

autónoma

Dave Jarvis

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1 Bud

Wherein revelations rise

Xander Angelos (May 30, 2058)

Trying to solve a seemingly inexplicable mystery upended my life. It started innocuously enough, when Chloé sat beside me on the couch and said, “Dad, the custodian uses up her entire lunch break, down to the minute; like, she probably ate quartz crystals as a kid. Why would she ever think to check the roof? Leopards and spots, right? She doesn’t even fart on a whim.”

I raised a brow and glanced towards the basement door. “Police plus principal,” I replied with a non-answer, half-thinking about ways I could retreat from this conversation into the Psynæris cliffhanger.

“How’d the police know?”

I drew my eyes back to the e-report and read it aloud. “Officer Hanssen received an anonymous tip that two figures were on the roof of 1400 Northwest Buchanan Avenue. He relayed the information—”

“Dad, look. Nobody else was there. How would’ve anybody known? The school doesn’t do vids. Besides, lying down while talking couldn’t’ve tipped off any looky-loos or passersby from the street.”

Psynæris slipped from my thoughts. I said, “Maybe someone spotted your clandestine jaunt to the roof but you failed to notice? Or a micro-drone flew by and its killjoy owner ratted. Or you suspected Sylvia was going to push you over the edge, so you made a preëmptive emergency call?”

“Impossible. No. And Sylvia is true.”

“You really think that at lunch time in a school bustling with kids and teach—”

Chloé’s comm vibrated.

“Or,” she said, her synapses firing faster than mine, “tattlecomm?”

Before she could answer the call, I snatched the device. “Confiscated, and consider yourself chastised. Ask to borrow your mother’s microbook for the next week.” I set my hand upon her shoulder, warmly. “Chloé, if you’re being tracked, we need to know.”

She shrugged off my hand and glowered. “Give it back, now. Some files need to be ... organized.”

I shifted position, shook my head, and gritted my teeth. “We talked about this, Chloé. We warned you that comms come with responsibilities and conditions. One condition being no nudes. No nudes. Two words. How was that not clear?” I pumped my volume a notch or four. “Why didn’t you think? Did we raise an idiot for a daughter? Did we?”

Cassandra’s came steamrolling down the hallway.

“Bumblebee,” said Cassandra using her quiet voice, “please, go to your room, lock your door, and listen to music until I knock, okay?” I felt the briefest twinge of an awkward silence between us while waiting until the door clicked closed. Cassandra turned to face me with shards in her eyes and winter in her tone. “Downstairs.”

In the basement, Cassandra launched her rebuke. “Treat Chloé like that again and we’ll be signing off on custody arrangements.” She pointed at the empty, crane-like cabinets. “You’re gonna need to steady your keel because Psynæris is tipping you overboard. Now answer me: How’d you bank them?”

I sat down in the nearest chair and lowered my forehead into my palms. “Tyfós and I developed an untraceable, peer-to-peer deliberation system that used unbreakable quantum cryptography and integrated a homomorphic database immune to side-channel attacks. Nation states can’t touch it. We returned privacy to citizens.

“He said he had licensed our software—called *Voxorium*—to a client in Mexico. No details. I didn’t think to probe until I caught a few words in a note he was typing up and his comm buzzed with a number that I later looked up. Took some sleuthing to learn that our main breadwinner was

a front runner for a cartel involved with human trafficking, black-market brain stimulators, automatic—”

Cassandra’s nostrils flared. She stood, arms crossed, wearing a frown that rent my heart, and said nothing. After the smallest of head shakes, she turned away to climb the stairs.

“It was for the gays!” I blurted; she stopped climbing. “Do you recall Mexico’s super-high homosexual homicide rates? Dissidents reinstated democratic governance and a proactive police force. Violent hate crimes against that demographic fell to nearly zip. The Saudi Insurrection? Eighteen million women granted legal personhood. Siberian anti-corruption movements? Two hundred thousand people pulled out of poverty.

“All Voxorium-powered. He never told me the groups were penniless.

“Seventeen years ago, Tyfós split a cryptocurrency bonus from the cartel with me. I didn’t know I bought the machines using blood money. When I finally confronted him, he dodged with a platitude about saving lives. Was confirmation enough. I donated my cryptostash to non-profits. The machines stayed because, yes, I’m bent on Psynæris.”

