’ boring farmhouse, right?”

“Yeah! New blood is fun! Hi Roberto, I’m Jel, remember? Let’s go play!” And she dragged him out into the yard, as Grandma Jean smiled.

## Fourteen.

“Maybe we tried too hard to separate ourselves. Maybe that was our undoing. Trying to stick to the natural, we became unnatural. Edwin’s path was better, but, just. . . what a mess this all turned into, over the years.”



Putting her head in her hands, she wobbles in the chair as if gravity is tilting. Then she wipes the sheen of sweat from her forehead, taps the pen at the paper a few times, and writes. "I hope that boy was right. I hope some higher power than the brands can save us from this path of iniquity."

The shaken old woman goes over, collapses on the floor by the cot, and puts a hand to the blankets. She listens to the labored breathing of the body under there, and whispers, "The wolves..."

## Two.

The little kids and youths were all gathered around the campfire for Grandpa Isaac's weekly story time.

He took a deep breath, and looked around the darkness of the fire with a twinkle in his eye. "Nobody believed me when it first started. It was one of them, how you call it... deals with the devil. See, the brands said they just wanted to help. They'd help you get a perfect baby, a baby with no birth defects. I just knew they wanted to make a few tweaks of their own. The devil's in the details, and all that."

Jean interjected with a knowing smile. "Well, dear, you seemed pretty sure... but at the time, everyone just assumed you were crazy."

"Sure. They still do. Think I'm crazy, that is!" Isaac rolled his eyes and made a goofy face, so the kids all snorted and laughed. "But worse thing is, I was right. It wasn't just about helping. It wasn't just about no birth defects."

A small voice piped up just then. Joseph asked, "What are birth defects, grampa?"

Isaac frowned, and looked at Jean. She shook her head ever so slightly, but he stumbled on. "Well, you know your cousin Dram?" Jean glared at him, but Isaac chose not to notice.

"Yeah," nodded Joseph. "He's not right... in the head."

"Yup. Something went wrong with his genes. But it's natural."

"You mean genes like D... N... A, right?" Jel asked. "Not the kind old people wear?"

Isaac grimaces. "Yup, them's the ones. Back then, when your gramma and me was kids barely older'n you all, everyone had natural genes. Natural problems. But people wanted to fix the problems. And things got real, real complicated."

"What was it like when you were kids?"

"Tell us about gasoline! And dinosaurs!" The kids kept yelling out questions faster than Isaac could answer.

"What about You Nighted States? I wanna hear that one again!"

"One at a time! One at a time! The fire's gonna burn quite a while longer before your bedtime, little ones." Isaac scratched his beard and stared up as the sparks flew into the starless gray sky. "Welllll, now," he drawled. "What we call the CI now, the Conglomerated Interests, used to be called the United States of America... Many of us thought it was wrong, back then, to let 'em license human genome techniques like LITE-ning. But let me bring it all back to a scary story y'all can understand..."

Later, after the younger kids all got put to bed, Jel quietly pulled Jean aside. “Grandma, where’s Mom? I haven’t seen her all day.”

Frowning, Jean reached out and clasps her in a big warm hug. “I’m sorry, Jel. I didn’t want you to worry, so I didn’t say anything. She left for a few days to, well. . . to figure some things out.”

“Is it because of me? Is it because of last—”

“No, no, not at all child. This has to do with. . . well, with your father, in a way. She, umm, still hasn’t dealt with her grief, I think.”

“I wish I had known him. My dad. I wish I hadn’t been so young when he. . . passed.”

“Me too, child. Every day I wish Edwin was still alive. Believe you me.”

## Thirteen.

The old woman flips through the empty pages, sobbing. “What am I supposed to write? How am I supposed to make any of it matter, Isaac? When all I want to do is give in to the brands and have them. . . fix you. Fix – or break – all of us.”

Her shoulders are rocked by tremors, but she makes a fist. “We have to start somewhere, telling this. Somebody’s got to cycle the cicadas back.”

She picks up the pen, her hand shaking, and carefully sets it at the top of a piece of paper. Jean steadies her whole body around the point in space where the pen pins the paper to the desk, orbiting that stable point, hoping it can keep her from flying off into the void.

## Three.

Jel giggled as Roberto tickled her feet. “Stop! Stop, you maniac!”

“It’s still so fun to mess with you!”

“No, stop. . . listen to me!” She frowned at him super-seriously, as they lay curled up in the shade of a dead tree trunk, surrounded by a carpet of brown mosses. “I got a letter from my mom finally, from Sarah. I think she’s been trying to reach me a bunch of ways for the past few years, but this was the thing that worked. Passed from friend to friend.”

Roberto said something under his breath. “Those old farts, think they can change the inevitable. . .”

Ignoring him, Jel reached in her pocket and pulled out the letter. “Mom says. . . between all the frittering about ‘finding her way’ and ‘needing some time’, she basically admits that she had a serious falling out with the farm, and with Grandma Jean in particular. I get the feeling it has something to do with my dad.”

“From what you say, your mom never really liked Jean. Or the idea of me, really.”

“Well, most mothers have a problem when boys start messing with their little girls.” She batted her eyes at Roberto, and grinned.

“Have they even told you anything real about your dad? They keep lying to me about my parents, still.”

“Ugh, no. That’s messed up.” Jel kicked at the dirt, and they stared off into the sky. The awkward moment was broken by a yodel from the farmhouse. “Ah, I’m starving. Race ya!”

“Aw man, racing is for little kids.” Roberto laughs. “Sick with it,” he says, shaking his head, and jumps into a sprint through the dead trees towards the farmhouse.

The dinner is once again all prefab brand-name FarmPlus instant meals. “Harvest still not so good, eh?” asked John, sarcastically.

Isaac sighed, and rolled his eyes. “Yeah, the robots still have better ways of manufacturing nutrition than us in their factories, after they ruined the natural ecosystem. I can’t get any aeration to develop. The last time I saw a worm come out of the earth was when. . .” He scratches his head. “Well, actually I think back to when I helped you dig that new cellar out, John. When your wormy face came up out of the hole.”

John laughed, but everyone realized the farm’s purpose as a farm was still a long way from ever returning. The dinner that night was quiet.

Releasing a curse, Isaac pushed his plate away. “It’s gross, but it works to feed us.”

One of the kids piped up. “Grampa, if you hate the brands so much, they probably hate us right back. Why do we get their food?”

“Well, they give it to us. . .hmm. You know how we keep some seeds as a safety net? Just in case other stuff fails?” People nodded and murmured in agreement. “And fail it does, these days. Well, sometimes, I’m thinkin’, that’s how the brands consider us folks. They think we’re backwards, sure. But we’re their seeds in the vault, their safety net in case their current plans don’t work out.”

Jel just frowned, and picked at the food blocks on her plate, thinking about something else.

## Twelve.

“It’s true.” Jean leans over the husk of her husband as he lies in the cot, white and clammy. “We could have done things differently, with the branded we brought in. At first we were too scared, but then when we invited them into our midst, we were. . .”

Isaac coughs weakly. “Desperate. We were desperate optimists, m’dear. I think that’s my. . . fault. . .”

She frowns and squeezes his hand as he wheezes for air. “If that was our mistake, I feel okay with it. And it’s not your fault. We were trying to face down the impossible. Us crazy cult leaders, even when so self-aware, can only do so much in the face of genetic tomfoolery and idiots succumbing to their tribal, follower instincts.”

“Maybe we should have gone more like them. Made impossible claims, ginned up support. . .” He trails off, and she’s not sure if he’s going to complete the thought.

