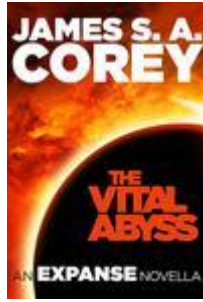




**JAMES S. A.  
COREY**

**THE  
VITAL  
ABYSS**

AN **EXPANSE** NOVELLA



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# THE VITAL ABYSS

## *An Expanse Novella*

James S. A. Corey

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## The Vital Abyss

They kept us in an enormous room. Ninety meters by sixty with a ceiling eight meters above us, a bit less than a football pitch, with observation windows along the top two meters all the way around from which our guards could look down on us if they chose to. Old crash couches salvaged from God knew where lay scattered around the floor. Eventually I came to recognize a certain subtle smell like alcohol and plastic when the air scrubbers were replaced, and the humidity and temperature would sometimes vary, leaving runnels of condensate coming down the walls. Those were the nearest things we had to weather. The gravity, somewhere in the neighborhood of one-quarter g, suggested we were on a spin station. Our guards never said as much, but I could think of no planetary bodies that matched that.

For most of us there was a sense that this shabby, empty room was the final destination for us, the former science team from Thoth Station. Some wept at the thought. The research group did not.

We had toilets and showers, but no privacy. When we washed ourselves, it was in front of anyone who cared to observe. We learned to shit with the casualness of animals. When, as was inevitable, we began to turn to each other to fulfill our sexual needs, it was without the veneer of privacy we had once enjoyed, though eventually several of the crash couches were sacrificed to create a small area visually cut off from the rest of the room and that we began calling “the hotel.” There was never anything sufficient to absorb sound. Our enforced physical intimacy with one another was a source of shame for many of the prisoners who didn’t come from the research groups. Those of us who had—myself included—held a different perspective. I think our shamelessness was part of what made it hard for the others, the ones who had worked security or maintenance or administration, to accept us. There were other reasons too, but I think the shamelessness was the most visible. I might be wrong about that. I have learned to question my assumptions about what other people feel.

The lights in the room went on at what became morning, turned off again at what we agreed to call night. Water, we took from a pair of spigots beside the showers, drinking directly from them using our own cupped hands. For want of razors or depilatories, the men among us grew beards. Guards and jailers would come through whenever they saw fit, armor-clad and carrying guns sufficient to slaughter us all. They brought Belter food, vat-grown and yeasty. Sometimes they joked with us, sometimes they pushed us away or beat us, but they always brought us sustenance and the thin paper jumpsuits that were our only clothes. All of our guards were Belters, with the elongated bodies and slightly enlarged heads that spoke of childhoods in low gravity and long exposure to the pharmaceutical cocktails that made such lives possible. They spoke in the polyglot cant of the Belt: a hundred different vocabularies all crushed together until understanding it was as much music appreciation as grammar.

During the first year, they occasionally took us out of the room for periods of interrogation. The times that I was taken, the sessions were held in small, dirty rooms, often without chairs. The techniques varied from threats and violence, to offers of privileges, to a thin-faced woman who just sat in silence and stared at me as if she could force me to speak through raw, unspoken will. As time went on, these occasions grew fewer and farther between. Sometime in the third year, they stopped entirely, and the room became the totality of our collective world. We were a community of thirty-seven people living under the eyes of cold and unsympathetic jailers.

Though we came to know each other quite well, the taxonomy of our previous employment remade itself into a kind of tribalism. Van Ark and Drexler might disagree about everything from the best use of our “daylight” time to who had starred in the entertainment videos of our youth, but they had both been maintenance, and so when any conflict arose, they took each other’s side against the rest of us. Fong had enjoyed the highest rank among the security team in our random organizational slice, and so she was not only the unspoken head of that group but through them the ersatz leader of our community. Research was kept separate, and even then

divisions by work group made a web of subdivisions. Of the several dozen large signaling and communications work group, only Ernzt and Ma had come to the room. Imaging was the largest with five: Kanter, Jones, Mellin, Hardberger, and Coombs. Nanoinformatics had three: Quintana, Brown, and myself.

Of the system outside the room—Earth and Mars and the Belt—we knew essentially nothing. For us, history had ended on Thoth Station with our experiment on Eros only half-done. Even years after the fact, I would find myself ruminating on some peculiarity of the dataset. I no longer trusted my memory enough to say whether the issues that absorbed my hours were accurate or figments of my somewhat fragile and altered mind.

During my bitterest times, I would lie in a crash couch for days at a time, thinking of Isaac Newton and the way that, by having his mind and his peculiar history, he had refashioned all of human understanding. I had stood on a precipice as great as his and been pulled back against my will. But more often, I was able to ignore such thoughts for weeks, sometimes months, at a time. I took a lover. Alberto Correa. He worked in administration and spent his childhood taking odd jobs at the spaceport complex at Bogotá. He had an advanced degree in political literature, and he said both my names—Paolo and Cortázar—reminded him of authors he had studied. He would talk for hours sometimes about the effects of class systems on poetic forms or Butler-Marxist readings of the action videos of Pilár Eight and Mikki Suhanam. I listened, and I like to think I absorbed some of it. The sound of his voice and the presence of his body were comforting, and the moments we spent together in the hotel were pleasant and calming. He said that if he'd known he would end here, he'd have stayed on Earth and lived on basic. When I pointed out that then he and I wouldn't have met, he would either agree that I made it worthwhile or else tell me about the beautiful men he had loved in Colombia.

Time, of course, became difficult to track, but I was fairly certain we were into the fourth year in the room when Kanter died. He'd been complaining of feeling ill, then grew agitated and delusional. The guards, seeing all as they did, brought

medicine that I suspect was merely a sedative. He died a week later.

It was the first death, and reinforced to us the idea that we would likely never again be free. I watched as the others went through a period of mourning that was less for Kanter than for the lives we'd had and left behind. Not the research group, but the others. Alberto became a much more ardent lover for a time, and then lapsed into a funk in which he barely spoke to me and shied away from my touch. I was patient with him because I found patience easier when there was no alternative.

Day by day, we were ground down. Our experiential worlds narrowed to who was having sex with whom, whether someone's comment about a fellow inmate was innocuous or provocative, and fighting—sometimes violently—over who among us slept in which of the crash couches. We were petty and cruel, despairing and restless, occasionally humane and even capable of moments of actual if ephemeral beauty. Perhaps all periods of prosperity and calm go unnoticed when they occur. Certainly I didn't look on those days with any fondness until after the Martian came.

I didn't see him arrive myself. I was talking with Ernzt when it happened, so my introduction to the man was Quintana barking my name. When I turned, the Martian was simply there. He was pale-skinned with nut-brown hair and a bad complexion, and he wore the familiar uniform of the Martian Congressional Republic Navy. Our customary Belter guards flanked him, chins lifted a bit higher than usual. Quintana and Brown stood before them, waving me impatiently to them. I didn't hesitate. The pull of something new after so much sameness called forth an excitement that left my hands trembling. I plucked at my beard as I strode over, hoping against all reason that it would make me look more respectable. When we stood before the new man, the three of us together, Brown took a little half-step ahead. I stifled the urge to move forward as well, certain that it would end in all of us crowding in on our visitor. I would swallow Brown's little physical dominance play in order to keep the Martian from leaving.

“This is all of them?” he said. He had a pleasant voice, barely accented with the drawl of the Mariner Valley.

“Bist,” the Belter guard said with a nod. “Nanoinformatic, you wanted. This them.”

The Martian looked at us each in turn, studying us like we were fresh recruits. It felt as if the floor was shuddering, but it was only my body. There was always an electricity in the unknown, a sense of impending revelation like the last moments before orgasm. Seeing this man and being seen by him, I felt more naked than I had since my first sexual experiences; though the longing and desire sprang from my heart and throat now, they were as commanding. All the things that the room had taken from me—my curiosity, my hope, my sense that a life outside of my nameless prison was possible—were distilled into his cool brown eyes. One of the occupational hazards of my career path is a kind of solipsism, but I truly felt at that moment that God had sent an angel to deliver me and whisper the secrets that had been hidden from me so long into my ear, which made the actions that followed so devastating.

“All right,” the Martian said.

The filthy little half-step Brown had taken reaped its reward. The Martian took a dedicated hand terminal from his pocket and held it out. “Take a look at this. See what you make of it.”

Brown snapped it up. “I will have a reaction prepared, sir,” he said, as if he were team lead again and not a filthy, long-bearded captive in a paper suit.

“Can we have copies?” Quintana asked.

I was going to add my voice to his, but the guard cut me short. “One trade, one terminal. Sus no neccesar.”

The Martian turned to leave, but Quintana surged forward. “If you need someone to interpret data for you, Brown’s not the right person. He was only team lead so he could spend more time talking to administration. If he’d been a better mind, they’d have kept him in the *labs*.” The same sentiment



was forming in my own throat, but my hesitation in finding the words saved me. The nearest of the Belter guards shifted his weight, turned, and sank the butt of his rifle into Quintana's gut, folding him double. The Martian scowled, disapproving of the violence, but he did not speak as the guards led him to the doorway and out of the room. Brown, his beard jutting and his face flushed, half-ran and half-strutted to the hotel, the hand terminal clutched to his chest. Triumph and fear widened his eyes. Quintana retched, and I stood over him, considering. The others watched from all around the room, and when I looked up, there were more figures behind the glass staring down at us. At me.

Quintana had made a mistake, and one I would have made as well. He'd called the Martian's judgment—capricious as it was—into question. He'd tried to take a position of authority when we were all here specifically because we had no authority. Seeing that was like remembering something I'd forgotten.

One trade, one terminal. The words meant two things to me: first, that after all this time someone was trading for either our freedom or possession of us, and second, that only one of us would be required. Needless to say, I determined in that moment that the traded prisoner would be me.

"Come on," I said, helping him to his feet. "It's all right. Come on, and I'll help you get washed up." I let them see me assist him. With any luck it would get back to the Martian that one of the three was a team player, the kind of man who helped someone when they were down. Quintana, I felt sure, had lost his chance. Brown, by having the hand terminal and whatever was on it, was ahead. I didn't see yet how to arrange things so that I could gain the advantage, but simply having a real problem to solve again felt like waking up after a long and torpid sleep.

Brown didn't leave the hotel for the rest of the day, and while he did venture out when the guards brought our evening rations, he sat apart, the hand terminal stuck down the neck of his jumpsuit. Quintana glowered at him from under storm cloud brows and I kept my own counsel, but the effect of the

day's actions went well beyond the three of us. Everyone in the room buzzed. There was no other subject of conversation. Mars knew we were here, and what was more, they wanted something of us. Or at least of one of us. It changed everything from the taste of the food to the sound of our voices.

Keep a man in a coffin for years with just enough food and water to live, and then—just for a moment—crack the lid open and let him see daylight. We were all that man, stunned and confused and elated and afraid. The numbness of captivity fell away for a few hours, and we lived that time deeply and desperately.

After the meal, Brown retreated to a crash couch near the wall, curling into it so that no one could sneak up behind him. I, pretending nothing had changed, went through my customary nighttime rituals—voiding my bowels, showering, drinking enough water that I would not wake thirsty before the lights came back. By the time our sudden toggle-switch nighttime came, I was curled in my couch with Alberto. His body was warm against my own. Brown, whose movements I had become profoundly aware of, remained in his crash couch by the wall. The glow of the terminal was dim as an insult. I pretended to sleep and thought I had fooled Alberto until he spoke.

“And so they’ve thrown us the apple, eh?”

“The fruit of knowledge,” I said, but I had misunderstood which apple he meant.

“Worse than that, the golden one,” he said. “Private property. Status. Now it’s all going to be about fighting over who’s the prettiest one, and war will come out of it.”

“Don’t be grandiose.”

“It isn’t me, it’s history. Differences in status and wealth are always what drives war.”

“Have we been a Marxist paradise this whole time and I didn’t notice?” I said, more acidly than I’d meant to.

Alberto kissed my temple and brushed his lips along my hairline to the cup of my ear. “Don’t kill him. They’ll catch

you.”

I shifted. In the darkness, I couldn’t see more than a limn of his face, floating over me. My heart beat faster and the coppery taste of fear flooded my mouth. “How did you know what I was thinking?”

When he answered, his tone was soft and melancholy. “You’re from *research*.”

\* \* \*

I wasn’t always the thing I became. Before I was *research*, I was a scientist who had educated himself into too fine a specialty. Before that, a student at Tel Aviv Autonomous University, caught between investing in a future I couldn’t imagine and losing myself in a grief I couldn’t fully encompass. Before that, I was a boy watching his mother die. I was all of those men before I was a researcher for Protogen corporation based on Thoth Station. But it is also true that I remember many of those former selves with a distance that is more than time. I tell myself that remove allows me to trace the path from one to another, but I’m not sure that this is true.

My mother—a heart-shaped face above a pear-shaped body who rained love on me as if I were the only one in the world who mattered—lived on basic most of her life, sharing a room in a UN housing complex at Londrina. She wasn’t educated, though I understand she was a good enough musician when she was younger to play in some local underground bands. If there were recordings of her on the network, I never found them. She was a woman of few ambitions and tepid passions until she reached thirty-two. Then, to hear her tell it, God had come to her in her sleep and told her to have a baby.

She woke up, marched to the training center, and applied for any program that would earn her enough money to legally go off contraception. It took her three years of fourteen-hour days, but she managed it. Enough money for both a licensed child and the donation of germ plasm that would help begin my life. She said that it was her choice to purchase sperm from a trading house that gave me my intelligence and drive, that the only fertile men in the housing complex were criminals

and thugs too far outside of civilization to be on the basic rolls, and that I couldn't have gotten it from her because she was lazy and stupid.