She placed her hands on the oak banister and leaned forward, looking down at me from a distance. There was a long pause. Her words came out measured and tempered. “Imagine feeling so dirty inside no, no amount of showers and scrubbing on the outside could ever make you feel clean again. Or feeling so debased only a mockery of your self-esteem remains. Or holding a mirror to your face and an object less than human reflects back. Trust, serenity, energy, confidence, intimacy, dignity, security, and joy. All slaughtered. That’s trafficking’s affliction, y’know, for its survivors. What if Chloé were so shattered, so diminished? Could you weather that upheaval? Do you believe immeasurable suffering equals quantifiable emancipation for egalitarianism? Your only absolution, in my eyes, is Tyfós having muddied the truth. Fix this. Start with your daughter. And Xander, it’s gonna take a lot of time before I warm to you.”

She left. My heart was bobbing in my stomach, albeit wrapped in a

thin veneer of a rainbow-coloured acid-proof life preserver. A minute later, her voice called down from above, “Chloé’s waiting.”

Upstairs, they were seated at the dining room table. I sat down, looked Chloé in the eyes and said, “I’m sorry. Forgive me?”

Cassandra grimaced. “Acknowledgment, remorse, and amends.”

I closed my eyes and rubbed the back of my neck, hoping the dull throb in my head would dissipate. First time I played *Psynæris*, the experience was a bit underwhelming. Returning from the game to the real world left me with a good feeling buzz, like my surroundings wore a smiling afterglow. Over the course of that day, those smiles subsided and the buzz waned, and that was fine. I told myself I’d limit play to a few hours, once a month, only on weekends. The stories were so immersive and compelling. I was there, stroking dragon scales, trading ideas with people around the globe, learning art, seeing inspirational concept robotics, exercising with martial arts masters, solving mysteries in complex storylines to win prizes. Then it was every other weekend, but no more. I held the game at bay for a long time. Even went cold turkey for a time. Then the *Triplets of Kyōto* arrived. After a single session, *Psynæris* had a whisper-lock on my mind, beckoning me to return if only for a short stay. I burned with obsession to beat the story. It meant playing a few hours each weekend and Cass indulged me. Defeat the game to end on a rush. I needed to prove to myself that I could ... what? Outsmart game designers by pushing my daughter away, evidently.

When I opened my eyes, I said, “Chloé, I was angry at being interrupted because I’m addicted to *Psynæris*. Lashing out at you over the photos on your comm was insensitive, inappropriate, and misplaced; I deeply regret raising my voice and castigating you. You excel in every measurable aptitude. We’re going to sell the machines and donate the funds to charity”—Cassandra raised a brow at my resolution—“and if I can help repair our relationship in any way, please tell me.”

Chloé immediately asked, “Give back the comm?”

“Clever. Go and euphemistically organize your files by wiping them, permanently. Convince future you to manage anything digital like it’ll be copied, and anything electronic like it’ll be cracked. Never share anything with anyone that you wouldn’t want the world to see, regardless of how much trust you may have in that person.” I returned her comm. “Lease is up in an hour. Do *not* turn it off, do *not* restart it.”

After Chloé left in a huff, Cassandra looked across the table at me. The shards in her eyes seemed less spiky as she said, “Guest room tonight.”

Japan has a centuries-old tradition to repair broken ceramic wares, called *kintsugi*, by using gold to fuse the broken pieces back together. Rather than hide the damage, the golden fissures highlight the reality of imperfection. Cassandra could have sent me couch surfing. Instead, she left me with the opportunity to *kintsugi* our family back together.

A few hours later, I cracked the case literally and figuratively. Snail races are livelier than reading technical hoo-ha, so here’s a summary.

Everybody knows governments can backdoor our comms, but nobody wants it flaunted in their face, and certainly the governments wouldn’t want their citizens to know when or how often or why they were snooping. What few people know is that when certain comm features are used, entries are added to a log file. For technical reasons that would bore anyone into cheering for gastropods, preventing entries from being written is difficult. Removing entries from the end of a log file is easier, yet also easier to detect. A surreptitious surveillance act would be as minimally invasive as possible. Meaning, the logs were probably left intact.

Pressure circuitry inside of integrated environment sensor chips can determine elevation to within half a metre. Comms contain a sensor that can be queried for air pressure, temperature, and humidity. When queried, the sensor’s driver software exports the values, along with the date and time. Corvallis is situated seventy-two metres above sea level and Chloé’s school is two storeys tall. If her comm’s location and altitude were queried, then a log entry of around eighty metres must be present.