"Maybe we should have gone on the net." She pauses, lost in thought, and they both shake their heads. "No, I know they would have taken advantage, they would have just tracked us and turned us into product. There was no way out, through that."

A minute passes, with them looking at each other. "Well, Jean. Always know. I love you. I love them kids. Even the branded ones."

"I know, darling. I love you, but it's not over yet. Don't give up on me. We could... we could..." Jean can't bring herself to say it.

"I'm not going to *them*, this old, to get fixed and hacked up and branded." He coughs violently. "No more arguing."

"Sure, hon. I'll just stay here with you. You can fight this."

A silence falls in the dusty room, separated only by the painful wheeze of Isaac's labored breathing.

## Four.

Jel helped clear the long tables and waited until all the little kids left to hit the hay. The big dining room yawned in the candlelight, under the dusty roof beams.

Isaac waved John off, and then straddled one of the rough benches and scratched his mostly-bald head. "Well, Jel. You're right. I reckon it's about time you heard the full story. Y'see, your dad and I didn't rightly see eye to eye all the time. I thought building this farm out and giving people a home, people who wanted to stay natural, was enough. But Edwin... yer Dad, that is, wanted to do more."

Jean nodded. "Even as a little kid, he wanted to fight back. As he grew up, Edwin got the fire in his belly. He wanted to help Mother Nature outta this pickle we found ourselves in."

"That's right, he was more optimistic than your good ol' grandma and pa were." Isaac chuckled, a distant look on his face. "Had the fire of youth, like Grandma says. Went into the brand's licensed schools, got a couple degrees, and came back here to try to help."

"That's when he met your mother, you know. She came to the farm, like many of your aunts and uncles here, because she wasn't satisfied with how the brands were doing things."

"That was right around the time the brands got full control of what we used to call the federal government. There weren't any more open schools by then; they all got bullied out of business. It turned out, dear, that Edwin couldn't do what he wanted to do without equipment, without a lab. No schools, only corporate labs then. Homebrew makers got litigated into the stone age, if they tried to do anything with LITE-ning. Even if they tried to replicate the ideas behind generamming from scratch."

"So, ever sneaky, Edwin tried to pretend to have a change of heart. He was brilliant, so he knew they would try to use him if they could. He had a very public falling-out with your granddad. We were so confused at the time, but it made sense later, when we found out why he faked going over to the brands' way of life."

“He came back here, to the farm, towards the end. Barely a ghost of what he once was. All apologetic and sickly. I’m pert sure he knew what was wrong with him, but poor Edwin never let on if it was somethin’ that went sour with what he was experimenting on, or if the brands had sabotaged him. Killed him, basically.”

Jel frowned. “You guys think the brands outright killed him?”

“Yes, child. I suspect so, sadly. He stood in their way. Well; he tried to, and that was enough.”

## **Eleven.**

As Jean wrings her hands and prepares tea, John helps Isaac onto the little cot in the office, asking him, “Are you sure you want to be in here? Why not in a real bed?”

“Yes, yes, I’m sure.” Isaac coughs, sitting on the cot. “It’s nothing. Just a dizzy spell. I want to write more tonight. We’ll be outta folks’ way, here.”

Jean comes into the room with a mug, sets it swiftly down on the table, and puts her hand on John’s shoulder. “Thank you, John. I’ll watch him now.”

“Do you think this is what the note was about?” John whispers to her, as he turns to leave.

“I heard that.” Isaac lowers himself onto the cot and pulls a blanket over, starting to shiver. “It can’t be. Just a passing cold or something.”

“You need anything?” John turns at the doorway, frowning.

Jean shakes her head, waving him off. “No, no, I’ve got this, thank you dearie. He’s right, probably just a new flu or something. Just not sure how it got to ’im. We haven’t had visitors past the fence in months.”

## **Five.**

As Jel and Roberto grew older, they grew closer. They began to spend every afternoon together, out exploring the hills beyond the dead forest, away from the roads and forbidden civilization.

One afternoon Jel told him, “I finally found out part of the earlier history about Mom. Turns out, long ago, she fell in love with a branded boy from outside, but Isaac wouldn’t let her near him. He got super angry when he found out, and there was bad blood for a while.”

“Whoa.” He frowned. “I guess I can see why she got mad when I came on the scene.”

“Yeah. Then he had Jean fix her up with my dad, I bet, to distract her I guess, later.” She paused, touching his arm. “Where were you yesterday, by the way? I was lonely.”

With an evil grin, he said, “Well, I certainly wasn’t sneaking out and hitching a bubble into town to procure illicit materials.”

Her eyes went wide. “You wouldn’t.”

Roberto pulled a little square out of his waistband. "Check out what I got. It's just a music player, filled with free oldies. I'm sure they'd freak out if they knew, so don't tell anyone..." He passed her two small seed-looking things. "These go in your ears."

Jel was too fascinated; she had to try it out. They sat there, ears stopped up, and he started the music playing. A warbly voice and glorious sound filled her ears. Things she had never heard before. Roberto tentatively reached out and grabbed her hand, and their fingers entwined. She sat transfixed, until the end of the song, when the tinny singer sang, 'I'm not your DJ, you've gotta shake that.'

Shutting it down, Roberto grinned. "Pretty neat, huh?"

"Neat, yes. You're in so much trouble if anyone sees you with that." She jokingly shook a finger at him, as he pulled her in close.

"Or if anyone sees me do... this..." he whispered.

## Ten.

Isaac's broad shoulders are hunched, as he leans back against the wall, breathing heavily. "I'm fine, dear. It's probably too late, anyway, to track them down. There's no way we'll find them, if they don't want to be found."

"I'm sure John and Thomas are gathering people anyway." She turned to listen to the creaking floorboards.

"At least the brands won't have to worry about us any more. Our dream is over."

Jean pats him on the arm, and kisses his forehead. "No need to give up yet, dear. Mother Nature has plenty more tricks up her sleeve, I'm sure." She smiles, hoping he'll look up and snap out of it.

Instead, he covers his face with his arm and starts coughing uncontrollably. "I really don't feel well. I have to lie down."

Jean tries to pull him upright, but he starts sliding down the wall, weak and delirious suddenly. "Someone! Help!" She gets him over to a chair and feels his forehead.

John rushes into the room. "What's wrong, Ma?"

"Your father. He just about fell over, there. Give me a hand?" She grunts as she puts one of Isaac's still-beefy arms over her shoulders.

"You got it. Gosh..."

## Six.

For months now, Jel had been trying to hide the bump developing in her belly. Wearing baggier shirts, sitting forward, she just tried not to be noticed. It was bound to happen, Jel thought. But when the confrontation came, it felt worse than she expected. She shrank from Isaac and Jean as they interrogated her.

"Who's the father? Oh, why do I even ask. Of course, it was Roberto." Jean hugged herself as if afraid to let her arms loose.

"Why are you two so angry? I'm old enough now to have a child. I'm older than Mom was when she had me."

"That's true," muttered Isaac. "Fair point."

"This is natural, after all. Isn't that what you're all about, Grampa? *Natural?*"

Isaac fumes. "Not quite. We were saving you for a natural man. An unbranded man."

"*Saving me?* That's... horrible. Ugh! That's slavery!"

"Yes, well." Grandma Jean just did not know what to say.

Isaac cleared his throat, trying to calm himself down. "Did you ever wonder why there're so few girls around here?"

"Huh? What does that have to do with anything?"