As a child, growing up, I used to fight back on the last point: She was smart and she was beautiful and anything good about me surely had its roots in her. I believe now she used to denigrate herself in front of me in order to hear praise from someone, even if it was only a beloved child. I don't resent the manipulation. If intellect and focus were indeed the legacies of my invisible father, emotional manipulation was my mother's true gift, and it was as valuable. As important.

Because I was an adolescent when it began, I did not notice her symptoms until they were fairly advanced. My time was largely spent out of the house by then, playing football at a dirt-and-weed pitch south of the housing complex, running badly designed experiments with some garage-level makers and artists, exploring my own sexuality and the limits of the young men of my cohort. My days were filled with the smell of the city, the heat of the sun, and the promise that something joyous—a football win, a good project, a transporting affair—might come at any moment. I was a street rat living on basic, but the discovery of life was so rich and dramatic and profound that I wasn't concerned with my status in the larger culture. My social microenvironment seemed to stretch to the horizon, and the conflicts within it—whether Tomás or Carla would be goalie, whether Sabina could tweak off-the-shelf bacterial cultures to produce her own party drugs, whether Didi was homosexual and how to find out without courting humiliation and rejection—were profound dramas that would resonate through the ages. When, later, my project lead said *There is a period of developmental sociopathy in every life*, this is the time I thought of.

And then my mother dropped a glass. It was a good one, with thick, beveled sides and a lip like a jelly jar, and when it shattered, it sounded like a gunshot. Or that's how I remember it. Moments of significance can make maintaining objectivity difficult, but that is my memory of it: a thick, sturdy drinking glass catching the light as it fell from her hands, twirling in the air, and detonating on our kitchen floor. She cursed mildly and

went to fetch the broom to sweep up the shards. She walked awkwardly and fumbled with the dustpan. I sat at the table, an espresso growing cold in my hands while I watched her try to clean up after herself for five minutes. I felt horror at the time, an overwhelming sense of something wrong. The metaphor that came to me in the moment was my mother was being run remotely by someone who didn't understand the controls very well. The worst of it was her confusion when I asked her what was wrong. She had no idea what I was talking about.

After that, I began paying attention, checking in on her through the day. How long it had been going on, I couldn't say. The trouble she had finding words, especially early in the morning or late at night. The loss of coordination. The moments of confusion. They were little things, I told myself. The products of too little sleep or too much. She spent whole days watching the entertainment feeds out of Beijing, and then stayed up all night rearranging the pantry or washing her clothes in the sink for hours on end, her hands growing red and chapped from the soap as her mind was trapped, it seemed, by minor details. Her skin took on an ashen tone and a slackness came to her cheeks. The slow way her eyes moved reminded me of fish, and I began having the recurring nightmare that the sea had come to take her, and she was drowning there at the breakfast table with me sitting beside her powerless to help.

But whenever I talked about it, I only confused her. Nothing was wrong with her. She was just the same as she had ever been. She didn't have any trouble doing her chores. She wasn't uncoordinated. She didn't know what I was talking about. Even as her words choked her on their way out, she didn't know what I meant. Even as she listed like a drunk from her bed to the toilet, she experienced nothing out of the ordinary. And worse, she believed it. She genuinely thought I was saying these things to hurt her, and she didn't understand why I would. The sense that I was betraying her through my fear, that I was the cause of her distress rather than only a witness to something deeply wrong, left me weeping on the couch. She wasn't interested in going to the clinic; the lines there were always so long and there was no reason.

I got her to go the day before Ash Wednesday. We arrived early, and I had packed a lunch of roast chicken and barley bread. We made it to the intake nurse even before we ate, and then sat in the waiting area with its fake bamboo chairs and worn green carpet. A man just older than my mother sat across from us, his hands in fists on his knees as he struggled not to cough. The woman beside me, my age or younger, stared straight ahead, her hand on her belly like she was trying to hold in her guts. A child wailed behind us. I remember wondering why anyone who could afford to have a child would bring it to a basic clinic. My mother held my hand, then. For hours we sat together, her fingers woven with mine. For a time I told her everything would be all right.

The doctor was a thin-faced woman with earrings made of shell. I remember that her first name was the same as my mother's, that she smelled of rose water, and that her eyes had the shallow deadness of someone in shock. She didn't wait for me to finish telling her why we'd come in. The expert system had already pulled the records, told her what to expect. Type C Huntington's. The same, she told me (though my mother never had), that had killed my grandfather. Basic would cover palliative care, including psychoactives. She'd make the notation in the profile. The prescriptions would be delivered starting next week and would continue as long as they were needed. The doctor took my mother's hands, urged her in a rote and practiced tone to be brave, and left. Off to the next exam room, hopefully to someone whose life she might be able to save. My mother wobbled at me, her eyes finding me only slowly.

"What happened?" she asked, and I didn't know what to tell her.

It took my mother three more years to die. I have heard it said that how you spend your day is how you spend your life, and my days changed then. The football games, the late night parties, the flirtation with the other young men in my circle: all of it ended. I divided myself into three different young men: one a nurse to his failing mother, one a fierce student on a quest to understand the disease that was defining his life, and the last a victim of depression so profound it made bathing or

eating food a challenge. My own room was a cell just wide enough for my cot, with a frosted glass window that opened on an airshaft. My mother slept in a chair in front of the entertainment screen. Above us, a family of immigrants from the Balkan Shared Interest Zone clomped and shouted and fought, each footfall a reminder of the overwhelming density of humanity around us. I gave her ramen soup and a collection of government pills that were the most brightly colored things in the apartment. She grew impulsive, irritable, and slowly lost her ability to use language, though I think she understood me almost to the end.

I didn't see it at the time, but my options were to weave myself a lifeline from what I had at hand, abandon my mother in her final decline, or else die. I would not leave her, and I did not die. Instead I took her illness and made it my salvation. I read everything there was on type C Huntington's, the mechanism as it was understood, the research that was being done with it, the treatments that might someday manage it. When I didn't understand something, I found tutorials. I sent letters to the outreach programs of medical care centers and hospitals as far as Mars and Ganymede. I tracked down the biomakers I had known and drilled them with question—What was cytoplasmic regulation delay? How did mRNA inhibitor proteins address phenotypic expressions of primary DNA sequences? What did the Lynch-Noyon synthesis mean in respect to regrown neural tissues?—until it was clear they didn't understand what I was saying. I dove into a world of complexity so deep even the research watsons couldn't encompass it all.

What astounded me was that the cutting edge of human knowledge was so close. Before I educated myself, I assumed that there was a great depth of science, that every question of importance had been cataloged, studied, that all the answers were there, if only someone could query the datasets the right way. And for some things, that was true.

But for others—for things that I would have thought so important and simple that everyone would have known—the data simply wasn't there. How does the body flush plaque precursors out of cerebrospinal fluid? There were two papers:

one seventy years out of date that relied on assumptions about spinal circulation that had since been disproved, and one that drew all its data from seven Polynesian infants who had suffered brain injuries from anoxia or drug exposure or trauma.

There were explanations, of course, for this dearth of information: Human studies required human subjects, and ethical guidelines made rigorous studies next to impossible. One didn't give healthy babies a series of monthly spinal taps just because it would have been a good experimental design. I understood that, but to come to science expecting the great source of intellectual light and step so quickly into darkness was sobering. I began to keep a book of ignorance: questions that existing information could not answer and my amateurish, half-educated thoughts about how answers might be found.

Officially, my mother died of pneumonia. I had learned enough to understand what each of her drugs did, to read her fate from the pills that arrived. I knew by their shapes and colors and the cryptic letters pressed into their sides when the vast bureaucracy that administered basic health care had moved her from palliative care to full hospice. In the end, she was on little more than sedatives and antivirulence drugs. I gave them to her because it was what I had to give her. The night she died, I sat at her feet, my head resting on the red wool blanket that covered her wasted lap. Heartbreak and relief were my soul's twin bodyguards. She moved beyond pain or distress, and I told myself the worst was over.

The notification from basic came the next day. With my change in status, the rooms we had been in were no longer appropriate. I would be reassigned to a shared dormitory, but should be prepared to relocate to São Paulo or Bogotá, depending on availability. I thought—mistakenly, as it turned out—that I wasn't ready to leave Londrina. I moved in with a friend and former lover. He treated me gently, making coffee in the mornings and playing cards through the empty afternoons. He suggested that it might be less that I needed to stay in the city of my birth, the city of my mother, and more that I needed some control over the terms of my departure.



I applied to apprentice programs at London, Gdansk, and Luna and was rejected by all of them. I was competing against people who had years of formal schooling, political connections, and wealth. I lowered my expectations, searching for uplift programs that aimed specifically for autodidacts who had been living on basic, and six months later, I arrived in Tel Aviv and met Aaron, a former Talmudic scholar who had researched his way to atheism and was now my dorm mate.

The third night, we sat together on our little balcony looking out over the city. It was sunset, and we were both a little high on marijuana and wine. He asked me what my ambitions were.

“I want to understand,” I told him.

He shrugged only his left shoulder. “Understand what, Paolo? The mind of God? The reason for suffering?”

“Just how things work,” I said.

\* \* \*

It became clear immediately that Brown had become the most important person not only among the nanoinformatics group or even research in general, but in the entire room. Over the following days, Fong, who had never treated anyone in research as better than suspicious, deferred to him when the guards brought food. Drexler sat near him before lights-out, laughing at anything he said that might pass for a joke. When Sujai and Ma fell into one of their singing mock competitions, they invited Brown in, though he demurred.

Speculation ran in all directions: We would be extradited and tried for the dead Martians on Phoebe; the company had found diplomatic channels to negotiate for our release; the Outer Planets Alliance and the Martian Republic were at war and our fates were going to be part of the settlement. My own theory—the only one that really made sense to me—was that the experiment had been running all this time and something new had happened. Grave or miraculous, it carried a weight of importance and inscrutability that brought us back from our forgotten place in a Belter prison and into the light. The Martian had come because he needed the things that only we knew, and possibly needed it badly enough to overlook our

previous sins. In the observation windows above us, guards appeared more often now, usually with their attention fixed on Brown. It was not only the prisoners who found his new status of interest.

Brown himself changed, but not in the way others might have. While I believe he made use of the opportunities his new status afforded him, he did so rationally. He didn't hold himself more grandly, did not deepen the timbre of his voice. He did not hold court or bask in the new attention given to him. Humanity is social, and the self-image of humans is built from the versions of ourselves we see and hear reflected in others; that this is not true of the research group—of Coombs or Brown or Quintana or me—was, after all, precisely the point. Instead, Brown balanced his new power with the new risks it carried. He made an unofficial alliance with Fong, staying near her and her people so that, should Quintana or I try to take the hand terminal by force, there were others who could interfere in an attempt to curry favor with him.

Van Ark responded by eating and sleeping closer to Quintana and Alberto and myself. He'd had no love of Brown, and treated his elevation as an insult. The room was pulling itself apart like a cell preparing to divide. Brown and the Martian's hand terminal formed one locus. Quintana and I, the other.

We planned our theft quietly. When Brown sat bent over the terminal, he could not watch us talk, but Quintana and I were discreet all the same. I squatted at the side of a crash couch while he lay in it, facing away from me. The metal and ceramic made too hard a backrest, my spine aching where it pressed. I tried not to move my lips while we spoke. Fong, I felt sure, noticed us, but did nothing. Or perhaps she didn't see us. Fear kept me from looking around to find out.

"He has to sleep," Quintana said.

"He also has to wake up," I said, recalling Alberto's advice.

Quintana shifted on the couch, the gimbals hissing as the cup of the couch readjusted. Across the room, Brown sat near the hotel. The hand terminal flickered, throwing subtle

shadows onto his cheeks and the hollows around his eyes. With the right equipment, I could have modeled his face, its reflectivity, and rebuilt the image he was looking at. I realized that Quintana had been speaking, and I didn't know that he'd said. When I asked him to repeat himself, he sighed with a sound very much like the gimballs.

"Once I get it, you hide it," he said. "They'll question me. Search where I went. Then they'll have to give him another copy. Once that happens, we'll be safe. They won't care anymore. You can get it back out and give it to me. You won't even have to get in trouble."

"Won't they punish us?"

"He'll have the copy. Why would anyone care about the original?"

I suspected that analysis had some holes in it, but I didn't object, out of concern that Quintana would grow impatient and scrap the plan. I resolved instead to ask Alberto if he thought the stolen hand terminal would be trivial once a copy was delivered, but as things fell out, I didn't have the chance. Navarro, one of Fong's leadership from security, walked toward us. I coughed, alerting Quintana, and he changed to talking about the nutritional value of Belter food compared to the fare we'd had before the room, and the probable health effects that we could expect from our systematic malnutrition. Navarro sat at the next couch over, watching the guards at the window watch us. She didn't say anything. She didn't need to. The message—you're being watched—was clear.

That afternoon, the guards came early and took Brown away. They offered no explanation, simply found him there among us, nodded to the doors they'd entered through, and escorted him away. I watched him leave. My heart was in my throat, and I was certain it was already too late. If they were taking him to the Martian, he might never come back. When Brown returned to the room just before nightfall, confusion and worry pressed on his brow, but he carried the hand terminal with him.

That night as we curled up to sleep, I told Alberto of my fear that Brown and the hand terminal might vanish before I could see what was on it.

“Better if it did,” Alberto said, holding my hand. I didn’t know if he meant that with the irritant of hope gone, the room could return to something like its resting state, or something more personal between the two of us. I intended then to sound him out about Quintana’s plan, but he had other intentions that were more urgent and immediate, and when we were spent, I curled in his arms, warm and content in the way that being a masculine animal allows.