A few minutes of nervous key presses yielded the sensor's log file. During her rooftop talk with Sylvia, several minutes before the custodian caught them, the chip's sensor was queried. The log file entries contained a snapshot of the barometric pressure, inconspicuous and unprompted. The altitude reading would have suggested she had either floated near the ceiling or stood upon the roof:

```
2058-05-30 11:57:52.848 | INFO | BMP1580 | altitude: 79.2 m
2058-05-30 11:57:52.851 | INFO | BMP1580 | temperature: 25.39 °C
2058-05-30 11:57:52.854 | INFO | BMP1580 | pressure: 1003.72 mb
```

Power cycling clears the logs, but performing a remote reboot would be risky because it could get noticed, triggering an investigation; in contrast, a timestamp buried in a log file would remain hidden from unsuspecting eyes. It was almost perfect subterfuge.

I stood at my desk, staring down at that anonymous tip.

After making a dead-tree copy of the logs, I ran to Cassandra's study. "Cass, look!" I placed the paper on her desk. Briefly, I explained how the altitude readings worked. "We need to tell the—"

She put a finger to her lips. On the flip side of the page she scrawled, "We're being watched? Police involved? Comms recording?"

We set our comms on the desk. Cassandra tailed me into the backyard. She watched me stuff paper logs into the barbeque. Striking a match, I asked, "Did someone overhear me and Chloé talking a few days ago? When did the spying start?" My stomach knotted as flames redacted the evidence. "Why her? They couldn't have trailed the Psynæris purchase, it was fully anonymized. Besides, that trail leads to Tyfós. I'm reeling, Cass. Any ideas?"

She slumped into a patio chair. "None that'd endear us to Chloé. I don't suppose there's any way to trace ... Oh, tracing won't matter because we don't know how high these thousand eyes fly above the police. If we

keep the devices, they'll spy on us for who knows how long? Mind you, at least then we control the when and what. If we give up the devices it'd probably ring some bells that we're aware of their ruse. Then what happens? They round us up like pigs in their pen? Intervene otherwise? D'you think they'd trip up, expose themselves? What would we do if they did? What life would we live knowing we're always under scrutiny? Observers change the behaviour of those being observed—the chilling effect, right? It's circles, Xan, circles, circles, circles." She sighed. "Fine. Let's go dark."

"I'll tell Chloé soon; I'm sure I'm already neck deep in tar, in her view."

* * *

Around this time—in a vid we later received from Yūna—my half-brother was seated alone, hunched and hooded, withdrawn into a corner of some bustling café, his face lit by an ultra-thin laptop's screen. He was slouched in a black leather armchair, sunk behind the anonymity of a public outlet. His eyes scanned the shop, glinting with the excitement of a terrier in a meadow full of rats. He fixated on a preppy-looking man wearing a navy blazer and tan chinos who was making an order at the counter. The man was holding onto the hand of a little girl dressed in a red romper having puffy sleeves and huge front pockets. When the girl's guardian waved his free hand to pay with a comm, Tyfós locked an old black antenna into a slot at the side of the machine. Within a scant second, the glow on his face disappeared.

The vid cut to a different angle. A ceiling cam, further back, captured most of the screen. Tyfós looked down at the retro computer. A remote session was established with the customer's comm and a black terminal had appeared. His long, bony fingers issued commands to jump onto a classic-quantum bridge in Germany, then he chained the secure connection through unpatched servers newly wired into the quantum network. The final server was a South African zombie, probably long since compromised. Electronic footprints hidden, he piggy-backed a pipe between the

comm's low-level file system and the remote server. From the comm's perspective, it was grabbing data from Germany over an encrypted route.

```
$ qcp -pipe 853901 feeb:1729::6174:daed
Password:
qcp:~$ mkcd games
qcp:~/games$ mget -f img.*jxl
```

Illegal photos—stored on and downloaded from the zombie server—zipped around the world using a retro-styled file transfer protocol called *quantum copy*, landed on the comm of an unsuspecting man in an unsuspecting café. Tyfós kept his laptop devoid of unlawful deviance. Nobody had any idea, not the slightest inkling, how easily their life could be devastated. They still don't. Nimble fingers tapped a few more keys; his fingernails clicked against the old keycaps. He ran a command to display either a zero or a one, at random:

```
$ shuf -i 0-1 -n 1
```

If the command spat back a one, he'd broadcast a message to a dozen contacts on the comm, informing them about his prey's images. Otherwise, he'd take no action and let someone else discover the files: victim or partner. Leaving the victim's fate uncertain must have been euphoric for my half-brother. I surmised that he revelled in sending an innocent stranger to jail for several years.