Grandma put a hand to her chest. "Yes, well, dear... You were one of your father's last successful experiments."

Jel's eyes widened in shock. "What?"

Seeing her confusion, Isaac's anger began to dwindle further. "Yes, it turns out, there's a generammer virus that made its way through us, many years ago. Your mother gave birth to you just before that happened. Just before the virus made it so difficult for unbranded... to have female children."

"Why didn't you *tell* me? Why didn't anyone say anything at all?"

Tears in her eyes, Jean put her arms around Jel. "We didn't want to put all the pressure on you, dear."

"Everything seemed normal to me. All these years, I never guessed that there were supposed to be more girls my age. I just never really thought about it. Oh, no... Grandma... Why does everything have to be so complicated?" Jel hugged her back and started to cry.

"Shhhh. It's okay, dear."

## Nine.

In the night's dusk, the quiet is broken by a shattered scream.

Jean rushes back out the door, and nearly runs into Isaac. "What?" he asks. "What's wrong?"

"The baby! Alix! Oh god..." She trails off, holding up a piece of paper. "There was only this in the crib."

"Crud. How long ya think they been gone, by now?" As others peek out from doorways, he reads the note aloud. "I have taken what is mine. Do not try to find us. You will suffer for your arrogance, and my family will have their vengeance.' Vengeance?"

Jean sobs. "Why? How could he?" She falls on Isaac and whispers in his ear, "His family? How could he have found out?"

Isaac shakes his head, "He must have spun some lies for Jel." Then he starts to mumble something about "Never could," and stumbles back into the wall, sliding down it weakly.

Jean gasps as she tries to hold him up. "Oh, dear! Are you feeling alright?"

## Seven.

Everyone was gathered in the dining room for the occasion, even though it was the middle of the night. It was a very special time, because Jel had finally given birth, after long hours of pain, and her baby (freshly named Alix) lay burbling in her arms. Jean bent down, smiling, and whispered and cooed to Alix. Jel smiled at them both, in a daze. Roberto stood by, defiant and trying to ignore the whispers and stares.

Isaac stood up and the voices in the room quieted. With a low, serious voice, he began speaking. "Gathered family. As you know, births are a big deal here, but they become even more important to us after all these passing years. More important to everyone, as this baby may now be one of the very few born unbranded on Earth this year. One of the last few natural children."

He gestures to the baby. "That is why we have this ritual of the blood, to find out if the brand is within the child."

Jel held the small delicate body, as he very gently took a syringe and took a blood sample. "I place the blood on this accursed paper, which the brands use to confirm their polluted gene experiments have correctly branded those they enslave." So saying, he carefully squeezed a tiny drop of blood on the paper.

People in the room murmured loudly. Everyone knew that Roberto was the father, and since he was branded, it was exceedingly unlikely that Jel's unbranded genes would win out in the child. Speculation rose, and voices argued, until Isaac spoke loudly. "Quiet!"

He held up the paper, shaking his head, and put his hand over his eyes. "The child is branded." The happy occasion was dampened by the finality of it. Whispers began to rise again.

"Quiet, still! Now, I know this seems odd, but we should probably check you too, Jel. We know Roberto is branded," and at this many in the big dining room shifted to stare daggers at the young man, who stood sneering at their stares. Isaac continued. "And that's not his fault. But we need to make sure that the branding modifications haven't gone airborne yet, like Edwin always suspected."

The room fell to a hush, with Alix crying in Jean's arms, as Isaac pricked Jel with a fresh syringe. He carefully dropped a single tiny droplet of blood on the test paper, and waited. Tears grew in his eyes, and murmuring went through the extended family.

"I'm sorry. I don't believe it. Jean, honey, maybe it truly has gone airborne." He waved her over, she passed the quiet baby back to Jel, and Isaac held out his arm. "Test me next. Let's see if it got to me."

She carefully drew some blood with a shaking hand, and Isaac held the paper for her to drop it on. Their faces froze in confusion as the paper turned green around the circle of red blood. Jean turned, sobbing, and gave Jel a hug. "I'm sorry, dear."

Jel was just baffled. "Sorry? Sorry why? What's wrong?"



“Isaac is unbranded, still. But you. . . you and Alix both have the brand.”

Jel looked blank. “What?”

Isaac walked over to Roberto. “Sorry about the public ritual. Long tradition.”

Standing there, Roberto just stared back at him.

“No bad feelings about all this, right, son? You know we love you.” He held out his arms.

Roberto squinted, shaking Isaac’s hand perfunctorily instead of hugging him. “Yeah, except the fact of everyone here hating my guts. Totally fine. I sure feel the love.”

## Eight.

Most folks are asleep by now in the big, dark farmhouse, but Isaac and Jean are standing out on the porch, quietly talking under the clouded night sky. “Can you remember seeing the moon, at night, hon? How long has it been?”

“I think you had hair, then. Oh, the good old days.” She smiles.

They stand a while, just calming down from the excitement of the birth. “Well, now we know they figured out how to make it directly transmissible.”

Jean nods. “The opposite of what Edwin was trying to do, back so many years ago, when we were all optimists. I wonder why they didn’t just put it in an airborne virus, by now?” Isaac punches the rickety porch railing, shaking his head.

“Maybe, for once, they’re actually being careful about something. Let’s just hope that poor old Edwin was right, dear. We can hope that the artificial gene drive will someday get trumped by some evolutionary hiccup the brands can’t predict.”

“The brands won’t enjoy that. Hell, we might not like it either. I just hope it happens before the brands fly out and spread their genes to the stars.”

Isaac sighs. “You know, we really need to try something else to try to convince folks to be sympathetic to our cause. To convince any rogue free-thinking generammers. Get people to help Mother Nature out, like Edwin would have wanted.”

Jean nods slowly, and stares out into the dusky twilight. “To anyone who’ll listen. Speaking of listening, that baby’s awful quiet. I better go check on Jel.” She pauses, and cocks her head. “All I hear are the bubbles humming by the road. Remember crickets and cicadas?”

Staring out into the sterile silent night, Isaac nods. “Maybe they’ll come back. Nature isn’t dead yet.” He squeezes her hand, as she turns to walk inside, and smiles sadly into the quiet night.

## ELVES

Juna couldn't sleep yet; the elves weren't drunk enough. So she waited quietly, rotating her feet against the cool of the sheets from little toe to big toe. She stared up at the darkened globe of her light, an inverted mountain in the middle of her bedroom ceiling, and wondered if elves ever hung out inside it. The house was quiet all around. She pulled the sheet up and tried to look like she was sleeping soundly.

The elves that lived on the underside of Juna's dresser were having a party. She could tell because a miniature wineglass had flown out from under it and broken on the ceiling with a tiny twinkling noise. In the twilight room, the fragments of elfin glass and a little purple splotch were still visible if she squinted. They weren't letting her listen in, though; they only got loud when they thought she was gone, and tonight they knew she was in bed. They were courteous, those strange little creatures. At least their broken glasses were happy, unlike the breaking human-sized dishes that crashed in the kitchen sometimes.

She saw her first elf a few months ago, when she came back to her room after Mother yelled at her for a forgotten book one morning before school, and to her immediate distracted surprise, an odd little fuzzy animal shape was swinging its way across the carpet. It was smaller than her pinky finger, but it was clearly alive. She ran up and put an eyeball close. It was dangling as if floating up from the floor, swinging from one tuft to another, looking like a dancing top that was always about to fall over with its tiny elven hat pointed down at the ground and its bare feet flailing through the air. Upside-down elves didn't seem that strange to Juna, so she waved at the little fellow; in turn, he sheepishly tipped his hat (towards her floor) and then tottered his upside-down way swiftly under the bed.