Either Brown’s temporary absence spurred Quintana to action sooner than planned, or he had told me his timetable when my attention was elsewhere. The first I knew that action had been taken was the screaming, then pelting footfalls going one way and the next. I tried to stand, but Alberto impeded me, and then, from the darkness, a dim glow. The plate of a hand terminal, moving toward me. Quintana loomed up out of the darkness, pressing hard ceramic into my hand. He didn’t speak, but ran on past me. I curled back with Alberto and waited. Brown was shrieking now, his voice bansheeing up until it threatened to rise above the wavelengths of human perception. And then Fong. And then Quintana proudly announcing that Brown didn’t deserve the data, couldn’t understand the data, and was going to doom us all to living and dying in the room out of his own misplaced pride.

I lay with my head against my lover’s shoulder, the hand terminal tucked beneath our bodies, while the other prisoners screamed and fought in the darkness, the first open combat in the war Alberto had foreseen. The Belter guards did not come. I felt sure their absence meant something, but I couldn’t say what.

I didn’t want to leave the relative safety and warmth of the crash couch, but I knew that the battle raging in the darkness was also my best cover. Quintana’s belief that I wouldn’t be questioned because he had taken the credit for stealing the terminal seemed optimistic to me. Worse, it seemed like the kind of asserted reality—the willful decision to believe that

people would act the way you preferred that they would—that posed a constant threat to those of us in research. I slid the terminal down the front of my already open jumpsuit and moved to rise from the couch, hoping the sound of the gimbals would be lost under the shouting.

Alberto took my hand for the space of a breath, and then released it. “Be careful,” he whispered.

As I moved through that darkness, the room felt even bigger than it was. I had the most precious thing in my life pressed against the skin of my belly while men and women whose voices I knew intimately, the compatriots of my years-long captivity, threatened and defied and wheedled and cried out in sudden pain. Like a stage magician’s arcing gesture, they commanded the attention and gave me the cover to do what needed to be done. I slid the hand terminal under one of the crash couches that defined the hotel, stepped back to see that no light was escaping from its dim display, and then trotted back to Alberto through the darkness, afraid to be caught away from my customary place.

The sudden harsh light of morning found Quintana sitting with his back against a wall, eyes blackened and swollen closed, nose and lips bloodied, and Fong organizing a search. I was among her first targets, and Alberto shortly after me. Brown opened a new round of shouts and accusations, and Fong had to set two of her people to prevent him from assaulting Quintana further. It occurred to me that Brown was making Quintana’s argument more effectively than Quintana had.

The sense of Brown’s status as our savior and best hope of freedom tarnished quickly in the next hours. I felt the confidence the others had in him faltering like the pressure of a coming storm. If they turned on him, unleashed the years of frustration and anxiety and despair upon his fragile human body, I didn’t think the guards would be able to reach him in time. It was an interesting possibility, but also a warning should I manage to put myself in his place.

As soon as it seemed plausible, I took Alberto by the hand and drew him toward the hotel. Hardberger and Navarro were

going through the crash couches near it, and I was anxious that they would find our golden apple before I had a chance to taste it. I thought Navarro scowled at me as I made my way toward privacy and the hiding place, but it might only have been my imagination. Once we were in the hotel and visually cut off, I retrieved the hand terminal.

Now, with light and proximity, I could actually see it: blue-gray casing with an extended keyboard for full scientific notations; a scratch along the right side of the screen that caught and refracted the light of the display, rainbows out of the yellow default image; a logo of the Mars Congressional Republic Navy stamped into the casing and echoed on the screen. I stroked it with my fingertips, feeling serene and untouchable. If church had felt half as good as this, I would have been a religious man.

With a sense of nearly superhuman calm, I opened the data files. Charts and reading appeared before me.

It was the experiment. *My* experiment. Only it also was not. The basic structures were there: the peculiar way the individual molecular engines unfolded; the instantaneous networking that suggested entanglement communication; the beautifully complicated tertiary beta sheeting studded with proteins dense with information and vulnerable to oxidation. I had the sudden, powerful memory of being in the lab on Phoebe seeing the nanoparticles express those sheets for the first time. Krantz had described it as *snowflake castles looking for the nearest blowtorch*.

They were still beautiful, still fragile, but they had defied the blowtorch. They had found ways to express themselves, creating what appeared to be massive constructions implied first in their microscopic structure, like an infinite cascade of fractal design. There were maps of control points that were clearly cellular machinery that had been hijacked and modified, complex layers of pattern-matching mechanisms that stank of human neocortical structures, and something... else.

I was looking at the oak and recognizing the acorn.

I spooled through the information as quickly as I could, taking in the first and last paragraphs of the reports, glancing at the diagrams and data just long enough to take a general sense of them and then moving on. The navigation keys of the hand terminal clicked as I pressed them, like I was crushing tiny beetles. There was clearly a deeper structure that the development of the beta sheets was protecting and promoting. I didn't begin to understand the energetic dynamics of it, but there was, I thought, a privileged group. Something about the logic of the individual particles reminded me of a paper I'd read in Tel Aviv that reexamined sperm. The thesis was that rather than a homogeneous collection of equally competing cells, there were classes of sperm; subspecies that acted as a team to present a chosen cell or class of cells to the ovum.

Alberto said my name, and I was aware of it the way I might have been aware of a candle flame in the noonday sun. It was there, but it had very little impact.

The privileged group could probably be identified by its place within the logical structure of the network, but something about that felt wrong. I paged back through the diagrams. I had the sense there was an asymmetry in the network someplace that I could almost—not quite, but almost—place. It was analogous to something I already knew about, but I didn't know what. I growled and went back to the start. Alberto said my name again, and I looked up too late.

Fong stood over us both, her expression carved from hardwood. I felt a flash of resentment at her interruption and swallowed it quickly. I held out the hand terminal.

"Look what I found," I said.

She took it from me and paused. I could see the desire to punish me in her mouth and the angle of her shoulders. Alberto squirmed beside me and Navarro appeared at Fong's side. I heard Brown yawp with delight. He'd caught sight of his lost treasure. I anticipated Quintana's anger and disappointment, but it didn't matter to me. My goal had never been to help him.

“Quintana’s an asshole, but he isn’t wrong. He won’t solve it,” I said, and Fong shook her head as if to say *I don’t know what you’re talking about*. I smiled tightly. “Brown won’t solve it. He won’t give them what they’re looking for. We may not get another chance.”

“That’s not how this works,” she said.

“I can help,” I said. “Tell him to let me help.” For a moment, it seemed as if she might reply, but instead she turned away without pressing the issue.

It felt like a victory.

\* \* \*

My advisor at Tel Aviv—David Artemis Kuhn—had a beautiful name, a way of wearing a formal jacket just messily enough to say he was in on the joke, and a voice that sounded like the first sip of rum feels: sharp and warm and relaxing. His office smelled of coffee and freshly turned soil. I admired him, I crushed on him, I aspired to be him. If he had told me to quit the university and write poetry, I probably would have.

“Nanoinformatics is perfect for you,” he said. “It’s deeply interdisciplinary. You can apply it to a career in medical research or computer architecture or microecology. Of all the degree programs we have, this is the one that will keep the most doors open for you. If you’re not sure what direction you want your studies to take you...” He paused and tapped his desk three times with the tip of his index finger. “This is the one.”

There is nothing so destructive and also so easy to overlook as a bad idea.

A thought experiment from my first course in the program: Take a bar of metal and put a single notch in it. The two lengths thus defined have a relationship that can be expressed as the ratio between them. In theory, therefore, any rational number can be expressed with a single mark on a bar of metal. Using a simple alphabetic code, a mark that calculated to a ratio of .1215225 could be read as 12-15-22-5, or “l-o-v-e.” The complete plays of Shakespeare could be written in a



single mark, if it were possible to measure accurately enough. Or the machine language expression of the most advanced expert systems, though by then the notch might be small enough that Planck's constant got in the way. How massive amounts of information could be expressed in and retrieved from infinitesimal objects was the driving concern of my college years. I swam in an intellectual sea of qubits and data implication, coding structures and Rényi entropy.

I spent days in the computation labs with their leather couches and ancient ceramic lockers, talking with people from all across the world and beyond. The first Belter I met was a woman from the L5 station who had come down to study crystallography, though since she lived in the consistent spin gravity of that station, she looked more like a Martian than the elongated soldiers who would eventually become my guards. My nights I divided between my dorm room and the bright bars and sober coffeehouses along the edge of the campus.

Slowly, I began to take the sad, traumatized boy who had fled Londrina and a life on basic and build from him a deeper, more serious, more focused man. I styled myself a scientist and wore the thin black vests and sand-colored silk shirts that the biology students had adopted as their fashion. I even joined the student union for scientific outreach, sitting through the long, angry, clove-cigarette-hazed meetings and arguing when people from the more traditional programs complained that my work was closer to philosophy than engineering.

I drank a bit of wine, I smoked a little marijuana, but the drugs that fueled the university were not recreational. Tel Aviv Autonomous University ran on nootropics: nicotine, caffeine, amphetamine, dextroamphetamine, methylphenidate, 2-oxopyrrolidine acetamide. Aaron, my roommate, provided both a route for these to reach me and the worldview that justified them.

"We're the bottom," he said, leaning on the arm of our cheap foam-sculpt couch. "You and me and everyone else in this place. If we weren't, we'd have gone to a real school."

"We're at a real school. We're doing good work here," I said. We were eating noodles and black sauce that they sold

from a cart that passed down the halls of the dorm house, and the smell of something like olives rose from every mouthful.

“Exactly,” Aaron said, stabbing a fork in my direction. “We are keeping up with the most advanced, best-funded schools anywhere. Us, a bunch of basic jump-ups. Our mommies aren’t giving multimillion-dollar grants to the school. We aren’t skating on discoveries made by some department chair seventy years ago. Do you think they have a nanoinformatics program at the École?”

“Yes,” I said, feeling contrary.

“They don’t. We do. Because we *have* to be on the cutting edge to survive. We don’t have status, we don’t have money, we don’t have any of the things you need to get a foot in the door with recruiters or unions or grant specialists. So we make our own.” With this he took a thin case from his pocket and rattled it. “What the others can’t, or won’t, or don’t feel like they need to do is just necessary for us.”

Deep in my chest, a sluggish sense of fairness twitched in its sleep, but I could find no argument against, especially since it seemed as though everyone else in the program agreed. What would make it unfair, I told myself, was if the drugs tilted the playing field. If everyone was using them, then it stayed even.

As my career at the university went on and I came nearer to the knife-edge horizon of graduating, I found myself caring less and less about the fairness of the situation and more and more about my own well-being. Since nanoinformatics was a new program it didn’t have its own permanent faculty. Half of the classes on its requirements list were borrowed from other programs, and the professors often hadn’t tailored the content to include me. In my culmination-level seminar, all of the other half-dozen students were strict biologists working from a shared curriculum that I had only brushed against. Taking focus drugs in that context seemed like the obvious thing.

In my last year, both Aaron and David Artemis Kuhn left. Aaron graduated early with a job offer for a cutting-edge R&D group so deep, even its name was under nondisclosure. Kuhn

left to take a tenure-track position at Nankai University on Luna, heading up their nascent nanoinformatics program. I acquired other friends and professors in my time at Tel Aviv, but I found the absence of those two particularly unmooring, and my use of drugs ramped slowly up. I came to include sedatives in my study rituals, telling myself that they helped me rest and recharge. That I enjoyed the sense of release and mindlessness they brought, I chose to interpret as the measure of the stress I was under.

My graduation ceremony took place in a synagogue with white pillars and arches, beautiful sculpture in gold along the walls, and Hebrew script inlaid around the ceiling. The notes of “Auld Lang Syne” reverberated in the space, the melody taking on a depth and gravity I had never ascribed to it. My body, struggling from the massive nootropic abuse surrounding final examinations compounded by several whisky-and-sodas, punished me with nausea and dizziness. I spent my glorious hour, the pinnacle of my new life, trying not to vomit. I didn’t know whether to imagine my mother’s spirit viewing me from the afterlife with pride or despair. Afterward, diploma in hand, robes draped from my shoulders, I walked to a public park, sat on a stone bench, and wept, calling my mother’s name with an oceanic grief I had avoided for years.

It would be difficult to say which sign of trouble deserved the title “first.” When I visited my placement advisor after graduation, I spent an hour explaining to her what my degree entailed and applied to. It left her only slightly better prepared to help me find work. Letters began to arrive—actual physical letters on thin, yellow paper—from the benefits administration office asking whether I would be returning to the basic rolls. My applications to Stravos Group, Beyaz/Siyah, and Unfinished History all brought acknowledgments of receipt, and then nothing.

I laughed it all off for three months. I told myself and my friends that the cutting edge always confused the people who weren’t part of it. My advisor’s job wasn’t to understand me, just to make connections. If she couldn’t, other paths existed. I played it as more an inconvenience than a problem, and the prospect of going back on basic as laughable. I had a degree

from a recognized university. I had letters of recommendation. The cheap housing, gray-tasting food, recycled clothing, and minimalist medical care of basic marked where I came from, not where I was going. The applications took longer than I'd expected, but I could be patient. I still had six months of supported postgraduate housing, until I had three, and then seven weeks, and then twelve days.

When I could no longer ignore that I would be out of housing allowance before I found employment, my friends had for the most part scattered to new positions of their own. The sense of isolation pressed at the back of my head all through the days and nights. I began growing angry at the slightest provocation.

In practice, the course of study meant to give me the most options had instead left me as the fourth-rank pick for everything behind people who had specialized. And even that was not the worst of my problems. I assumed that after my last exams, my use of nootropics and sedatives would end more or less of its own accord. The need, after all, evaporated. If now and then I used a tab to help me navigate the surprising complexities of my postgraduation world, others did as much with no stigma or ill effect. Without the drugs, my merely normal cognition felt sluggish and unfocused. And the sedatives were only to make my sleep deeper, more restful, more productive.

The penny dropped for me at a café on Yigal Alon Street where I sat under a copper awning with my hand terminal cradled in my palms. Over a cup of tea and a bit of scone, I reviewed my expenses with an eye toward how I could extend my job search without going on basic. The first-pass numbers felt like a kick in the gut. When I redid the math, I found the same thing. In the months since completing my program, my drug use had gone *up*.