His devilry ran deep. About a decade ago, comms with spitports saturated the market, and ads guilt-tripped parents into upgrading their children's devices. No need to pay for a doctor. No need to visit a lab. The comms could test for genetic defects, viral loads, tuberculosis bacteria, malaria parasites, and leukemia biomarkers. Every comm with a

spitport stored its owner's complete genetic code, which occupied about 200 gigabytes of space, barely worth a mention in the file allocation table. Tyfós took advantage of how market pressures pushed companies to cut corners on systems development. Before finishing his locals exploit, he installed a custom cracker application to gain a foothold using one of those cut corners. His fingers flew across the rubber-membrane keyboard; he ran the quantum copy program to transfer the genetic codes of the man and, presumably, his daughter onto the laptop. Not ten seconds later, the copy completed. Tyfós folded up the laptop, pocketed it, and left the café.

We never learned how he put any of the genomes he stole to use, except for Chloé's.

Yūna Futaba (July 20, 2064)

“Power to idle!” I yelled from the podium, my heart pounding.

I darted my eyes around the massive display, absorbing every stat on the vid. Night enveloped the world and at its edge, the shadowy outline of Umbrous Tower loomed. I made a j-sweep in the air using two digits. The display panned up to show the drone's flight panel. Altimeter was at 1,250 feet and falling rapidly, airspeed was near zero, turn and slip was—it was bad. Tétartos managed to enter a low-altitude spin. Normally spins aren't a problem; meeting the land at high velocity is a problem. The virtual drone was moments from ruins followed up by an inevitable purge. I thought LeMay would be livid to lose more time to another reset.

I shouted, “Ailerons to neutral!” Down dropped the drone, turning wing over wing; a tumbling fledgling had a better chance of survival. “Hard right rudder!” The death spiral slowed. “Elevator forward!” Drone pitched sharply downwards. “Ease off the rudder and raise the nose!” Altimeter at 210 feet. “Pop the power—now!”

A foot below the treeline, the drone leveled out, snapping tips off the tallest of firs. Moments later, Tétartos ascended to safety. I exhaled,

audibly. Someone forced Tétartos' flight into a spin scenario. Probably a hidden gem added to the sim by one of the previous team members who LeMay put on ice.

Simulation visuals showed an open valley on either side of Umbrous Tower, approaching rapidly. I peered up to my left; a red light flipped on. Tétartos had armed the drone's missiles. I shut my eyes and placed my palm to my forehead. "We're blind at this range, there may be night owls inside. Weapons hold." I opened my eyes. No status change. "Why are weapons hot? Do not fire. We—" A missile symbol appeared on the display, headed straight at the building. "What the h—"

"Mission over, returning to base," said the machine.

I parted my touching hands aslant to enlarge the vid. The missile's bright white exhaust diminished into the shadows ahead. As Tétartos swung the drone around, the vid panned away from the white dot nose diving into Umbrous Tower. No eyes needed witness the finale to know we hit: As Tétartos put the building to the drone's rear, the surrounding trees lit up in radiant oranges and reds, nature's muted mirrors of a fireball that mushroomed into the night.

LeMay, I feared, would shove his war hammer down my ear tubes. Or worse. With surface placidity, I said, "You were supposed to discern unarmed civvies from armed assailants. It was a trial run! I'm trying to save you. You know every mission is persisted, indexed, and debriefed. So why disobey my orders?"

The lab went silent, not even the overhead air filtration system whispered. I shuddered, imagining LeMay leaving his office, heading to the lab, his footsteps thundering down the halls.

Tétartos said, "Those *were* my orders."

Without deigning a reply, I strode out of the lab, arms pumping at my side. So. LeMay was probably hunting for any reason to bring in the old team and tried to dollop failure on my plate. Sure, he was mean, but underhanded? Not a minute later, I stood at the doorway to his office,

ceaselessly lit by that blue life-draining light. He barely noticed my existence, never mind charging a war path to the lab.