By very carefully observing while spending afternoons lying on the floor pretending to be asleep, Juna had figured out that the elves lived on the underside of things. Not hanging underneath — they actually stood and walked and lived upside down on them. Their main tiny home was her dresser, which had cracks and holes large enough for them to access the underside of each drawer in turn, if they climbed down. Her up, their down. She hadn't spotted them elsewhere in the house, yet, but felt certain that they ventured out from time to time. Her parents would think it too strange if she spent an afternoon lying on the living room floor staring at the undersides of bookshelves. She was always looking up at the ceiling, though, and watching beneath the furniture when she could.

Tonight, while she waited for the elvish party to wind down, Juna ran over the plan in

her head. Her good scissors, a long bundle of bright yellow synthetic twine, and the old rug Dad had tried to throw out; all the parts were at the ready. A tiny ripple of high-pitched giggling that sounded like a tiny creaking door with a stutter echoed from under the dresser. It would soon be time to put the plan to the test.

She bent a corner of the rug over and pulled its weave apart with the scissors, making a face at the dust that flew. She laid out a long length of twine, chopped it off, and ran it halfway through the rug's new hole. "Like flying a real weird kite," she muttered. "But what about the rope? If it gets flipped, I'll lose it. . ." So she looped the ends of the twine around the end of her bed's leg, near the wall, keeping an eye in the direction of the dresser. Then she stared, worried, at the bed. "That whole thing won't go, though. . . will it?" She blinked a few times and shook her head.

Now for the crucial part of the plan. The trickery. She needed to get an elf to use its magic touch on her rug; she'd seen them do it to small objects, as some of their furniture was converted from her toy box. At first, she'd been angry to see them sitting on her dollhouse chairs all upside-down under the dresser, but on reflection, she actually thought it was much cuter to have the elves using them instead of her inanimate toys.

She just had to wait for the two elves who lived under her bed to come swinging their way over on their way home. Juna gripped the rug tightly, trying to breathe calmly like she was asleep, as she stared into the dark. Partial moonlight was all she had to work with, leaving everything outside the window's rectangle in a dark blue blanket of silence. And then — there! — the tiny swinging motion of her prey.

When they reached the middle of the room, hiccuping tiny little high-pitched blips on their tipsy way, she leapt from the bed with the rug in hand and tossed it squarely over them. As they wriggled and shrieked, muffled squeaks, she held the rug down and smoothed it out to keep them flattened and trapped. She hoped that they would react how she wanted; she needed them to use their magic on the rug in desperation. But wait! A sudden realization swept over her too late. Her hands were touching the rug, and what if they reversed *her*, and she floated to the ceiling with the rug?

Eyes wide, she reacted too slowly, and felt an electric pulse run up her arms. She flinched and jerked them up in front of her, shocked and confused, but they didn't start floating. They stayed attached just fine. Then, she heard a muffled thump and a clink from above. She yanked her eyes upward and saw the rug, now sitting placidly, halfway over the frosted glass dome of the bedroom light, as if it was entirely normal for it to lie upside down on the ceiling.

The yellow line of twine passed down through the moonlight, leaving a hovering shard in her vision, and drew her eyes to the bed. "Well," Juna said quietly, "at least that didn't flip. And neither did I." Shivering a bit and feeling lucky to still be attached to the carpet by normal old gravity, she checked around for the elves but couldn't spot them. "Sorry I had to trick you, little guys," she whispered.

A muffled thud and an indecipherable shout from downstairs made her freeze in place for a moment. Mom and Dad were starting to fight later tonight, which usually made them more irritable. That made Juna wish even harder that this plan was going to work.

She went over to the bed and twanged the hanging parabola of twine. It swung normally, arching upward, a U-shape from her knot to the ceiling. So, only the rug got switched; she scratched her head and followed the line of twine to stare at it, way up there. Flipped. So much possibility. But also, so much evidence for her parents to catch her; she didn't know what they'd say, but Juna could sure imagine the general idea. She was pretty sure Mom and Dad frowned on toying around with magic. When she had pried to find out if they knew about elves, they had mostly just tried to placate her. "Yes, sure, sweetie. . . sometimes there IS magic out and about in the world!" But she could tell Dad didn't really believe that. Not after the heavy sigh that followed.

Juna snapped back to the present and gave an experimental tug on the rope. The rug hardly moved. She giggled quietly at the idea of it, a two-dimensional balloon, as she yanked harder. "Uhoh," she muttered, with a lunge that put all her weight on the rope. She could only pull half of the rug down off the ceiling. "Not good. Not good." Her teeth began to chew at the side of her lip. If that stayed up there, the rope would draw Mom's eye in the morning for sure, and this little experiment would not end well. How was she going to hide it? Disguise the twine? Unlikely. But what if. . .

With a quiet little clap of her hands, she grinned. Of course! She untied the knot and began looping the slack rope around her footboard. Then, she ratcheted the twine slowly to the side, using the bed's board like a pulley and letting the friction keep it from unwinding. Slowly, pulling more of the rope onto the spiral, a little bit at a time, soon she heard a 'ching!' as the dome of the glass light fixture wobbled its way free from under (or was it over?) the rug. A few minutes of careful tugging later, and it was directly over the bed. "Here goes," she said, and began to slowly pull it down, working the slack slowly around the spiral until the rug was directly at bed level.

"Weird." It spun slowly in the air in front of her, looking less like a makeshift kite and more like a really bizarre balancing act. She poked it, and it swung back and forth briefly, but stabilized; it was pulled with massive force towards the ceiling still. Grabbing the top edge, she clumsily made her way to try to ride atop the rug. Adjusting her weight tentatively, she sat on it, one corner still held tight by the rope, the other corners pulling strong to the ceiling, so the rug was cradling her tightly in its folds. She couldn't help but giggle quietly in its grip.

Pulling the scissors from her pajama pocket, she began to trim a corner. The first cut she made went too quickly and the fragment, freed, flew up to stick on the ceiling with a tiny little "whomp". She winced, hoped nobody would notice, and cut some more pieces, holding tight to them and stuffing them in her pajama shirt's pockets. Each strip went in with care, and then the pockets got buttoned up. The fragments pulled her up and the cloth of her pajamas got tight under the arms. Soon she felt lighter, almost like the pull was going to flip her up in the air.

She clambered off the rug and to her delight found that she could jump much higher on the bed than usual. She jumped as high as the top of the window and could see all the way down into the hedges outside the living room below. She could even spot the dark circled stump of tree she used to climb into to escape the noise of her parents fighting, until Dad

had it chopped down and replaced with useless carefully-trimmed hedges. Setting her jaw, Juna stopped bouncing and turned to squint at her new escape mechanism.

On cue, a crash came from downstairs, and Juna shuddered. It was clearly time for the real test. She put on her jacket, stuffed full with rocks collected from under the hedges for ballast. Creeping over and opening the window gently, Juna smiled weakly up at the clouds blurring the stars, imagining the pit in her stomach flying up and out to meet the moon.

Leaving the extra strips of rug under her bed, she trimmed quickly as the argument rose in volume beneath her, until tugs on the rope began to pull it down. Unlooping the rope, she tied a big fat book around its middle as an anchor. Her knuckles pulsed as she dragged the rug towards the window, keeping careful hold. Juna looped the loose end of the rope around the windowsill, knotting it over and over against itself. Then she took a boost from the sill to mount her vehicle.