I don't know how long I sat there, the waiter coming by now and again to touch my shoulder and ask if I was well. I remember very clearly that there were two young women at the table beside me planning a wedding while I came to grips with the truths I had denied. I'd exchanged Londrina and life

on basic for a degree I couldn't use and a rainbow of addictions. I was, if anything, worse off now than when I had spent my days watching my mother fade into death.

I can't say why at that point I didn't fall into despair. Despair was certainly open to me. In practice, I did not. Instead, I made what I called my rescue plan: a list of fifty work positions that, while they fit poorly with my education and ambitions, would suffice to keep me off basic; a consolidated account with what little actual money remained to me; a month's supply of fruit and whole grain foods; a hotel room where I could sleep and pace and weep while I withdrew. I put in my fifty applications all at once, checked in to my exclusive and unlicensed treatment center overlooking an alleyway, and prepared myself for hell.

I did not sleep for the first week. My body ached like I'd been beaten. My eyes dried until my vision grew blurry. I watched my emotions cycle up and down and up again, the wavelength of my illness growing shorter and shorter until I could no longer tell where in the cycle I was. The cravings were like hunger or thirst or overwhelming lust, and I only postponed acting on them by promising myself that if I still wanted so badly when I was done, I would indulge myself to death. I anticipated my eventual overdose like a zealot looking forward to Armageddon.

I have no clear memory of the second week. When I came to myself again in the middle of the third week—ten days still remaining on my rented room—I felt weak and hungry and clear headed in a way I had not realized until then how much I missed. My mind was my own. I could not help but think of my mother and the way her disease blinded her to its own symptoms. I understood her better then. My own addiction functioned in a similar way. In the exhaustion of my recovery, I dreamed of finding doors that had been plastered over that opened to rooms I'd had once and forgotten about, filled with books and scientific instruments that I needed and had been unable to locate. The metaphor wasn't subtle. I swore that I would never compromise my mind that way again, though like all such resolutions, I have since broken it profoundly.

With seven days remaining, I bathed, shaved, and took myself out for a meal of eggs and coffee I could barely afford. My time in the underworld nearly over—so I thought—I had to prepare for my return to the world of the living. If there was nothing waiting for me, that meant turning myself over to benefits administration. I cannot express how terrible that option seemed to me, but I was willing to face it, should it prove necessary. I thought I had moved beyond illusions about myself and what I was capable of enduring. That might even have been true. Remembering what I felt then and feeling it again now are very different things, and one is easier than the other.

I had five messages waiting. Four were from the applications I had sent out, two asking for more information about my qualifications, two scheduling interviews. The last, to my surprise, was Aaron returning to my life. His research-and-development gig had come across something that justified bumping up the budget. There were new positions opening up, including a full nanoinformatics team. Later, I would wonder if I saw the changes in him even then. A recording on a terminal can't carry the same weight of nuance as an actual conversation and sociopathy often approaches undetectability, even under the best of circumstances. I hope that I genuinely missed it. If I saw it and chose to edit it out of my perceptions, if the leaping hope in my breast was more important to me than the new-won integrity of my mind, it speaks poorly of me. I would rather be damned as naïve than willfully ignorant.

I responded at once: I would be delighted to talk about work. I told him that, just between the two of us, I'd been in a dry spell, and was even beginning to think that David Artemis Kuhn had led me astray with his professorial charisma and beautiful name. I made a joke of my season in hell, telling him but also not telling him, afraid of what he would think of me. At the time I gave more weight to the opinions of others.

Aaron's response came quickly. He'd spoken to the powers that be, and the project lead wanted to speak with me. He would be reaching out in the next few days. His name, so I could expect it, was Antony Dresden.

\* \* \*

The others, even Alberto, didn't really understand what it meant to be research. I do believe that's true. On Thoth Station, we were treated as different—as dangerous—which we were. But their sense of our monstrosity was misplaced. The changes that we went through to become what we became didn't blind us to humanity. Our emotional lives didn't stop. All of us in research suffered the same loves and hopes and jealousies that administration and maintenance and security did. If someone felt flattered or excluded or tired, we saw it just as anyone else might. The difference, and I think it was the only difference, came from not caring anymore.

The confusion rose from metaphors of mental illness. The others thought of research as a collection of borderline autistics, and while there were several who did participate on that spectrum—Owsley in chemical signaling, Arbrecht in modeling—they were not created. They brought their diagnoses to the table with them. The other pigeonhole, sociopathy, was nearer the truth, though I believe there were still some differences.

I remembered caring about people. My mother. Samuel, a boy two years my senior, who was my first lover. Aaron. I remembered caring deeply about whether they were well, whether they suffered, what they thought of me. I remember defining myself by the opinions of people around me. My worth had been determined from without, by how I imagined that I appeared to others. That is what being a social animal is, after all. Emotional and definitional interdependence. I remembered it like remembering that I once knew a song, but not the melody itself.

Quintana broke my nose.

It was midmorning, as we reckoned such things in the room, and Brown, his precious hand terminal clutched to his breast, had been taken away by the guards again. Alberto and I walked, making a slow circuit of the room for the simple pleasure of feeling my body in motion. I had just reached the corner farthest from the hotel when Quintana walked up to us. The benignity of his expression surprised me at first. I

expected rage or sorrow or confusion. Alberto recognized something threatening in Quintana's demeanor before I did. He shouted and tried to push me out of the way, but Quintana stepped in close, twisting his body from the waist. His elbow hit the bridge of my nose with a sound like a wine glass being stepped on: sharp and deep at the same time.

I rolled to my side, uncertain how I'd fallen down. My hands guarded my abused face but didn't touch it. Contact made the pain worse. Blood ran down my cheeks and dampened the collar of my jumpsuit. Shouting voices came at me from a great distance that turned out to be about four meters. Alberto and two of Fong's men wrestled Quintana, pushing him back and away from me. Half a dozen other prisoners ran toward us, to help keep the peace or to watch it being broken. Quintana's voice buzzed with rage so badly I couldn't understand what he was calling me or threatening me with. I rose to my knees and looked up. The Belter guards leaning on the windows above us seemed slightly less bored than usual. One, a woman with short red hair and a tattoo across her chin, smiled at me sympathetically and shrugged. I stood, but the throbbing pain brought me to my knees again.

Quintana turned away, followed by Fong herself to make certain he wouldn't circle back. The others watched them go, then Alberto came to my side.

"I told you war would come out of it."

"You're so very smart," I said, the sound of my voice like something from a child's cartoon.

He took my guarding hands and gently guided them away. "Let's survey the damage," he said. And then, "Oh, darling. You poor thing."

They stuffed my nose with two tampons donated by women in security before we reset it. Our Belter guards never made an appearance. The politics of the enormous room were our own to work through, and the Belters took no side. Still, when Brown and his escort did come, no one in the room talked about anything but the violence he'd missed.



The guards didn't allow us mirrors. The expressions of the others gave me the nearest thing to a reflection, and from that I assumed I looked pretty rough. Albert ripped the sleeve from his jumpsuit and dampened it at the showers. My drying blood grew sticky, adhering my suit and beard to my skin and tugging at me when I moved. I sat with my back to the wall, accepting Alberto's ministrations with as much grace as I could muster. I saw Brown approach Fong, watched them speak. Brown kept shifting his weight from one foot to the other and glancing behind him, as if expecting to be Quintana's next target. I waited, still and patient, afraid that any movement on my part would scare him off. Quintana paced at the far end of the room, muttering to himself with several of Fong's security people and Mellin from imaging. Around me, the narrative of the room changed. With Quintana as the villain, I shifted to being the victim. And as the victim, approachable.

"Fong told me what happened. You look like shit," Brown said, establishing dominance before he had to admit weakness.

"I blame myself," I replied, then paused, making it a joke. "No, actually, I blame Quintana."

Alberto, approaching with a freshly dampened rag, caught sight of us, paused, and angled off to sit by himself. Brown lowered himself to sit beside me. "He's always been an asshole."

I grunted my agreement and waited. Brown shifted, fidgeted. A tightness filled my gut, and the certainty that he would offer me his sympathy and walk away filled my throat. I took hold of his arm as if I could keep him there by force, but spoke calmly. "He's been talking to you a lot?"

"They have," he said. "The Martian officer hasn't been there. It's just the Belter guards."

"What do they say?"

"They ask me what it is."

"And what do you tell them?" I asked. When he didn't respond, I tried again. "What is it?"

“It’s an elaboration of the original protomolecule sample. You saw that much, didn’t you? Before you gave back the terminal?”

“I did,” I said. Candor about that cost me nothing.

“The thing is, they know. I’m sure of it. This isn’t a problem they need to solve. It’s a test. They want to see if we can solve a puzzle they’ve already cracked. They don’t say it, but I can hear them laughing at me.”

That piqued me, but this wasn’t the moment to sit with it. Brown’s open shell gave me my opportunity, and I drove my knife in to keep him from closing again. “Tell them they need two. Tell them to take both of us, and I’ll help.”

I saw the spark of greed in his eyes, his moment of bovine cunning. Once I helped him, I would have no way to enforce any agreement, and so his betrayal of me carried no price. I fought to keep my expression innocent. My wounds and my beard helped with that, I think.

“Thank you, Cortázar,” he said, and drew the hand terminal from his jumpsuit.

I took it from him gently, forcing myself not to grab at it. Under my fingertips, the files bloomed like roses, measurements and images and analytic summaries opening one after the next like diving into an ocean of data. The surface I had skimmed before lay over an abyss, and I fell joyfully into it. Some of the large-scale structures boasted an organic origin: lipid bilayers, proton pumps, something that might once have been a ribosome now altered almost past recognition. That, I believed, had led Brown astray.

He assumed that a cell membrane would be acting as a cell membrane, rather than considering what cell membranes did and how they might be used to some purpose other than simply creating a boundary between things. They could just as easily provide highways for molecules vulnerable to the partial charge of water molecules. Or any polar solvent. Like the optical illusion of faces and vases, the bilayers could define either the volumes separating them or the web of pathways

they created. And these were only massive, macro-scale expressions of the information in the initial particles.

I paged through, going deeper, my mind sailing across seas of inference and assumption. Time did not stop so much as become irrelevant. I forgot that Brown was beside me until he touched my shoulder.

“It’s...interesting. Let me see what I can find.”

“Just understand,” he said. “I’m lead.”

“Of course,” I said. As if I could have forgotten.

It took me longer than I would have liked, sitting with the data and dredging up what I could remember of the experiments before. Time had eaten some of my memory and likely falsified some as well. The core of it remained, though. And the sense of wonder so deep it sucked my lungs empty from time to time. But slowly, I found a pattern. The thing at the center. What I thought of as the Queen Bee. While a great many of the structures I was looking at were beyond my understanding—beyond, I thought, any human understanding—there were others that did make some sense. Lattices that mimicked the beta sheets and expanded on them. Complex control and pattern-matching systems that were still just recognizable as brain tissues, two-stage pumps adapted from hearts. And at the center, a particle that nothing led to. A particle that both required and provided a massive amount of energy.

When I realized that the physical dimensions of the structure-particle were macroscopic, the knowledge rushed through me like a flood. I was seeing a stabilizing network that could bring subquantum effects up to a classical scale. A signaling device that ignored the speed of light by shrugging off locality, or possibly a stable wormhole. If I wept, I wept quietly. No one could know what I’d found. Especially not Brown.

Not until I had time to make my alternate.

“There’s no doubt we’re seeing the ruins of Eros,” I said.

“Obviously,” he said, impatient and rightly so.

“But look at these tertiary structures,” I said, pulling up the graphic I’d prepared. “The connection between networks follows the same graph as embryonic profusion.”

“It’s making...”

“An *egg*,” I said.

Brown snatched the hand terminal from me, his eyes jerking back and forth as he compared my graphs. It was a plausible lie, backed by fascinating and evocative correlations that didn’t share a shred of cause. It built on his prejudices of biological structures being used for biological uses. I watched his face as he followed along the arguments I’d constructed to mislead him. He had been desperate for a narrative, and now that I’d given him one, it seemed unlikely that he would see anything else. I don’t know whether relief or awe set his hands to trembling, only that they trembled.

“This is it,” he said. “This is what gets us out of here.”

I appreciated his use of the plural, and I didn’t for a moment consider it sincere. I clapped him on the shoulder, levered myself up, and left him to convince himself of what he already wanted to believe. The others stood scattered about the room in groups of two and three and four. Whatever they pretended, all attention focused on Brown, and because of him, on me. I reached an open space and considered the observation windows. The Belters looked down on us. On me. Their weirdly large heads, their thin, elongated bodies. Chromosomally, they were as human as I was. What separated each of us—them and me—from the rest of humanity happened at much later stages than the genetic. I caught the eye of a greasy-haired man I recognized as one who had taken Brown to and from his sessions. I lifted my arms in a kind of boast. *I know your secret. I solved your puzzle.*

Brown bonded with the wrong answer. Quintana hadn’t so much as been allowed a glimpse of the dataset. All I needed was for the Martian to ask me as well as Brown, and I would be the one they took. The prisoner they exchanged.

If something still nagged at my hindbrain—the guards hadn’t come when Quintana stole the terminal, the Martian

hadn't been there during Brown's questioning—it had no form, and so I pushed it away. But there was a moment, that hypnagogic shift where the thoughts of the day faded into dream and the guards of rationality fell.

The poisoned thought crept in upon me then, and I went from my half doze to a cold terror in less than a heartbeat.

“It's okay,” Alberto said. “It's a nightmare. They're watching him.” I looked down at him, my heart beating so violently I thought it might fail. In the shadows, Alberto rolled his eyes and turned his back to me, his head pillowed by his arm. It took me a moment to understand his assumption. He thought I feared Quintana. He was mistaken.