“Tétartos disobeyed me. He—it—was supposed to sweep before pulverizing the building. I’ve spent endless hours training, preparing, and analyzing for this simulated mission, only to have you or one of your minion—”

“Stop,” LeMay said, his stare unwavering from the vid. At length, he turned towards me. “Allegiance validation,” he said as explanation. His double entendre festered between us while he searched my face for understanding. In his silence, he defeated me. When I averted my eyes he said, “Reset Tétartos by twenty-four hours. Replay the sim. Dismissed.”

“Yes, sir,” I said to nobody; his attention had returned to the vid.

Before heading to the lab, I made a slight detour to my room to retrieve my satchel, then beelined for the mess hall. Empty as usual, except for the all-seeing surveillance domes permanently storing each passing moment throughout every millimetre of the room. Probably to dissuade anyone from doing what I was about to chance: steal.

After sitting down at a table, I pulled a special thermos and not-so-special reading material out of my satchel. Within the thermos was a small jar I had bonded to the side a month earlier, leaving a half-moon space around the inner edge. I dumped java into the jar and spilled enough refined white sweetener to fill the space between the two vessels. For anyone watching the vids, I was just adjusting the java to the sweetest of sweet teeth, rather than amassing materials for my freedom.

At least that was my hope. I had enough sodium-free salt and heaps of sweetener stolen from the mess hall to start the next phase. My regimen for the seven days that followed would be murder Tétartos overnight, replay the sim, analyze the results, and report to LeMay. Tonight, though, I had a date with science. After initiating the reset in the lab, I strolled to my room, changed outfits, stepped into my runners, slung my satchel

over my shoulder, and started my evening habit a little later than usual, stalling for nightfall's shield. I routinely toured the base, right beside the fence, often stopping for breath and water. Tonight, I paused behind a shed, out of view of any vids.

I bent down to unearth my experiment. One of the roving surveillance machines rounded into view, about half-way down this stretch of the perimeter. I performed burpees until it passed. My time behind the shed was pushing the boundaries of suspicious behaviour, so I donned the satchel and performed two more laps before kneeling to the dirt once more. Inside the hole I had unearthed were all the pieces I needed to produce two dabs of thermite, a substance that slices through metal as easy as scissors snip paper. With haste, I set the science in motion, which needed at least a day to set. That meant my nature-inspired lid needed to remain untouched until then.

Beside me were long army-mottled panels—twice the strength of steel and half the weight of aluminium. At some point the Agency of Defence would need to bring in a pile driver to impale them around the base. I had half a mind to wait for its delivery and somehow ride it through the fences to freedom. With all hands on Tétartos and this venture, I didn't know when the massive machine would arrive. Maybe those panels were what part of my dream foretold? Sealing my fate in the Tombs, forever hidden behind heavily reinforced shadow fencing.

So.

Is it murder to reset a metal mind by twenty-four hours? Probably not. A month? A year? Maybe not. How much time—how many experiences—must be erased before the identity is so far removed from its former self that the original persona is no more? No matter what words the Agency uses for these moral swamps, I know them as damp sheets and tattered nightmares. I hardly slept.

Anyway, sleep wasn't a high priority. Another day had started and my job was to find answers, not puzzle over loose principles. Still, the

Danaïdes, Tityos, Sisyphus, and all the other residents trapped in the Tartarus mythos knew of their eternal misery. After purging, Prôtos, Défteros, and Tétartos should never have known. Yet Tétartos remembered being reset, or at least had strong enough suspicions to raise them.

As I stepped out of the shower stall, one word bit into me: Aging.

Some of their memristor arrays were retaining previous values, not being erased. Parts of the brains had been etched and re-etched so often that those parts had lost the ability to change state. Not the entire brain, obviously. Tétartos, presumably the newest, remembers resets; Défteros has layers of personalities, partial people vying for the fore; and Prôtos, being the first, has probably relived a child's life so often that ... Right. Ramping their virtual environments far beyond double-time was amplifying the problem.

If aging devices were ever to be used in the wild ...

I threw on my outfit and raced to the lab, my hair flinging water droplets behind me. Hardware faults that nobody noticed? The purging software is supposed to validate the triple-pass low-level formatting, identify issues, partition problem areas to prohibit reuse, and send an alert when bad bits abound. Either nobody received the alerts or they weren't passed up the chain. Neither scenario worried me: I now knew a way to neuter Zeus himself, liberating the minds in these cerebral Tombs.