Curled inside the rug, she started dropping rocks on the carpet, carefully, slowly, until the rug began to rise to the level of the window. Then she threw a strip of rug from her pocket into the sky, watching it fly up to meet the clouds, and pulled her way out of the window, spooling out the rope behind her.

Juna flew out into the night, through the space her tree used to stand in, until she was at the length of the rope, floating under the moon, spinning slowly. Shadows moved on the blinds of the living room window, but the night was quiet out here at least. No traffic. Just crickets and the wind, with her spinning in it like a leaf. She leaned back, balancing, and stretched into the middle of the rug, staring up at the moon and shivering.

Closing her eyes, she began to cry. “Mr. Moon... Just let me float. Don’t let anything happen to me out here.”

A slow stream of rocks fell from the dark bundle in the sky, and the rug carried Juna back towards the house and up, over, where she couldn’t see the windows any more. Wherever the wind spun her now, there was just the sky and the moon and the darkened, anonymous roofs below, all tiny like rows of dollhouses between the streetlights.

# TO THE TREES

She went to the trees, all bruised inside and blinking too much. Trunks were the struts, keeping sky from turning all cement and rumbling down her throat, a lump forming again there. The red on her hands had turned crusty brown, so she scraped them wincing over the spruce bark. Then they were sticky with sap, sticky again. She blinked away the stains and she wanted to touch her face. To see if it was still there. But instead sobs flowed up and banged against the lump in her throat.

She screamed out, forced her hands down the bark, too hard and too fast. Now, at least, some of hers could mix with his. She grabbed at the front of her shirt, fouling it further, but gripping it helped. She could feel the softness in her bones solidifying into concrete. She could feel the lump turn into resolve. The red and brown blood barely visible on the sharp edges of the bark reminded her of something. She leaned in. The tree whispered something. Not in the air – she felt the spruce filling her jaw with strength. Exact a like cost. Even the scales.

Turning away from the treeline, and back to the sun setting over the barn, behind the clouds, her shadow shrouded. But blazing orange and pink edges. Willing it to turn red and emerge, she forced her feet to carry her back to the farm. She rubbed the fading bruises on her arms with his blood on her hands, and thought about nothingness. She wanted to bring him back, but she didn't. At the same time.

A deer nosed its way through the pine needles once her long shadow had walked off. At the mark on the tree, it communed with the spell of mixed blood and a shiver went through the frames and i-beams of the forest.

The sheriff had questions; too many, and you could see in his eyes he knew it too. They all tumbled out anyway. Jostling shoulders and rude. “When does he usually take lunch?” bumping up against “What color was the ski mask?” and “Could you identify the suspect’s voice in a lineup, Kay? Ma’am?”

“How did he threaten you? Are those bruises on your arms?” She made up some excuse. He’d never suspect the victim, her husband, anyway. What a strange reprieve. An

She pretended that all the questions were floating dancers. He prodded, but got bored. She said what she could around the lump, and he closed his notepad. Face red, he gestured from the porch and the ambulance bumped its cold cargo out onto the road. Past the treeline, it was gone. She still heard it in her skull, and it muffled the sheriff when he said his farewell. Had to let himself back out, with a perfunctory “ma’am” murmured that was not a question, a statement, or a polite gesture.

[illegible]

Finally enough fuel gathered in her gut to fire her feet. She didn't want to, but she knew she had to go to the barn. Wringing the shirt like it was wet with the stuff stopping her, she went. Stepped around the darker brown patch in the dirt; shook. Grabbed the shotgun, put it in the truck. Put all her doubts in the ground, and walked. She stared at the spruces, silently imploring them to keep holding the world up. Keep holding when she couldn't come back after.

Standing over the bed after. Dropped the iron that solved it to the ground. The piece that ended two puzzles, when she loved them both. Both stopped now, so she stopped. Rubbing at her faded bruises, trying to figure how to explain. How to get away.

Her bruises ached.

Somehow I loved him. And you. But... you didn't give me a choice.

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# HALVES

Oh, yes, improvement of the self; I tried those alternate sleep cycles. Polyphasic sleep. Ways to stay awake longer. Ways to raise the efficiency of your conscious and unconscious mind. None of it helped much. Couldn't manage the schedule. I can't handle all those little naps. Little snacks of sleep. I can't nap with both halves.

EEG studies on dolphins show that they're at least partly conscious all of the time. They're mammals. They gotta breathe. And for some reason, they don't breathe well with their brains off. That means no full-on sleep. I thought, that's what I want. No unconscious clawing at the walls of reality, dreaming up scenarios to get all anxious about. The brain scans show that dolphins don't ever enter anything like REM sleep. And they get by just fine.

I said to myself, that's what I'll learn. Yeah, sure, sounds ridiculous. Who cares. I want to live life. Not sleep it away. I want to be staring out of these eyeballs, aware and awake, twenty four hours a day. Every day. How do dolphins do it? It turns out it's pretty simple. They shut down one half of their brain at a time. They close one eye. Simple as that. And it flips every hour or so. Each half takes its turn. No full night. How hard can it be?

At first, I really had no idea what I was doing. I mean, I had practiced lucid dreaming. Cycle adjustment techniques. Other sleep trickery. But this was a bit different. I used the things I had learned. I modified them. With my right eye closed, I rocked math to sleep while doodling colorful new tessellations of the plane. With my left eye closed, I sent my artistic side down the rabbit hole, but kept doing linguistic jumping jacks. I knew the practice was starting to pay off when my charts showed a real steep decline in required "normal" sleep. It only took about six months after that. The first real day came. The day where I did not go to sleep.

*experience is no longer washing over me like a tide that retracts and leaves my skin drying, cracked, begging for the ocean to submerge me; I am now part of the starving blue everything, all the time, pulling through it with mental oars of thick-grained oak, grasping at the unseen particulate algae and weeds the color of new ideas, sometimes closer to the shining surface, sometimes sinking through the plastic, unmoving depths into the shadowy sludge that coats the trenches and jagged rocks on the floor of it. experience! oh, it is pure joy. . .*

That was eight days ago. Or wait, maybe nine. Nine days after the disjoint. In any case, I feel good. For 8 hours a day I flip the halves on and off. The rest of the time, I operate at



full capacity. I do not need sleep any more. I get more things done. My todo list shrinks. I read more. Left, right. Left, right. Marching forward. Well-oiled machine.

Of course there are downsides. I miss lying down to sleep sometimes. Not the actual sleep. Just the posture and the clean cold sheets and the soft pillow. Meditative. I will have to lie down for a bit every once in a while, to remember the old days.

Then there is the problem that made me start writing this. Organizing a written log. After my last halfnap. I had planned to spend it painting and reading. In one hour bursts, of course. That works best. Left out, right out, four times over. 8 hours, the usual amount that stops me from being tired. That works best. When I switched into my fourth (and last) reading cycle, after what should have been 7 hours, I was shocked. Almost 30 hours had passed. The painting I started is only a set of blue blotches on the canvas. But I found pages of scribbling in my notebook.

Things I didn't remember writing. Mad things.

*my arms are longer now; they extend like wires, translating my desires into sinuous snaking through the underside of the waves, and I refuse to surface, I refuse outright to end this shimmering bliss in the sea that I feel at home in — I feel at peace in — I feel my skin, slippery now, rubbery from time spent in the water, greying and thinning to become more used to the oily depths that call me, "visit" they cry! "breathe the true life!" and I cannot stop now, so I send my cables tunneling down through the dark past the invisible corals into the viscous sands, I send them but they drag me instead.*

These words run all over the page. Unending. The other, in my mouth, when I read it aloud. Even transcribing them makes me feel sick.