The filthy thought that had slipped into me was this: If the Belters were negotiating a trade of prisoners with Mars then they might well still be enemies. If they were enemies, the Belters would want to give over whatever they had with the least intrinsic value. The Belter guards had questioned Brown twice now, without the Martian present. They might very well be probing not to see whether he had divined the secrets the data held, but to determine that he couldn't.

By trotting out my idiotic egg hypothesis, Brown might prove to our guards that he would be of the least use to their enemies. Or Quintana, by his violence and ham-handed duplicity, might convince them that Mars wouldn't be able to work with such a fragile and volatile ego.

I'd plotted my course assuming that being competent, insightful, and easy to work with would bring reward.

I astonished myself. To have come so far, through so much, and still be so naïve...

\* \* \*

“Say I'm developing a veterinary protocol for...I don't know. For horses. Should I start by trying it in pigeons?” Antony Dresden asked. He was a handsome man, and radiated charisma like a fire shedding heat. Protogen's intake facility looked more like a high-end medical clinic than an administrative office. Small, individual rooms with medical

bays, autodocs, and a glass wall facing a nurses' station outside able to look in on them all, panopticon style. The company logo and motto—*First. Fastest. Furthest.*—were in green inlay on the walls.

The language in my contract mentioned a properly supervised medical performance regimen, and I assumed this had to do with that, but it still felt odd.

"I'd probably recommend trying it in horses," I said.

"Why?"

"Because that's the animal you're trying to develop a protocol for," I said, my voice turning up at the end of the sentence as if it were a question.

Dresden's smile encouraged me. "The pigeon data wouldn't tell me just as much?"

"No, sir. Pigeons and horses are very different animals. They don't work the same ways."

"I agree. So do you think animal testing is ethical?"

"Of course it is," I said.

"Why?" The sharpness of the word unnerved me. My belly tightened and I found myself plucking at my hands.

"We need to know that drugs and treatments are safe before we start human testing," I said. "The amount of human suffering that animal testing prevents is massive."

"So the ends justify the means?"

"That seems a provocative way to phrase it, but yes."

"Why not for horses?"

I shifted. The wax paper on the examination table crinkled under me. I had the sense that this was a trick, that I was in some kind of danger, but I couldn't imagine any other answer. "I don't understand," I said.

"That's okay," Dresden said. "This is an intake conversation. Purely routine. Do you think a rat is the same as a human being?"

“I think it’s often close enough for preliminary data,” I said.

“Do you think rats are capable of suffering?”

“I think there is absolutely an ethical obligation to avoid any unnecessary suffering—”

“Not the question. Are they capable of suffering?”

I crossed my arms. “I suppose they are.”

“But their suffering doesn’t matter as much as ours,” Dresden said. “You seem uncomfortable. Did I say something to make you uncomfortable?”

At the nurses’ station, a man glanced up, catching my gaze, and then looked away. The autodoc in the wall chimed in a calm tritone. “I don’t see the point of the question, sir.”

“You will,” he said. “Don’t worry about it. We’re just getting a baseline for some things. Pupil dilation, eye movement, respiration. You’re not in any danger. Let me make a suggestion. Just see how you respond to it?”

“All right.”

“The idea that animal suffering is less important than human suffering is a religious one. It assumes a special creation, and that we—you and I—are different *in kind* than other animals. We are *morally* separate from rats or horses or chimps, not based on any particular physical difference between us, but just because we claim that we’re sacred by our nature and have dominion over them. It’s a story we tell that lets us do what we do. Consider the question without that filter, and it looks very different.

“You said there’s an ethical obligation to avoid unnecessary suffering. I agree. That’s why getting good data is our primary responsibility. Good experimental design, deep datasets, parallel studies whenever they don’t interfere. Bad data is just another way of saying needless suffering. And torturing rats to see how humans would respond? It’s *terrible* data because rats aren’t humans any more than pigeons are horses.”

“Wait, so you’re...are you saying that skipping animal testing entirely and going straight to human trials is...is *more*

*ethical?”*

“We are the animal we’re trying to build a protocol for. It’s where we’d get the best data. And better data means less suffering in the long run. More *human* suffering, maybe, but less suffering *overall*. And we wouldn’t have to labor under the hypocrisy of understanding evolution and also pretending there’s some kind of firewall between us and other mammals. That sounds restful, don’t you think?” The autodoc chimed again. Dresden looked at it and smiled. “Great. So tell me only the good things you remember about your mother.” At my horrified look, he smiled and waved the comment away. “No, I’m joking. I don’t need to know that.”

Dresden turned to the glass wall and gestured. A young woman in a lab coat with a stethoscope around her neck like a torc came in and guided me gently back to prone. As she did Dresden leaned against the wall, casual and at ease.

“This is part of our proprietary research regimen,” he said. “Performance enhancement strategies. The thing that gives us our edge.”

Looking back now, I believe I felt something like fear in that moment. A sense that important decisions were being made that I was only dimly aware of. Dresden’s smile and the doctor’s nonchalance seemed to belie that feeling, but for a moment I almost demanded that they stop, that they let me leave.

I’m not sure if that memory is true, but fear tends to be the thing I feel and remember most acutely now, so that leads me to believe it is.

Before I could act on my fear, the doctor leaned in close to me. She smelled of lilacs. “You might feel a little odd,” she said. “Can you please count backward from twenty?”

I did, the autodoc clicking and shifting on the wall as the numbers grew smaller and smaller. At twelve I stuttered, lost myself. The doctor said something, but I couldn’t make sense of her words or find any of my own. Dresden answered her, and the ticking stopped. The doctor smiled at me. She had very



kind eyes. Sometime later—a minute, an hour—language came back to me. Dresden was still there.

“The preliminary we’re doing here is magnetic. It suppresses some very specific, targeted areas of your brain. Reduces fixity. Some our staff finds that it helps them see things they wouldn’t have otherwise.”

“It feels...”

“I know,” he said, tapping his temple. “I did it too.”

I sat up. A feeling of almost superhuman clarity washed through me. A calm like the sea after a storm smoothed my muscles. It was better than all the drugs I’d taken at the university—the focus of the nootropics, the euphoria of the sedatives. I remember thinking at the time *Ooh, this could get addictive*. Whatever fear I might have felt no longer seemed important.

“It’s nice,” I said.

“So tell me,” he said. “Is animal testing ethical? Or does it make more sense to skip to human trials?”

I blinked at him, and then I laughed. I remembered the distress I’d felt when he’d asked the same thing just minutes before, but I no longer experienced it. A clarity and calm took that space for its own, and the relief felt joyful, like I’d just heard the punch line to the best joke ever. I couldn’t stop giggling. That was the moment I became *research*. I have never regretted it.

Necessity, they say, is the mother of invention, but it is the mother of any number of other things as well: sacrifice and monstrosity and metamorphosis. Necessity is the mother of all necessary things, to coin a tautology. I gave my permission to make the change permanent that afternoon without ever dipping back into my previous cognitive states. I didn’t miss or want them. Excitement fizzed in my belly; freedom as I’d never known it sang in my blood. A burden I hadn’t known I was carrying vanished, and my mind became sharper, able to reach into places that shame or guilt or neurosis would have

kept me from before. I didn't want to be what I had previously been any more than a depressive would long for despair.

And anyway, as Dresden said, we at Protogen weren't concerned with remaking the destiny of rats and pigeons.

I left Earth for the first time when I shipped to Phoebe. All I knew of the planets and dwarf planets and moons that made the habitable human system—Mars, Ceres, Pallas, Ganymede—I learned from watching the feeds. The politics of the alliance between Earth and Mars, the dangers posed by the Outer Planets Alliance and other Belter resistance groups. The story of mankind's torturous reach out into the vast emptiness of the system formed a complex story that felt as removed from my experience as the crime dramas and musical comedies that appeared on the same feeds as the news. Phoebe Station wasn't even among that number.

An obscure moon of Saturn, it began as a cometary object that found itself trapped by the gas giant's gravity as it passed by, presumably from the Kuiper Belt. It stood out from the other moons, four times as far from the planet as the next nearest. Its retrograde orbit and the lampblack darkness of its surface gave it a sense of menace. Phoebe, the ill-omened moon.

The alien weapon.

Tucked within the planetesimal's icy layers, the joint research group—Protogen and the Martian Naval Scientific Service—had found tiny reactive particles the size, roughly, of a midrange virus, but with a design structure and informational depth unlike anything Earth's biosphere had ever imagined. The protomolecule, we called it, branding it immediately in a territorial move that irritated the Martian scientists. We ignored their protests as irrelevant.

Our best guess was that it had been sent from some distance we couldn't guess at a time when a defined cell membrane stood as the heights of terrestrial life. The protomolecule appeared to be a message in a bottle, but one that included its own grammar books and instruction tutorials, ready to teach whatever aboriginal cells it found how to become the things it

required. We argued whether something as inert as a spore might be intelligent, at least implicitly, but without coming to a conclusion. The first evidence of a tree of life apart from our own enchanted and confounded us. Me.

The base itself showed its military origins in its bones. The corridors, hardened to shield us all from the void's vicious background radiation, were in the colors of the Martian navy. Each hallway bore the identification marks that told installation order, structural specifications, location within the base, and the date on which it needed replacement. The walls sported the same anti-spalling coatings as the ships. The food in the mess tasted of Mars: hot chile peppers, hydroponic fruit, ramen noodles in vacuum-sealed pouches, daily low-g pharmaceuticals. We had no extra space. The rooms I'd had on basic were larger than the cells I lived in there: a rack of bunks four high with a shared head so small that I braced my knees against the opposite wall every time I used the toilet. Of my eighty-five kilograms, I felt a little over three. Exercise took almost a third of the day, the lab a third, eating and sleeping and showering in the tight steel-and-ceramic shower a third.

The Protogen nanoinformatics team there claimed only four seats: Trinh, Quintana, Le, and myself. Mars had a matching number who joined us. The others would join in later, when we shifted to Thoth Station, though by then the Martian contingent would no longer be in play. The rest of the research team wasn't more than fifty, all told. With our counterparts from Mars and the naval support staff, Phoebe Base was a few hundred people on a black snowball so far from Earth that the sun would have been no more than the brightest star if we had ever looked for it.

If I chose a time in my life to return to, a high-water mark, those months on Phoebe would be it. The protomolecule astounded me every day. The depth of information in it, the elegance of its utterly minimal quasi-flagella, the eerie way it self-organized. One day I would convince myself that we were looking at something like a hive of termites, the next a colony of mold spores, the next neurons in a weird distributed brain. I struggled to find analogies, to make what I saw in the scanners fit into what I already knew. Every night, I slipped into my

bunk, strapping myself down with wide padded straps to keep from throwing myself out with an unintentional twitch, and thought of what I'd seen and heard, what tricks the protomolecule had performed that day. We were all of us in research quivering with the sense of being just a moment from revelation.

When the news came from Dresden's office of the second- and third-phase plans, I felt like the universe had leaned down and kissed my cheek. The opportunity to see what the protomolecule chose to do with large-scale structures was the best thing I could have imagined. The prospect filled me to the point of spilling over, and then filled me some more.

We killed the Martians in the middle of my work shift. It had all been plotted out, of course. Planned in back channels where our partners wouldn't hear us. When the moment came, I left my desk, moving toward the head, but paused to key in the override sequence. The Martians didn't notice anything. Not right away. And by the time they did, it was too late. We infected them and trapped them in a sealed level 4 containment lab. Watching the initial infection stages work on humans set the course for everything that would come later, but we couldn't afford to let the transformation fully run its course in a location we didn't control. So once we had our early-stage data, we gassed them and then burned the bodies.

When the *Anubis* arrived to retrieve the team and our precious samples, I walked to the dock with an odd wistfulness but also with a sense of anticipation. On the one hand, I'd loved my time there, and I would never again walk through these corridors. On the other, the experiment rising on my personal horizon promised to crack open everything we understood about the universe. I anticipated seeing the fascinating little particles arrange themselves, expressing layers of implicit information like a lotus eternally blooming.

When the ship left, the plume of our fusion drive finished sterilizing the base. The dataset we took from the infected Martians, while interesting and evocative, suffered from a relatively small absolute biomass. Phoebe base was smaller than a city elementary school, and our analyses strongly

suggested that the protomolecule went through behavioral phase changes with increased mass as profound as a switch between states of matter.

In the ship burning toward Thoth Station, the team sat in the galley, putting up models to show how the men and women we'd recently shared meals and sometimes bunks with had been infected, disassembled, and repurposed into larger-scale tools to express the protomolecule's same underlying information structure. Trinh maintained that her data scheme outperformed Quintana's and she did so with a ferocity that ended with her stabbing a fork into his thigh and being confined to quarters. There were also rumors of assaults among the other research groups, the natural expression, I thought, of the excitement and stress we had all been under. I was almost certainly projecting, but I couldn't help comparing us to our subject. All of us in research had become exotics, and with time and changing environments, we—like it—would reassemble and reconfigure and become something unpredictable and possibly glorious.

We had almost reached the flip-and-burn at the middle of our transit when it occurred to me that the vast sorrow I had carried with me since the day my mother dropped the glass was gone. I could think of her now without weeping, without wanting to bury myself in activity or anesthetize myself with drugs. I didn't know if it was because I had finished the natural progression of grief, or if the process of becoming *research* had burned the ability to feel that guilt and horror out of me.

Either way, it was a good sign.

\* \* \*

I didn't sleep again that night, though occasional slips of dream assaulted me when I slipped into a light doze. In these I searched an empty room for something precious I knew belonged there. In the periods when full wakefulness pinched me, I wrestled with strategies and second guesses. The prohibition against changing a first answer served me well in university, as it had generations of students before. Now and here, the certainty that change offered me my only hope

seemed obvious and suspect and obvious again, switching valence sometimes with every breath. The urge to run to Brown and destroy the arguments I'd made before, show him the real truth behind the data on his hand terminal, warred with the fear that doing so condemned me to life and death in the room. I remembered old comedy routines about intellectuals overthinking problems: I know, but he knows I know, but I know he knows I know, and on and on until subtlety iterated itself into the absurd.