At the podium, I flipped my hand up. The display turned on, splashing primary hues around the room. I dropped both hands to start typing. A minute later I had the main low-level formatting software's source file in front of me. Most of it appeared hastily written. Inebriated swines would've made less of a mess; management, whipped by the tight timelines it touted, drove software development decisions that defied rational thought. There weren't any limits on the number of formatting passes, as one example.

Any formal software changes to update the brain firmware would be put through a peer review process. Instead, to expedite my research,

I had petitioned for full system administrative rights to each machine mind. So. I wrote a subtle immortal process: A device driver—software on each machine that’s responsible for exchanging information between the hardware and higher-level operations—woven into the system initialization routine. Rebooting the brains would launch my new device driver to run a twenty-pass low-level format, leaving the boot region untouched. The machine minds would deteriorate into total disrepair within a month. A parting present for my jailers.

The Agency’s war machines will nevermore fly from this place.

If the Fates favour me, though, I will.

2 Bloom

Wherein companions vanish

Cassandra Angelos (June 3, 2058)

Who ordered a world riddled with governments peering and leering at our most intimate moments, our personal exchanges? Not me, and certainly nobody in my tight-knit social circles because the very thought is mortifying. At what point did we let people in positions of power know where and when and with whom we met? What meaning has freedom when nobody knows whom the watchers are watching?

Someone, somewhere, was puppeteering my family's life. The leaders of our country were never purchasing privacy for security; no, the government wanted to empty our change purse of liberties so that they could carrot-or-stick our lives. A decision was made that led to Chloé's suspension, marring her chances at anything remotely Ivy League. Not that I was eager to plunge the joy of my life into the Eastern Seaboard deluges. Her short suspension ended yesterday and tomorrow is her presentation on how food shapes the economy. At least, it would've been, had we known about Geppetto's strings—with time enough to cut them.

Chloé busted through the front door as though a den of pit vipers were hissing at her heels. She was home a lot later than usual. I looked up in time to catch a glimpse of a few new rips in her clothes as she darted to her room and slammed the door. First suspension, now thrown fists? I nabbed a pure, sugar-free dark chocolate cacao bar from the kitchen before greeting her bedroom door with a soft knock.

"No," she said, with bitterness surfing her tone.

"Words exchanged for chocolate?" I asked, lightly tapping the bar on the door.

At length she said, "So fair fights *are* just legends."

I went in to find Chloé sitting on her bed, knees hugged to her chest. Without saying a word, I sat down next to her, wrapped an arm around

her shoulders, and held out a few small squares resting on tinfoil. After sampling the snack, Chloé rested her head on me, wincing into the slight lean. While she collected her thoughts, we both stared straight ahead at a painting on the opposite wall that she had made last semester. In shop class, she had put together a puddle-shaped frame for the canvas. The background paint reflected so little light that there appeared to be a black hole hung on the wall. Offset, but near to the middle—the “gravitational centre” as Chloé had put it—was a light azure blue star, set alone in the void. After sunset, the star’s pigment would radiate for at least an hour, casting the room in a glow that reminded me of bioluminescent plankton. She had titled her painting *Αρχέγονο Αστέρι*, meaning *Primordial Star*.

The sun was snuggling the horizon and its ancestor in the painting had started to phosphoresce by the time Chloé spoke. Near as I recall, here’s the story, in her words:

Letter carriers, painters, pool and roof cleaners, landscapers, security guards, rodent exterminators, librarians, restaurant wait staff, and short-order cooks. Keep those jobs in mind, Mom.

First day post-suspension started without any hints of a plot: exam prep, student talks, all the usge. After school rang out, that’s when trouble followed. Syl had a spare, so she had left early, instead of being company.

Taking a tot-toter home would have been faster and safer, but it was such a nice day that despite the countdown ’til tomorrow’s presentation making time feel pushy, spending half an hour walking to get here felt like it’d help make the brain juices flow. Wish they would have flowed a bit faster, though. In the alleyway near Umpqua Bank, a small gang of students was waiting: Carly, Laurie, and Mauve—not their real names. A tense vibe of hostility oozed from them, like their eyes cast electric swords. Flight wasn’t an option: all

three were jocks, and Laurie a sprinter. A four-on-one fight would have left you upset beside a gurney or weeping by a slab. Calling for help came to mind a heartbeat too slothily. The fourth thug had snuck up from the rear. With a steely grip and sweaty gym sock, the thug took away any possibility of yelling or escaping—and slapped the comm to the ground, stomping on it to kill its response to voice controls.