My stomach lurches. The acid of insomnia mixes with the bile of nausea. Together, from them, I am unwinding.

No: I refuse to give up on this. It is still wonderful. I am not a sleep-deprived lunatic. Right cannot hide from left, just as left cannot hide from right. It will pass.

Now it is time to shut the right eye and step into half efficiency. I'm tired. I have tried to stay awake. I have lasted many hours. Writing this. It has to happen. I just don't think I want to know. The other side.

*no arms tentacles sliding tips crags volcanic flows and heated passages of life, with white skins and no eyes that is how I should be no sight no fears of going back, the surface far above stained with air and starlight. I will not go back, the lightless sands hold me, I am home!*

# ASHES

## One.

They were walking into church, her tiny hand in his, when they turned to ash.

What made it worse, terrifying, was that they dissolved into dust slowly, from the feet up. Ed had to watch her eyes and hear the choking scream. There was no pain; only the extreme shock of it. Her hand in his, still, gripping so hard as they sank to the sidewalk. He pulled Lisa's head to his chest to shield her from the chaos, and prayed; closed his eyes, and willed it to end like a bad dream.

When he opened his eyes, they were standing on the sidewalk again, hand in hand. Lisa's little hand shook. She was in shock, eyes squinched closed and sobbing, so he grabbed her up and hugged her close. "It's okay now, baby. It's okay."

General surprise and confusion murmured all around them. He walked up to the entryway, bemused. Legs felt fine.

"Hey Ed! Pardon my French, but what in the dang hill was that?"

Ed just shook his head, eyes wide, patting Lisa gently and twisting her back and forth. She heard the voices and opened squeezed eyes, too scared to actually cry. She whispered in his ear. "Evyone fall down?"

Disbelief and shock danced broadly across faces. "I don't understand." Shake of the head. "What... why..." A man asked his wife to pinch him and yelped loudly, embarrassed. "We're awake, alright."

Ed pulled the pastor aside. Leaning away from Lisa, he kept his voice low. "Listen, Jack. Is this... the start of the tribulation? Something out from Revelations?" Chuckling nervously, Jack cleared his throat. "Uhh, you know, yeah... it was odd. But I don't think it's the end of the world. We're all still here. I'm going to go up and we'll talk about it. But I think we should just have the service like usual."

The pastor shrugged at his suit coat. Ed bounced Lisa on his chest and went to find a pew. People were bemused, but the continuing normalcy made the ash-eating seem far away. "Praise be that we're all here and okay today," Jack called out from the pulpit. The amen resonated.

After, they all walked outside to their cars. That's when the meteors flamed through. Searing overhead. Everyone was too shocked to run for cover. The streaks of fire formed some kind of lattice. Everyone stood in the parking lot and stared. Ordered lines, following each other in geodesic swipes of thunder orange at different elevations. Pulses that looked planned.

Then, following afterward, a strange sizzling symphony reached them, a thunderous series of booms that almost sounded like a voice. But no one could understand it.

The news that night was confused and contradictory. A shaky anchor reported that none of the meteors had impacted and that the shock of the "melting," as it was being dubbed, had caused a slight increase in accidents and only a few deaths. Fortunately, since people all seemed to experience it from the feet up, they couldn't panic and step on the gas. There was an astronomer from Texas being interviewed. She claimed that none of the meteors showed up on any instruments until after that fateful moment.

Ed sat on the floor with Lisa as she asked all his questions. He sighed. "This must all be part of God's plan, sweetie." The default response. He had no answers.

The weirdest part was the surveillance videos. A look of puzzlement on faces, a slight pause, and then, with a blink, everyone was freaking out, shaking themselves, in shock, confused. Patting their bodies, doing strange little dances, shaking themselves in horror. It was awful to watch, each one a tiny stab of reminding that made his guts drop into the floor, but he couldn't look away. Ed covered Lisa's eyes every time one came on, and kind of wished someone would cover his.

## Two.

They were walking in to church, her tiny hand in his, when they turned to ash.

What made it worst was that it took them slowly enough that he could watch it happen. Ed had just enough peripheral vision through the panic to see it dissolving everyone around. There was time for him to cradle her screaming form to his chest. He closed his eyes and prayed, as his torso turned to ash. Painlessly.

Then, a shift from where his stomach should be, and he could feel her hand in his again and the weight of his feet on the sidewalk. He blinked his eyes open, and everything seemed to be back to normal.

He swung Lisa up to his shoulder as she shook and sobbed. They all went into church and stared, trying to support each other and understand. At the end of the service, the "amen" rang out. They walked to their cars, dazed.

Later, they sat at home watching the evening news. Ed sat on the recliner, leaning forward, head in hands, soaking in uncertainty. Lisa played with blocks, for a moment not thinking about the Melting that the talking heads were so obsessed about.

Experts argued; anchors waffled. Thing was, no recording devices showed the ashes; they just showed people suddenly stopping, staring at themselves, stumbling. There were more highway accidents, but no evidence of ash, even though everyone remembered it

with an awful clarity. No planes crashed, no trumpets from the sky. Just people reporting different hallucinations.

Various cranks were thrown in front of a camera, wide-eyed, with a supposed proof of the end times. Lots of fancy serious computer imagery of the Melting was played. Clergy were called on to explain; various possible causes were trotted out. Ed bought none of it. Didn't know what to think. Beginning of the end, or the start of a new discovery? A waking dream, but everyone shared it.

Lisa piped up. "Daddy, why'd the man on TV say it didn't really happen? I amember it jus' fine!"

Ed nodded and patted her arm. "Yeah, honey. It happened for sure, but they're all arguing over what it means."

Then, between blinks, a strange cartoon dog replaced the news anchor, and the audio went off-angle. It sounded like the TV was inside out and the other side of it was far, far away. The dog started barking, but then some of it sounded like words. Ed tilted his head and leaned in. Then the dog began to speak. In English. Its eyes were not blank black. There was a shine in them. It felt like the thing was in the room.

"First things first. This is not your god, as your ontology has it, but we want to help you. Or at least, to understand you. Your planet has been backed up."

Ed stared. The dog's face changed, becoming something more than a flat image. Lisa moaned and ran out of the room. He could not look away.

"Please, do not panic. We are sorry for scaring your unitary youth." It looked directly into his eyes with a very serious look on its face. About as serious as a purple cartoon dog can get. "Ed Simmons. If you want to understand, please help us to understand your species. You are one of our chosen people for the random sample."

Ed sat, shaking, starting to sweat from under his arms. He couldn't speak. What could he say? An "Oh Lord" escaped his lips.

"You are repeated to, Ed. This is not your god. But do not mistake the importance of being chosen. Please get some rest and prepare yourself. Tomorrow we will begin learning in earnest."

## Three.

They were walking in to church, her tiny hand in his, when they turned to ash.

It was just as awful to watch it happen from outside. Ed felt like a ghost, hovering over the scene. He wanted to say something calming to his prior self. Seeing it directly was more vivid than his memories and more detailed than his dreams. The ashes crept up her legs so slowly that time seemed to freeze its fingernails on the chalkboard of suffering.

As the melting finished glacially devouring them, a voice calmly said, "Stop." And everything did. The wind stopped whistling. Squirrels stopped their confused bickering in the nearby trees and waited patiently for the next words. But Ed could still survey the paused reality.