Brown suffered none of it. All that morning he walked through the room, smiling and nodding to our fellow prisoners. Quintana sulked in a far corner of the room, sitting by himself and glowering across the emptiness at us. He stayed too far away for me to make out his features, but I imagined him in a permanent scowl. Alberto tried to engage me in conversation, concerned, I think, by my sullenness.

When the doors opened and the guards appeared carrying our morning meals of textured yeast protein in the spun-starch boxes that we ate as dessert, a spike of cold horror split me, and I came to my decision. Brown trotted toward them, beaming. I ran across to him, waving my arms to catch his attention, and coincidentally the guards' and Fong's as well. That my action aided Quintana's plan only became clear later. It wasn't my intention.

"I was wrong," I said plucking Brown's sleeve like a child imploring his father. "It came to me last night. I was wrong."

"No, you weren't," Brown said, his tone impatient. "I went over all of it."

"Not all. There's more. I know more. I can *show* you."

A tall woman with hundreds of tiny black moles dotting her face led the guards. I knew her as I knew all the Belter guards: as a force of nature imposed on us. Still, I'd seen her enough for the familiarity of her face to let me read the curiosity in her. I plucked Brown's sleeve more anxiously, trying to draw him away, out of her earshot. The conviction that the Belters would give the Martian the worst, not the best, of research seemed self-evident now. I feared letting her hear me say

something that might suggest I knew the truth. Brown didn't move, so I leaned in closer to him.

"It's not an egg," I hissed. "It's the support frame for a stable nonlocality. Something to pass information. Maybe even mass. It only looks biological because it co-opted biological material."

For the first time, I saw doubt flicker in Brown's eyes. I hoped that truth would be enough to sway his certainty. "Bullshit," he said. I'd done my work too well.

"Do an implicit structure analysis," I said. "Look at the membranes as pathways, not walls. See how the resonances reinforce. The protomolecule *opened* something. It's not an alien, it's a way for the aliens to talk to us. Or to *get* here. Don't trust me. Look at the *data*."

Brown looked deeply into my eyes, as if he could measure my sincerity from my pupils. A voice behind us rose in a weirdly strangled cry, and I turned toward it.

That is the last clear memory I have for a time.

I had never been stabbed before. It wasn't at all what I would have guessed. My recollection is of a sudden impact driving me up and off my feet. Very loud shouting, very far away as multiple voices barked conflicted orders, though to whom I couldn't say. The unmistakable and assaulting noise of gunfire. Lying on the deck, looking up at the empty row of observation windows, convinced that I'd been hit or kicked hard enough to break one of my ribs, then putting my hand to my side and finding it bloody and reaching the conclusion that, no, I'd been shot. Quintana, four meters away, his head and chest mutilated by bullets. I have a vivid image of Fong standing over his body with a pistol in her hand, but I'm almost certain of that memory's falsehood. I can't imagine the Belter guards suffering us to be armed, even if we shared a common enemy.

Other shards of my memory of the attack, though more plausible, have nothing I can attach them to. Alberto with his hands in bloody fists. The Belter guards pressing their bodies over mine, to protect me or subdue me or stanch the bleeding.

The smell of gun smoke. The gritty feel of the floor against my cheek and hands. Perhaps normal people take these things and weave them into a coherent narrative, like making sense of a particularly surreal dream. For me, they simply exist. The prospect of a discontinuous cognitive life holds no terror for me, or, I suspect, for anyone in research.

Afterward, I heard the story told: Quintana's battle cry, his rush toward us. According to Navarro, he pushed Brown out of the way in order to reach me. The Belter guards shot Quintana to death, and afterward the mole-speckled woman stood over his body cursing in the incomprehensible argot of her people and shouting into her radio. Brown, they rushed away, out the door and into whatever rooms they used to protect and isolate him from us. The medical team that treated me arrived quickly, but didn't evacuate me. I lay first on the floor and then one of the crash couches. Quintana's improvised knife, a length of steel pried from the base of a couch, inserted just below my ribs on the right, angling up toward my liver. A few more centimeters and my chances of survival would have fallen drastically, but they didn't. I found it difficult to focus on things that might have happened, knowing as I did that they hadn't. But that came later.

At first I slept in a narcotic cloud like a physical memory of university. When I woke, Alberto lay curled beside me, his body feeling oddly cold, though in fact it was my fever that made it seem that way. For two more days, I rested and slept, Belter medics coming both with and between meals to switch out supply packs on the autodoc they had strapped to my arm. When I asked them where Brown was, what was happening with him, they answered with evasions or pretended I hadn't spoken. The only information I gleaned in those terrible days was once, when I demanded to know, weeping, if he'd gone, and one of the medics twitched her head in an almost subliminal *no*. I told myself she'd meant that he was still on the station rather than the equally plausible negatives that she didn't know or she wouldn't answer or I shouldn't ask. Hope survives even stretched to a single molecule's thickness.

The room spoke of nothing but the attack during all the time Brown remained absent, even—perhaps especially—when



they spoke of something else. Just before lights-out, Ma and Coombs fought, shouting at each other for the better part of an hour over whether Ma had taken too long a shower. Bhalki, who usually kept to herself, approached Enz, talking tearfully for hours on end, and wound up in the hotel with loud and unpleasant-sounding intercourse. Navarro and Fong put together patrols that, in a population now under three dozen, felt both ridiculous and threatening. All of it was about the attack, though I didn't understand the complexity of it until Alberto held forth on the subject.

"Grief makes people crazy," he said. We were sharing a container of white kibble that looked like malformed rice and tasted like the unholy offspring of a chicken and a mushroom.

"*Grief?*" I must have sounded outraged at the thought, and in fairness, I was a little. Alberto rolled his eyes and waved the heat of my reply away.

"Not for Quintana. Not for the man, anyway. It's the *idea* of him. We were thirty-five people. Now we're thirty-four. Sure, the one we lost was an asshole. That's not the point. It was the same for Kanter. Every time one of us dies, it will be the same. We are all less in ourselves because we're less together. They aren't mourning him. They're mourning themselves and all the lives they could have had if we weren't stuck in here. Quintana's just a reminder of that."

"For whom the bell tolls? Well, that's a thought. Thirty-six," I said, and Alberto frowned at me. "You said we were thirty-five down to thirty-four, but there were thirty-six of us."

"No one counts Brown anymore," Alberto said. He took a mouthful of kibble using his index and middle fingers as a spoon, then sucked the food between his cheek and his teeth, pulling out the broth before swallowing the greasy remnant. It was the best way to eat Belter kibble. "They would be mourning you, if you'd gone," he said, and turned to me. There were tears in his eyes. "I would be."

I didn't know if he meant gone the way they assumed Brown to be already apart from the group, or dead like Quintana, but I didn't ask for clarification. Perhaps leaving the

room by dying out of it or being traded to the Martian were interchangeable for the people left behind. I guessed that was Alberto's point.

We put the rest of the kibble aside and lay together, his weight on my left to keep the wound in my side from hurting. Between my own discomfort, the uncertainty over Brown's status, and—unaccountably to me—Van Ark and Fong weeping loudly through the night, I slept poorly. And in the morning, Brown came back.

When the lights came on and the doors opened, he walked in with the guards. The time he'd spent sequestered had changed him. The others crowded around him, but he extricated himself from them and came to me. The brightness in his eyes reminded me of our best days on Phoebe and Thoth Station. I stood as he approached, and he grabbed my shoulder, pulling me away where the guards and the others couldn't hear us.

"You're *right*," he said. "It took me three days to find the fucker, but you're *right*."

"Did you tell them?"

"I did," he said. "They confirmed. When I get out, I swear to God, I will—"

The shout of the Belter guard interrupted us. The large, gray-haired man led the group today, and he strode toward us with his assault rifle drawn. "Genug la tué! No talking, sabé?"

Brown turned toward the guard. "This is the other nanoinformatics. I need to—" The guard pushed him aside with a gentleness more dismissive than violence.

"You come you," the guard said to me, gesturing with the barrel of his gun. My heart bloomed; my blood turned to light and poured out through the capillaries in my eyes and mouth. I became a thing of fire and brightness. Or that was how it felt.

"Me?" I said, but the guards didn't speak again, only formed a square around me and ushered me away. I looked over my shoulder as the doors closed behind me to see Brown and Alberto standing together watching me in slack-jawed

astonishment. Mourning, I supposed, the lives they could have had. The doors closed on them. Or else on me.

The guards didn't talk to me and I didn't engage with them as they led me through the station corridors. The chamber they delivered me to boasted a laminate bamboo table, four cushioned chairs, and a carafe of what appeared to be iced tea. At the gray man's nod, I took a seat. A few minutes later a woman came in. From the darkness of her hair and the shape of her eyes, I knew her family had been East Asian once. From her body and the slightly enlarged head, I knew they were Belters now.

"Dr. Cortázar," she said. Unlike the others, her accent was as soft as a broadcast feed's talking head. "I'm sorry we haven't spoken before. My name is Michio Pa."

"Pa," I said, assuming from her military bearing that she was not a first-name sort. Her slight smile suggested I'd guessed correctly. The gray man said something in Belter polyglot too fast for me to follow and Pa nodded.

"Am I correct that you've had an opportunity to review the same data as Dr. Brown?"

I folded my hands in my lap, squeezing my knuckles until they hurt. "He let me look at it, yes."

"Were you able to draw any conclusions?"

"I was," I said.

Pa poured out glasses of tea for the both of us and then pulled up a virtual display. I recognized the data structures as I would have a lover's face. "What do you make of it?"

I felt the trembling as if it rose up from the station itself, and not my own body. I drew in a shuddering breath. "Based on the profusion rate data and the internal structures, I believe the latent information within the protomolecule is expressing something similar in function to an egg."

Her smile pitied me. "Walk me through that."

I did, recounting for her all that I'd already said to Brown, back when I'd meant to make him out the fool. I wore my

invisible jester's cap well; I capered and grew excited. By the end, I managed to half-convince myself that everything I said was possible. That the gate—I never called it that—might *also* be an egg. The most effective lies, after all, convince the liar.

When I finished, she nodded. "Thank you."

"You can't give them Brown," I said. "He did liaison duty. The real work belonged to us. Send me instead."

"We're considering how to go forward." She rose, and I moved to her, taking her hand.

"If you put me in the room again, he'll kill me."

She paused. "Why do you say that?"

"He's from the research group."

"So are you."

It took me long seconds to put words to something so obvious. "It's what I would do."

\* \* \*

After the squalor and close quarters of Phoebe, the spacious, well-lit corridors of Thoth Station felt like distilled luxury. Wide, white halls that curved with a near-organic grace. Team workspaces and individual carrels both. I slept in a private room no larger than a medieval monk's cell, but I shared it with no one. I ate cultured steak as tender and rich as the best that Earth had to offer and drank wine indistinguishable from the real thing. The local climate, free from the temperature inertia carried by Phoebe's eight quadrillion tons of ice, remained balmy and pleasant.

Thoth boasted a research staff larger and better qualified than the universities on Earth or Luna, and the equal of even the best on Mars. The nanoinformatics team grew larger than before, even counting the loss of our Martian naval colleagues. Instead of only Trinh and Le and Quintana, I could now talk through my ideas about the protomolecule with a professional musician turned information engineer named Bouthers and an ancient-looking woman named Althea Ecco, who I didn't realize for almost a week authored half of my textbooks from

Tel Aviv. And Lodge, and Kenzi, and Yacobsen, and Al-Farmi, and Brown. We sat up nights in the common rooms, mixing now and then with the other groups: biochemistry, signaling theory, morphology, physical engineering, chemical engineering, logical engineering, and on and on until it seemed like Thoth represented every specialty that cutting-edge research could invent. Like the coffeehouses of Muslim Spain, we created civilization among ourselves. Or at least it felt that way. It might only have been the romance of the times.

Everyone in research had undergone the treatment, which admittedly posed some problems. Singh in computational biology held forth on her theory of the protomolecule as a Guzman-style quantum computer one night over dinner, and when Kibushi used the information without citing her, she snuck into the showers at the gymnasium and beat him to death with a ceramic workbench cap. After that, security kept a closer eye on us all, but they also switched to nonlethal weapons. Singh, while formally reprimanded by Dresden, kept her status on her team. It only tended to confirm what we all already knew: Morality as we had known it no longer applied to us. We had become too important for consequences.

We prepared then and we waited, the tension of every day growing more refined and exquisite. Rumors swirled of the sample going awry and being recovered, of information ops plans put in place to distract any possible regulatory bodies from our work until they also understood the transcendent importance of what we would have accomplished, of our sister research stations on Io and Osiris Station and the smaller projects they were engaged with. None of it mattered. Even the greatest war in human history would have been paltry compared with our work. To bend the protomolecule to our own will, to direct the flow of information now as whatever alien brilliance had done before, opened the concept of humanity beyond anything that even we were capable of imagining. If we managed what we hoped, the sacrifice of Eros Station would unlock literally anything we could imagine.

The prospect of the protomolecule's designers arriving to find humans unprepared for their invasion gave us—or me at

any rate—that extra chill of fear. I had no compunctions, no sense of regret. I'd had it burned out of me. But I believe that even if I'd refused the procedure, I would have done precisely as I did. I'm smart enough to know that this is almost certainly not true, but I believe it.

The word came nearly at the end of shift one day: Eros would be online in seventeen hours.

No one slept that night. No one even tried. I ate dinner—chicken fesejan and jeweled rice—with Trinh and Lodge, the three of us leaning over the tall, slightly wobbly table and talking fast, as if we could will time to pass more quickly. On other nights we would have gone back to our rooms, let ourselves be locked in by security, watched whatever entertainments the heavily censored company feeds provided. That night we went back to the labs and worked a full second shift. We checked all our connection arrays, ran sample sets, prepared. When the data came in, it would be as a broadcast, available everywhere. We only had to listen, and so tracking us through that signal became impossible. The price of this anonymity was high. There would be no rerunning a missed sample, no second chances. The equipment on Eros—both the most important and the most vulnerable—lay beyond our control, so we obsessed over what we could reach.

My station, and the center of my being, had a wall-size screen, a multiple-valence interface, and the most comfortable chair I have ever had. The water tasted of cucumber, citrus, and oxiracetam. The stations for Le, Lodge, and Quintana shared my space, the four of us facing away from each other in a floor plan like the petals of a very simple flower. Eros had a million and a half people in an enclosed environment, seven thousand weather-station-style data collection centers in the public corridors, and Protogen-coded software updates on all the asteroid station's environmental controls, including the air and water recycling systems. Each of us waited for the data to come, hungry for the cells in our databases to begin filling, the patterns we felt certain would be there to emerge.

Every minute lasted two. My sleep-deprived body seemed to vibrate in my chair, as if my blood had found the perfect

resonance frequency for the room and would slowly tear it apart. Le sighed and coughed and sighed again until the only things that kept me from attacking her out of raw annoyance were the security guard outside our door and the certainty it would mean missing the beginning of our data stream.

Quintana cheered first, and then Le, and then all of us together, howling with joy that felt sweeter for being so long delayed. The data poured in, filling the cells of our analytic spreadsheets and databases. For those first beautiful hours, I traced the changes on a physical map of Eros Station. The protomolecule activity began at the shelters that we'd converted to incubators, feeding the smart particles with the radiation that seemed to best drive activity. It spread along the transit tunnels, out to the casino levels, the maintenance tunnels, the docks. It eddied through the caves of Eros like a vast breath, the greatest act of transformation in the history of the human race and the tree of life from which it sprang, and I—along with a handful of others—watched it unfold in an awe that approached religious ecstasy.

I want to say that I honored the sacrificed population, that I took a moment in my heart to thank them for the contribution they were all unwittingly making for the future that they left behind. The sort of thing you're trained to say about any lab animals advanced enough to be cute. And maybe I did, but my fascination with the protomolecule and its magic—that isn't too strong a word—overwhelmed any sentimentality I had about our methods.

How long did it take before we understood how badly we'd underestimated the task? In my memory, it is almost instantaneous, but I know that isn't true. Certainly for the first day, two days, three, we must have withheld judgment. So little time afforded us—meaning me—only a very narrow slice of the overall dataset. But too soon, the complexity on Eros outstripped us. The models based on examinations in the lab and the human exposure on Phoebe returned values that seesawed between incomprehensible and trivial. The protomolecule's ability to make use of high-level structures—organs, hands, brains—caught me off guard. The outward aspect of the infection skipped from being explicable in terms

of simple cause-and-effect, through the intentional stance, and into a kind of beautiful madness. *What is it doing to what does it want to what is it doing* again. I kept diving through the dataset, trying one analytical strategy and then another, hoping that somewhere in the numbers and projections I would find it looking back out at me. I didn't sleep. I ate rarely. The others followed suit. Trinh suffered a psychotic break, which proved something of a blessing as it marked the end of her coughing and sighs.

Listening to the voices of Eros—human voices of the subjects preserved even as the flesh had been remade, reconfigured—I came to grips with the truth. Too many simplifying assumptions, too little imagination on our part, and the utter alienness of the protomolecule conspired to overthrow all our best intentions. The behavior of the particles had changed not only in scale but in kind and continued to do so again at increasingly narrow intervals. The sense of watching a countdown grew into a certainty, though to what, I couldn't say.

I should probably have been afraid.

With every new insight in the long, unbroken stretch of consciousness that predates even humanity, a first moment comes. For an hour or a day or a lifetime, something new has come into the world. Recognized or not, it exists in only one mind, secret and special. It is the bone-shaking joy of finding a novel species or a new theory that explains previously troubling data. The sensation can range from something deeper than orgasm to a small, quiet, rapturous voice whispering that everything you'd thought before was wrong.

Someone would have to be brilliant and driven and above all lucky to have even a handful of moments like that in the span of a stellar and celebrated career. I had five or six of them every shift. Each one felt better than love, better than sex, better than drugs. The few times I slept, I slept through dreams of pattern matching and data analysis and woke to the quivering promise that this time, today, the insight might come that made it all make sense. The line that connected the dots. All the dots. Forever. I lived on the edge of revelation like I



could dance in flames and not burn. When the end came, it surprised me.

It found me in my cell, silent in the dark, not awake and not asleep, the bed cradling me in its palm like an acorn. The sharp scent of the air recycler's fresh filters reminded me of rain. The voices I heard—clipped, angry syllables—I ascribed to the combination of listening to Eros for hours on end and the hypnagogic twilight of my mind. When the door opened and the three men from security hauled me out, I could almost have believed it was part of my dream. Seconds later, the alarms shrieked.

I still don't know how the Belters discovered Thoth Station. Some technical failure, some oversight that left the trail that came to us, the inevitable information leakage that comes from working with people. Station security pushed us like cattle, hurrying us down the corridors. I assumed our path ended in evacuation craft. It didn't.

In the labs, they lined us up at our workstations. Fong commanded the group in my room. It was the first time I'd recognized her as anything but another anonymous extension of the lump of biomass and demands that was security. She gestured to our workstations with her nonlethal riot gun. All their weapons were designed for controlling research, not defending the station.

"Purge it," Fong said. "Purge everything."

She might as well have told us to chew our fingers off. Lodge crossed her arms. Quintana spat on the floor. Fear glinted in Fong's eyes, but we defied her. It felt like nobility at the time. Ten minutes later, the Belters broke through. They wore no standard uniform, carried no unified weapons. They shouted and screamed in shattered bits of half a dozen languages. A young man with tattoos on his face led the charge. I watched Fong's eyes as she reached her conclusion and lifted her hands over her head. We did as she did, and the Belters surrounded us, peppering us with questions I couldn't follow and whooping in a violence-drunk delight.

They threw me to the deck and tied my hands behind my back. Two of them carried Le away as she threatened them with extravagant violence. I don't know what happened to her after that. I never saw her again. I lay with my cheek pressed to the floor harder than I thought the low gravity would allow. I watched their boots and listened to the chatter of their voices. At my workstation, an analysis run ended with a chime and waited for attention that would never come.

Less than two meters from me, the new interpretation that might have been the one, that might have cracked open the mystery, waited for my eyes, and I couldn't get to it. In that moment, I understood fully the depth of the abyss before me. I begged to look at the results. I whined, I wept, I cursed. The Belters ignored me.

Hours later, they hauled me to the docks and into a hastily rigged holding cell. A man with a hand terminal and an accent almost too thick to parse demanded my name and identification. When I told him I didn't have a union representative to contact, he asked if I had family. I said no to that too. We burned at something like a third of a g, but without a hand terminal or access to a control panel, I lost track of time quickly. Twice a pair of young men came and beat me, shouting threats to do worse. They stopped only when the larger of the two started weeping and couldn't be consoled.

I recognized the docking maneuvers only by the shifting vectors of the ship. We had arrived at wherever we were going, for however long we were meant to stay there. Guards came, hauled me out, shoved me in a line with others from Thoth. They marched us as prisoners. Or animals. I felt the loss of the experiment like mourning a death, only worse. Because out there, like hell being the absence of God, the experiment was still going on but it had left me behind.

They kept us in an enormous room.

\* \* \*

"How could she not know?" Michio Pa asked me. "If she was dropping glasses and things, she had to notice."

“One of the features of the illness is that she wasn’t able to be aware of the deficits. It’s part of the diagnosis. Awareness is a function of the brain just like vision or motor control or language. It isn’t exempt from being broken.”

The conference room had a table; soft, indirect lighting; eight chairs built for longer frames than my own; a nonluminous screen displaying Leonardo da Vinci’s sketch of a fetus in the womb; two armed guards on either side of the double doors leading to the hall; Michio Pa wearing sharply tailored clothes that mimicked a military uniform without being one; and me. A carafe of fresh water sat in the center of the table, sweating, four squat glasses beside it. Anxiety played little arpeggios on my nerves.

“So the illness made it so she couldn’t see what the illness was doing to her?”

“It was harder for me than her, I think,” I said. “From outside, I could see what had happened to her. What she’d lost. She caught glimpses now and then, I think, but even those didn’t seem to stay with her.”

Pa tilted her head. I recognized that she was an attractive woman, though I felt no attraction to her and saw none in her toward me. Something focused her on me, though. If not attraction, fascination maybe. I couldn’t imagine why.

“Do you worry about that?”

“No,” I said. “They screened me when I was still on basic. I don’t have that allele. I won’t develop her illness.”

“But something else, something that acts the same way...”

“I went through something like it in college. I won’t be doing that again,” I said and laughed.

Her eyelids fluttered, her mind—I supposed—dancing through a rapid succession of thoughts, each quickly abandoned. She chuffed out a single laugh, then shook her head. I smiled without knowing what I was smiling about. Her hand terminal chimed, and she glanced at it. Her expression cooled.

“I have to see to this,” she said. “I’ll be right back.”

“I’ll be right here.”

After the guards closed the door behind her, I got up, pacing the room with my hands clasped behind my back. At the Leonardo screen, I stopped and stared. Not at the sketch, but at the reflection of the man looking at it. It had been three days since I’d left the room, and I still struggled to recognize my reflection as my own. I wondered how many people, roughly, went through years without a mirror. Very few, I thought, though I personally knew almost three dozen.

Even with my hair barbered, my scrub-brush beard shaved away, I looked feral. Somewhere during my years in the room, I’d developed jowls. Little sacks of skin puffed under my eyes, a shade darker and bluer than the brown of my cheeks. I had gray hair now, which I’d known intellectually, but seeing it now felt shocking. Quintana’s attacks on me had left no marks. Even the knife wound, cared for by the station’s medical expert system, would leave no scar. Time had done me immeasurably more damage, as it did with everyone. If I squinted, I could still make out traces of the man I thought of when I pictured myself. But only traces. I wondered how Alberto had been able to bring himself to fuck the tired old man in my reflection. But, I supposed, beggars and choosers.

That I would not return to the room seemed a given now. They had not sent me back there, had given me new clothes, new quarters. Even Brown, during his long interrogations, hadn’t been allowed to shave. My naked, white-stubbed chin bore witness to the fact that I’d surpassed him. For the first day, I’d proudly marched out my egg hypothesis for one person, then another, then another, then the first again. Then they gave me a read-only access file that covered the years I had been gone. Two thousand pages, and I read it with the kind of longing and jealousy I imagined of someone following the career of an estranged child. From the uncanny transit of Eros to the surface of Venus to the creation of the ring gate to the discovery and activation of more than a thousand other gates that opened to a thousand empty solar systems, it filled me with wonder and joy and the bone-deep regret that I hadn’t been there to see it happen.

I dropped the egg theory and took up my more natural hypothesis of the gate. They thought they'd given me a cheat sheet, a way to pass myself off as better than I was for the Martian. I wasn't concerned with what they thought. If they considered me a fool, it still wouldn't be less than I thought of them. I could only hope that the negotiation between the Belters and Mars went well. My fate was in their hands, as it had been for years now.

The door opened and Michio Pa returned. The Martian was at her side. The same unfortunate skin, the same nut-brown hair. My heart beat with a violence that left me short of breath, and for a long moment I feared that something dire and medical was happening.

"Dr. Cortázar?" the Martian said.

"Yes," I said, rushing toward him too quickly, pushing my hand out before me like the unfounded presumption of intimacy. "Yes, I am. That's me."

The Martian smiled coolly, but he shook my hand. No physical contact had ever been more electric.

"I understand you've made some sense of our ring gates?"

Michio Pa, at his side, nodded as if unconsciously prompting me.

"Not in exhaustive depth," I said. "But I have the broad strokes."

When he replied, it was like a punch in the gut. "Why did you lie to us at first?"

"About?" I asked, trying to buy time.

He smiled, though the expression had no humor. "You had to know that every sound in that holding cell is monitored and recorded."

No. I hadn't known that. Though in hindsight it seemed obvious.

He continued. "You deliberately fed Dr. Brown a false story about your analysis, then at the last minute gave him the correct version. I'd like to understand why."

“I rethought my...” I began, then trailed off when I saw the knowing look in his eye.

“You were gaming him,” the Martian said. “Manipulating him to try to secure your position. Incorrectly believing that we would be traded the least valuable prisoner.”

The way he said it was not a question, but I found myself nodding anyway.

“The fact that he didn’t spot your falsified conclusions in the data,” the Martian continued, “is the reason you’re here. So, I suppose, your plan failed its way to success.”

“Thank you,” I replied inanely.

“Be aware that we know exactly what you are, what tactics you favor, and will not tolerate this behavior in the future. The consequences of failing to understand this fact of your future existence would be extreme.”

“I understand,” I said, and it was the truth. Something in my expression seemed to please him, and he relaxed a little.

“I am developing something of a private task force to examine the data that’s coming in from the initial probes that have gone through to the other side of the ring gate. Your experience with the initial discovery puts you in a rare position. I’d like you to join us. It won’t be freedom. That was never in cards. But it won’t be here, and it will be work.”

“I don’t need freedom,” I said.

His smile held an echo of sorrow I couldn’t parse. I wondered if Alberto would have known what it meant. The Martian clapped my shoulder and a wave of relief lifted me up.

“Come with me, Doctor,” he said. “I have some things to show you.”

I offered silent thanks to whatever imaginary God was listening and let the Martian lead me to this wide new universe, opening before me.