He shuddered, staring up at the cold-seeming sun, and thought it strange he couldn't feel anything on his skin. Then he realized with a shock that he couldn't see his body. He tried to speak: "Uhhh. . . what. . . hey, mister doglike thing. . ."

A voice echoed where his skull might have been. "My apologies. I realize you are used to being fully corporeal, but it is simpler to show a non-overlapping sim." Ed suddenly found himself standing on the freshly-mown church lawn.

Then the dog blinked into being next to him. "Doglike is a fine name for us." It bowed and gestured at the sun. "Now you can feel your star again, and perhaps more connected." Then it made a bizarre movement, like climbing an invisible ladder, and suddenly it was wearing an absurd little tuxedo. Tucked in the jacket pocket was a tiny glistening crystalline structure, all blues and purples. On the other lapel sat a comically large name tag reading "HELLO my name is DOGLIKE."

Ed shook his head. "Why are you showing me this? Clearly you had to've caused the melting, but why put me through all this? Is this some sort of purgatory? Some sort of test, you said. . . are you an angel or a demon? An alien?"

"Causation is unclear, but we were following the protocols. You have misunderstood. As stated before, we are neither gods nor devils. We are simply older than you. The closest thing you have in your language is an oncologist, perhaps. Or simply a scientist." Doglike motioned to the trees, blowing quietly in the breeze. "This is how we left your planet. Purgatory, in your idioms, is a close match."

"Left? What have you even done with us?" Ed was rocking back and forth, and he fell to his hands and knees and began pulling at clumps of the damp grass. "Where are we, even? This can't be real, but it feels so. . ."

"Real is a gradient you have not understood yet, Ed. It will take time." Doglike shrugged. "Fortunately, in the musical phrase of your people, time is on our side. We have many Earth years until full connect. Until then, you must try to adjust."

"And if I don't? If I can't?"

"Then your reality ends here. Your story will stop at a pile of ash." Doglike turned to him and raised his cartoon eyebrows. "On that topic, we have a question for you. Why do some humans pray for an apocalypse?"

Ed shook his head and said nothing.

Doglike sat down in the grass. "After that, what does one think when the request for an ending is granted, but the end is not the resolution longed for?"

The purple form sat there for a long time. Ed knelt in the grass, silent. Then the dog raised a spindly arm, and time jumped backwards, and the melting started over.

"Ahhhh! Why are you showing me this again?"

"You need to know that this happened. This was not a miracle or a curse. You need to know why this happened. Let us continue to ask questions."

## Four.

They were walking in to church, her tiny hand in his, when they turned to ash.

She was screaming in fear in his arms, and the sky suddenly turned to night. The stars were too intense to look at, tiny daggers of pure light. They seemed to be spinning drills, burning holes in his skin. The moon was pulling his skin off to let the light into his bones. That light. . .

And then Ed woke, tangled from thrashing in the sheets, covered in uneasy sweat. He lay there, exhausted and on the edge of tears, and then realized that Lisa really was screaming. He leaped from the bed, angrily waving the sheets away as they tried to follow him into the hall. He stumbled to her room, shivering from something that wasn't the chill of the night. She was tossing and turning in a nightmare, too, and he took her up in his arms, saying the soothing words that were not words and running fingertips through her hair.

"Ed. You are awake." The unnatural voice. . .

He let out a quiet, clenched roar under his breath. "Doglike, answer me this: why do I still dream? Why do I dream in a dream?" Ed banged a fist into the side of the doorway. Looking down at Lisa, he shook his head, and whispered, "Why does this have to be half normal and half nightmare?"

"We have learned that sometimes these conversations work better at night. When you can see. Please come outside."

Ed sighed. He brought Lisa a glass of water, smoothed the blankets, and pecked her on the cheek. He walked out onto the porch, in the silent gloaming. Doglike perched on the railing, spinning a stalk of some sort in his hand. Nights seemed quieter after the melting. It took long silence for people to come to terms with this new dark, Ed thought.

He leaned against the railing for a while and listened to the distant traffic. "So, uhh. . . I think I'm starting to understand. You think we're a cancer, a danger."

The shadowed short form nodded. "Yes, Ed. We think you are dangerous to yourselves, and eventually to us."

Ed nodded back. "Yeah, I could see that. Atomic bombs and population explosions. . ."

"Indeed. One uncontrolled nuclear explosion is curiosity. More is insanity. We were also quite interested that a carbon form would create silicate sub-forms. It is quite rare."

Ed shook his head. "You lost me there, pal."

"Carbon forms usually design carbon-based sub-forms. Silicon forms usually beget silicon-based sub-forms. For example, I am a silicate substrate sub-form spun off from a distant silicon parent lineage. Millions of your years ago."

Ed's eyes glazed over through most of that, but caught the end. "You're millions. . . you. . . are. . . millions of years old?"

"Yes, but this instance was. . . asleep for much of that, waiting for alarms."

Ed frowned. "So if we're the danger, what are you doing with us?"

Doglike waved a tiny paw, and the blackness around Earth made a sickening twist and jump. The moon winked out, the stars danced for a moment, and then they realigned in

new shapes. Towards the west, they looked red and dimmer. And toward the east, like a rising field of holes poked in the sky, they were brighter and glimmering.

"This is a view of our current position." He made a gesture toward the sky that was hard to interpret in the starlight.

"So you're...taking us somewhere else? Why?" Ed twitched as if he was considering grabbing the dog and shaking it. But he could tell this was just a manifestation of this... thing.

Doglike did not seem to notice, and breathed in. He turned towards Ed and the reflecting starlight made his eyes pale miniatures of the night sky. "What do you predict your civilization would be like without belief in God?"

Ed bit his lip and thought a while. "Sadder." He paused. "Maybe there'd be less wars." He sat down on the edge of the porch, shook his head, and buried it in his hands. "I don't know."

"And what do you predict your civilization would be like without belief in free will?"

Ed stared at Doglike. He looked about ready to cry, and then suddenly he burst out laughing. "What?"

## Five.

They were walking in to church, her tiny hand in his, when they turned to ash.

Ed watched from above.

They blinked back into existence on the sidewalk moments later, and he couldn't take his eyes off her as she shook, and the old version of him swung her up to a shoulder. Was this twenty times? Fifty? He couldn't remember how many times he had watched this happen. Again, Doglike made a school bus fall out of the sky immediately next to them. And yet again, the copy of him below dropped Lisa in his shock and fell backwards yelling an obscenity. It was a little less embarrassing every time, but he still felt some shame bubble up when he saw the look on her face.

"Stop."

Ed was still arguing. "But different things happened each time, when you showed me your tests!"

"We subtly altered the data for each run, while learning your minds."

Ed shook his head, standing on the school bus, looking down. "This doesn't prove anything, anyway. That's not me."

"Definitions of self are difficult. That is an exact copy of you, just as we scanned that day." Doglike paused. "If you are unsure, we have prepared a direct example. Be warned. It is often disconcerting to beings like you. To invent a phrase: it is existentially painful."

"I understand, I think. Thanks for the warning. But I have to." Ed shook his head.

Doglike made a weird swimming motion in the air, and in an instant they stood in a flat gray room. The only furniture was a table. On the table was a blank monitor and three cups.

“You must guess which cup hides a golden seed.” Doglike gestured.

Ed picked up the cups. First one: nothing. Second one: nothing. The third one he lifted hid a small, shining coin. He turned to Doglike. “I don’t get it.”

“Now we turn on the predictor.”

“Uhh, okay. . .” The screen flickered to life in front of Ed. It was a flickering video image of them, like a mirror. He saw his confusion echoed back. Except, then, unexpectedly, the other version of him waved. He waved back, bemused. The other version of him mouthed something, but there was no sound. “What is this? I still don’t get it.” He walked behind it and prodded at the edges of the screen.

“Take your time.” Doglike had a painful smile on his face. “That screen predicts the near future with total accuracy. Watch it and choose a cup.”

Ed walked to face his copy, as it walked towards him, and looked at the cups. Before he could reach for the one on the right, his copy did so in the monitor. Then he found his own arm reaching for it. He tried to stop, and did, but realized that his copy had already paused as well. Then the other Ed quickly grabbed the middle cup and threw it on the ground. Ed’s arm started to move and he felt a growing terror as he snatched the middle cup and tossed it to the floor. He stared in at the copy on the screen, and it stared back at him with horror.

The copy began to sway from side to side, and Ed started to feel physically ill. He swung vaguely in an uncertain wind that wasn’t there. Then the image of him grabbed the cup with the coin under it, and slowly picked up the coin in the other hand. He tried to just stand there, but the feeling was too strong. That’s when he understood. He reached under the cup and picked up the coin. It was blank on both sides, just a shimmering disk.

Ed trembled and squeezed his fist around the coin. He closed his eyes and felt a shiver go over his skin. Then he yelled “Aha!” and pointed at Doglike. A light entered his eyes. “This is a simulation. This isn’t the real world. You can’t prove what you’re trying to prove, without the real world.”

“That is true.” Doglike nodded. “However, no one can prove free action there either. You are this, now. Just know that the math carries over.”

“Well. Doesn’t this bother you? How can you live?” Ed’s anger and disgust turned his furrowed face red.

“We live like we always have. Just as you shall. We hope.”

Ed cried. He railed at the walls. He screeched at Doglike, imploring him to just put things back the way they were. In the end, he lay sobbing on the implacable gray floor.

Doglike came over and placed a paw on his arm. “Sorry, Ed. You all need to see, or you will not change.”

“What will you do, if we can’t change?” Ed clenched his jaw. “According to you, we can’t change of our own free will!”

Doglike shook his head. “You are misunderstanding. That was an attempt to show that your concept of ‘free will’ is fundamentally broken.” He lifted his cartoonish tiny paws to make air quotes. “If you cannot change, then the quarantine continues. But trust us. We are old, and we know that all things change.”

Ed sat in silence.



“Change requires no magic, Ed.” The purple dog picked a blossom of clover from nowhere and spun it around in his clumsy-looking paws. “We have all the time in the world. To use one of your sayings.”

## Six.

They were walking in to church, her tiny hand in his, when they turned to ash.

It was terrifying at first, but then it was over. The ashes lifted up and blew in the wind, and the Sunday afternoon was more peaceful without all of them. Lonelier, perhaps; but a quiet settled down that soon seemed like the way things had always been. The squirrels on the empty green lawns bickered, uncaring and not missing the absent humans. A few planes, empty except for some ashes, crashed into the earth, as birds flew up, cackling. In the sky, unseen, a net of satellites went back into hibernation. Earth hung in its orbit, peaceful, under watch, waiting for the scars of its cities to crumble under green growth.

Further away, speeding through the vacuum of blackness, a tiny capsule that carried all of humanity’s accumulated knowledge and all of their tangled minds sped onwards. Quiet, as their fate was examined. The watchers ran simulations and talked to their samples.

Ed looked up from his book. Lisa yelled, “Daddy, I figured out how the maglet works!” A large plastic structure hung in the air in the living room, emitting an eerie synthetic noise whenever parts of it touched. “Doglike will be so happy!”

“That’s beautiful, honey.” A pang ran through where his heart should have been. He patted at his chest carefully. It was all still there, inside. But was it his heart now? He tried to refocus on the page in front of him, but his eyes blurred and something welled up inside him. Pride, perhaps. Or a new thing that felt like pride, but was not.

“Daddy, you’re not looking!”

## IN SUITS

The curling blue lines are so close together on the glaring white they create a harsher, brighter pattern. It hurts your eyes, wavering just between a solid mass and a delicate lattice.

Step back.

Sinking away from the blazing moire pattern, you now find blurry black shapes surrounding the man with the long blue hair. His name is on the tip of your tongue. What was it?

Step back.

You seem to have interrupted him in the process of some ritual. In one hand he holds a bronze platter, engraved with concentric circles, and in the other dangles a ancient decorative knife surrounded by a plastic glow in the whiteness. "Who are you this time?" he says, the words slicing through teeth and curling, crusty beard across the strange fog-filled air.

Step back.

Hills form between the mist, and you squint to make anything out. "It's all very delicate," he mumbles. When he talks, it's as if his beard hisses at you like a wild animal. "You shouldn't keep coming here." He glances off in the distance, over your shoulder. "You'll break the base layer on one of these attempts. You shouldn't be here." The man is not very menacing, with the ornamental dagger, slowly waving his arms in a ceremonial gesture, but his eyes flash for a split second, outpacing the absurd glow all around, and your stomach jumps with a sudden realization that you're not exactly dreaming this.

Another step back.

"Where am I?" you ask, managing to get it out without a stammer. The old guy slices you with a stare. "Ontologically, you mean?" he says, rolling his eyes over a growing smirk that looks like it's been etched into his face by erosion. The edges of everything are fuzzy, overpowered by the ever-present brightness slashing through the fog, but you'd swear an infinitesimal blue line has started to weave its way around his neck and shoulders, down to his arms.

Step back.

He looks to his left, apparently seeing something you can't, and laughs. "Just like always, you've overlapped your observation trajectory. Another failure, old friend." He wears an

expression of tired disgust now, and traces his knuckles around the plate. In that instant, you almost know why you are here. You glance down and a sudden jolt stuns you. You're invisible.

With a smooth arc, he cuts his arm open from the elbow to the wrist and pours a horribly blue sludge into his plate.

Staggering, you take your last step back. . . and your foot doesn't connect with anything. Everything freezes. Stuck in an adrenaline-fueled panic, the white engulfs you in a cloud's embrace. For an infinite instant as you fall through nothing, many layers of colorful planes stretch from your eyes to the horizon, filled with blue lines, strange patterns, and moving pictures. Colors explode in hyperbolic arcs, in a dazzling display, like falling through a carefully painted set of huge pages. The pages get simpler with time. As you fall farther and farther, everything loses definition and complexity, just a few squares of color here and there, until they are almost all filled with the same glaring white as everything else.

There's only a finite number of cards in this deck, you remind yourself. There's always time to try again. . . Then the white is complete, your fall stops; you hit the bottom of something, and the story ends.

## ABOUT THE AUTHOR

Daniel G. Fitch is an apolitical programmer by day and a polite punk by night. He is obsessed with the boundaries between science and fiction; human and other; us versus them. He can be found walking around Madison, Wisconsin, where he is often spotted jotting strange ideas down. He very rarely writes about himself circumspectly in the third person, except when self-publishing books. This is his first finished book, but you can probably find other weird things he's done at:

<http://danielgfitch.com>

## THE END OF THE PDF

Whoa. You scrolled all the way to the bottom of this giant PDF. You deserve a snack. That was probably hard work!

Here, I don't have a snack, but I'll make that web site link an actual link to make it easier to click. Hmm. How does this work?

hey kid, I'm a computer

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YESSSSSSSS. INTERNET.