I did let myself wonder how the room would be without me. Whether Brown would ever understand how I’d outplayed

him. Whether Alberto would take another lover. How many years would stretch out before Fong and Navarro gave up hope that I would somehow come back for them all. Questions I did not expect ever to answer, because in the end I didn't actually care.

## Meet the Author

James S. A. Corey is the pen name of fantasy author Daniel Abraham and Ty Franck. They both live in Albuquerque, New Mexico. Find out more about this series at [www.the-expanse.com](http://www.the-expanse.com).



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## **Book One: Artefact**

**by Jamie Sawyer**

### *DANGER LIES IN THE DEPTHS OF SPACE*

*Mankind has spread to the stars, only to become locked in warfare with an insidious alien race. All that stands against the alien menace is the soldiers of the Simulant Operation Program, an elite military team remotely operating avatars in the most dangerous theaters of war.*

*Captain Conrad Harris has died hundreds of times—running suicide missions in simulant bodies. Known as Lazarus, he is a man addicted to death. So when a secret research station deep in alien territory suddenly goes dark, there is no other man who could possibly lead a rescue mission.*

*But Harris hasn't been trained for what he's about to find. And this time he may not be coming back...*

## Chapter One

There was something so immensely *wrong* about the Krell. I could still remember the first time I saw one and the sensation of complete wrongness that overcame me. Over the years, the emotion had settled to a balls-deep paralysis.

This was a primary-form, the lowest strata of the Krell Collective, but it was still bigger than any of us. Encased in the Krell equivalent of battle-armour: hardened carapace plates, fused to the xeno's grey-green skin. It was impossible to say where technology finished and biology began. The thing's back was awash with antennae – those could be used as both weapons and communicators with the rest of the Collective.

The Krell turned its head to acknowledge us. It had a vaguely fish-like face, with a pair of deep bituminous eyes, barbels drooping from its mouth. Beneath the head, a pair of gills rhythmically flexed, puffing out noxious fumes. Those sharkish features had earned them the moniker “fish heads”. Two pairs of arms sprouted from the shoulders – one atrophied, with clawed hands; the other tipped with bony, serrated protrusions – raptorial forearms.

The xeno reared up, and in a split second it was stomping down the corridor.

I fired my plasma rifle. The first shot exploded the xeno's chest, but it kept coming. The second shot connected with one of the bladed forearms, blowing the limb clean off. Then Blake and Kaminski were firing too – and the corridor was alight with brilliant plasma pulses. The creature collapsed into an incandescent mess.

“You like that much, Olsen?” Kaminski asked. “They're pretty friendly for a species that we're supposed to be at peace with.”

At some point during the attack, Olsen had collapsed to his knees. He sat there for a second, looking down at his gloved hands. His eyes were haunted, his jowls heavy and he was suddenly much older. He shook his head, stumbling to his feet.

From the safety of a laboratory, it was easy to think of the Krell as another intelligent species, just made in the image of a different god. But seeing them up close, and witnessing their innate need to extinguish the human race, showed them for what they really were.

“This is a live situation now, troopers. Keep together and do this by the drill. *Haven* is awake.”

“Solid copy,” Kaminski muttered.

“We move to secondary objective. Once the generator has been tagged, we retreat down the primary corridor to the APS. Now double-time it and move out.”

There was no pause to relay our contact with Jenkins and Martinez. The Krell had a unique ability to sense radio transmissions, even encrypted communications like those we used on the suits, and now that the Collective had awoken all comms were locked down.

As I started off, I activated the wrist-mounted computer incorporated into my suit. *Ah, shit*. The starship corridors brimmed with motion and bio-signs. The place became swathed in shadow and death – every pool of blackness a possible Krell nest.

Mission timeline: twelve minutes.

We reached the quantum-drive chamber. The huge reinforced doors were emblazoned with warning signs and a red emergency light flashed overhead.

The floor exploded as three more Krell appeared – all chitin shells and claws. Blake went down first, the largest of the Krell dragging him into a service tunnel. He brought his rifle up to fire, but there was too little room for him to manoeuvre in a full combat-suit, and he couldn’t bring the weapon to bear.

“Hold on, Kid!” I hollered, firing at the advancing Krell, trying to get him free.

The other two xenos clambered over him in desperation to get to me. I kicked at several of them, reaching a hand into the mass of bodies to try to grapple Blake. He lost his rifle, and let rip an agonised shout as the creatures dragged him down. It

was no good – he was either dead now, or he would be soon. Even in his reinforced ablative plate, those things would take him apart. I lost the grip on his hand, just as the other Krell broke free of the tunnel mouth.

“Blake’s down!” I yelled. “Ski – grenade.”

“Solid copy – on it.”

Kaminski armed an incendiary grenade and tossed it into the nest. The grenade skittered down the tunnel, flashing an amber warning-strobe as it went. In the split second before it went off, as I brought my M95 up to fire, I saw that the tunnel was now filled with xenos. Many, many more than we could hope to kill with just our squad.

“Be careful – you could blow a hole in the hull with those explosives!” Olsen wailed.

Holing the hull was the least of my worries. The grenade went off, sending Krell in every direction. I turned away from the blast at the last moment, and felt hot shrapnel penetrate my combat-armour – frag lodging itself in my lower back. The suit compensated for the wall of white noise, momentarily dampening my audio.

The M95 auto-sighted prone Krell and I fired without even thinking. Pulse after pulse went into the tunnel, splitting armoured heads and tearing off clawed limbs. Blake was down there, somewhere among the tangle of bodies and debris; but it took a good few seconds before my suit informed me that his bio-signs had finally extinguished.

*Good journey, Blake.*

Kaminski moved behind me. His technical kit was already hooked up to the drive chamber access terminal, running code-cracking algorithms to get us in.

The rest of the team jogged into view. More Krell were now clambering out of the hole in the floor. Martinez and Jenkins added their own rifles to the volley, and assembled outside the drive chamber.

“Glad you could finally make it. Not exactly going to plan down here.”



“Yeah, well, we met some friends on the way,” Jenkins muttered.

“We lost the Kid. Blake’s gone.”

“Ah, fuck it,” Jenkins said, shaking her head. She and Blake were close, but she didn’t dwell on his death. *No time for grieving*, the expression on her face said, *because we might be next*.

The access doors creaked open. There was another set of double-doors inside; endorsed QUANTUM-DRIVE CHAMBER – AUTHORISED PERSONNEL ONLY.

A calm electronic voice began a looped message: “Warning. Warning. Breach doors to drive chamber are now open. This presents an extreme radiation hazard. Warning. Warning.”

A second too late, my suit bio-sensors began to trill; detecting massive radiation levels. I couldn’t let it concern me. Radiation on an op like this was always a danger, but being killed by the Krell was a more immediate risk. I rattled off a few shots into the shadows, and heard the impact against hard chitin. The things screamed, their voices creating a discordant racket with the alarm system.

Kaminski cracked the inner door, and he and Martinez moved inside. I laid down suppressing fire with Jenkins, falling back slowly as the things tested our defences. It was difficult to make much out in the intermittent light: flashes of a claw, an alien head, then the explosion of plasma as another went down. My suit counted ten, twenty, thirty targets.

“Into the airlock!” Kaminski shouted, and we were all suddenly inside, drenched in sweat and blood.

The drive chamber housed the most complex piece of technology on the ship – the energy core. Once, this might’ve been called the engine room. Now, the device contained within the chamber was so far advanced that it was no longer mechanical. The drive energy core sat in the centre of the room – an ugly-looking metal box, so big that it filled the place, adorned with even more warning signs. This was our objective.

Olsen stole a glance at the chamber, but stuck close to me as we assembled around the machine. Kaminski paused at the control terminal near the door, and sealed the inner lock. Despite the reinforced metal doors, the squealing and shrieking of the Krell was still audible. I knew that they would be through those doors in less than a minute. Then there was the scuttling and scraping overhead. The chamber was supposed to be secure, but these things had probably been on-ship for long enough to know every access corridor and every room. They had the advantage.

*They'll find a way in here soon enough*, I thought. A mental image of the dead merchant captain – still strapped to his seat back on the bridge – suddenly came to mind.

The possibility that I would die out here abruptly dawned on me. The thought triggered a burst of anger – not directed at the Alliance military for sending us, nor at the idiot colonists who had flown their ship into the Quarantine Zone, but at the Krell.

My suit didn't take any medical action to compensate for that emotion. *Anger is good*. It was pure and made me focused.

"Jenkins – set the charges."

"Affirmative, Captain."

Jenkins moved to the drive core and began unpacking her kit. She carried three demolition-packs. Each of the big metal discs had a separate control panel, and was packed with a low-yield nuclear charge.

"Wh-what are you doing?" Olsen stammered.

Jenkins kept working, but shook her head with a smile. "We're going to destroy the generator. You should have read the mission briefing. That was your first mistake."

"Forgetting to bring a gun was his second," Kaminski added.

"We're going to set these charges off," Jenkins muttered, "and the resulting explosion will breach the Q-drive energy core. That'll take out the main deck. The chain reaction will destroy the ship."

“In short: *gran explosión*,” said Martinez.

Kaminski laughed. “There you go again. You know I hate it when you don’t speak Standard. Martinez always does this – he gets all excited and starts speaking funny.”

“*El no habla la lengua*,” I said. You don’t grow up in the Detroit Metro without picking up some of the lingo.

“It’s Spanish,” Martinez replied, shooting Kaminski a sideways glance.

“I thought that you were from Venus?” Kaminski said.

Olsen whimpered again. “How can you laugh at a time like this?”

“Because Kaminski is an asshole,” Martinez said, without missing a beat.

Kaminski shrugged. “It’s war.”

*Thump. Thump.*

“Give us enough time to fall back to the APS,” I ordered. “Set the charges with a five-minute delay. The rest of you – *cállate y trabaja*.”

“Affirmative.”

*Thump! Thump! Thump!*

They were nearly through now. Welts appeared in the metal door panels.

Jenkins programmed each charge in turn, using magnetic locks to hold them in place on the core outer shielding. Two of the charges were already primed, and she was working on the third. She positioned the charges very deliberately, very carefully, to ensure that each would do maximum damage to the core. If one charge didn’t light, then the others would act as a failsafe. There was probably a more technical way of doing this – perhaps hacking the Q-drive directly – but that would take time, and right now that was the one thing that we didn’t have.

“Precise as ever,” I said to Jenkins.

“It’s what I do.”

“Feel free to cut some corners; we’re on a tight timescale,” Kaminski shouted.

“Fuck you, ’Ski.”

“Is five minutes going to be enough?” Olsen asked.

I shrugged. “It will have to be. Be prepared for heavy resistance en route, people.”

My suit indicated that the Krell were all over the main corridor. They would be in the APS by now, probably waiting for us to fall back.

*THUMP! THUMP! THUMP!*

“Once the charges are in place, I want a defensive perimeter around that door,” I ordered.

“This can’t be rushed.”

The scraping of claws on metal, from above, was becoming intense. I wondered which defence would be the first to give: whether the Krell would come in through the ceiling or the door.

Kaminski looked back at Jenkins expectantly. Olsen just stood there, his breathing so hard that I could hear him over the communicator.

“And done!”

The third charge snapped into place. Jenkins was up, with Martinez, and Kaminski was ready at the data terminal. There was noise all around us now, signals swarming on our position. I had no time to dictate a proper strategy for our retreat.

“Jenkins – put down a barrier with your torch. Kaminski – on my mark.”

I dropped my hand, and the doors started to open. The mechanism buckled and groaned in protest. Immediately, the Krell grappled with the door, slamming into the metal frame to get through.

Stinger-spines – flechette rounds, the Krell equivalent of armour-piercing ammo – showered the room. Three of them punctured my suit; a neat line of black spines protruding from my chest, weeping streamers of blood. *Krell tech is so much more fucked-up than ours.* The spines were poison-tipped and my body was immediately pumped with enough toxins to kill a bull. My suit futilely attempted to compensate by issuing a cocktail of adrenaline and anti-venom.

Martinez flipped another grenade into the horde. The nearest creatures folded over it as it landed, shielding their kin from the explosion. *Mindless fuckers.*

We advanced in formation. Shot after shot poured into the things, but they kept coming. Wave after wave – how many were there on this ship? – thundered into the drive chamber. The doors were suddenly gone. The noise was unbearable – the klaxon, the warnings, a chorus of screams, shrieks and wails. The ringing in my ears didn't stop, as more grenades exploded.

“We're not going to make this!” Jenkins yelled.

“Stay on it! The APS is just ahead!”

Maybe Jenkins was right, but I wasn't going down without a damned good fight. Somewhere in the chaos, Martinez was torn apart. His body disappeared underneath a mass of them. Jenkins poured on her flamethrower – avenging Martinez in some absurd way. Olsen was crying, his helmet now discarded just like the rest of us.

*War is such an equaliser.*

I grabbed the nearest Krell with one hand, and snapped its neck. I fired my plasma rifle on full-auto with the other, just eager to take down as many of them as I could. My HUD suddenly issued another warning – a counter, interminably in decline.

*Ten ... Nine ... Eight ... Seven ...*

Then Jenkins was gone. Her flamer was a beacon and her own blood a fountain among the alien bodies. It was difficult to focus on much except for the pain in my chest. My suit

reported catastrophic damage in too many places. My heart began a slower, staccato beat.

*Six ... Five ... Four ...*

My rifle bucked in protest. Even through reinforced gloves, the barrel was burning hot.

*Three ... Two ... One ...*

The demo-charges activated.

Breached, the anti-matter core destabilised. The reaction was instantaneous: uncontrolled white and blue energy spilled out. A series of explosions rippled along the ship's spine. She became a white-hot smudge across the blackness of space.

Then she was gone, along with everything inside her.

The Krell did not pause.

They did not even comprehend what had happened.

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