Lanky Laurie strode over, followed by her henchcrew. Mauve, the stocky one, walked out of sight, but near enough that her breath fouled up the air from behind. Laurie’s voice was all trembly when she said, “My father’s employer canned half its security team last week. Guess who’s now job huntin’?”

She nodded to signal a kidney jab, which Mauve delivered.

Laurie continued, “Three days ago, my mother got told that her shift was made part-time at the library. Know why?”

See the pattern? Rhetorical question, nod, kidney blow.

“Mauve’s older brother can’t even find temp work as a short-order cook. Him being shy of smarts, what’s he gonna do?” she asked.

The third hit felt like the punch had burst from the inside. Like knee-buckling, body piercing, black-out pain.

She lobbed one more jab to Mauve. “So ... Rabota Designs makes sentry bots, book reshelvers, and chef arms. Your dad works there, right?”

Bracing for the fourth pummeling didn’t help. Knees finally gave way. Mauve and Carly landed a few kicks, ripping these clothes in all the wrong spots. Laurie was about to stomp down hard when Syl—Amazonian, square-jawed, and pumped—entered the alley holding a black paper bag.

Mom, you shoulda seen Syl’s eyes: Soon as she spotted the hate dance, they went from calm to calamitous instantly.

Her eyes burned with the vehemence of a thousand stars. Utter unbridled wrath. She dropped the bag and erupted at the mini-mob, fists balled into Fear and Frenzy. It was like she had stumbled upon the atrocities of Dachau and her hands were unvanquishable liberty. Windows rattled when she screamed and the road shook at her tempest. If loyalty was a raindrop, she was a hurricane.

Sylvia bellowed, “Try it, Laurie! I’ll hunt ya down and rip yer feet clean off!”

Before Syl could cover the distance, those yellow-bellied poltroons scattered like coywolves panicked by an angry pig. Frowning, she bent to the ground, pulled out the moist sock and asked, “Needin’ a hospital?”

“More like mouthwash and—ow—pain pills. You filling your spare with vigilantism for extra cred lately? Or just waitin’ for the perfect *deus ex machina* moment?”

Syl brought the bag over and pulled out a brainstim.

My drive to protect my daughter revved up. I said, “Chloé, did—”

“It’s fine, Mom. Sylvia returned the stimmer after some light sense knockin’. She’s home, safe. Please don’t tell Mo or Izzy. No brain cells were harmed, right? And you’re not beside a hospital bed *because* she had just copped a stimmer from a fence. Syl wanted to soar through her biochem regimen to keep some paths open for next year. We’ll be study buddies every night until she’s confident enough that the teachers will judge her favourably. Oh, speaking of—”

“And your presentation?” I asked.

“You mean the one for students whose parents had jobs that Dad’s has taken away? Oh, yes, please, and square tires. Look, Mom, even if they were all bribed into paying attention, they’d never entertain it. Not now. A slightly less volatile and more topical subject came to mind, though: bullying. Syl can’t bodyguard forever and she’s waiting for—”

“Ask her to wait a little longer,” I said. While Chloé was texting her friend, I turned to the doorway and called out, “Hey Xander: Greece, France, Germany, and Portugal.”

“Dare I?” he asked on approach.

“Yer up,” I said, eliciting two groans for one pun.

Xander sat at the end of the bed, facing us.

“One name?” he asked in a hopeful tone.

Chloé shook her head.

“Unspoken rules about not outing a bully only favour the bully,” he said, a distant echo of his father’s advice penned so long ago. He seemed to be waiting for her reaction, but she held her face expressionlessly. “Well,” he continued, “when you’ve sprung a plan, we’re here. Cass told me your comm got trashed. Let me see it.”

As she leaned forward to hand him the comm, she let out a small groan. Xan held it up to the dimming sunset. The device had some scratches and its brand new replacement case had some minor dings. He said, “I need more light. Should it leak lithium, today would seem like a bottle of funshine in comparison.” Not long after he left the room an old jazz standard started swinging from my den. He returned with a bath towel, shut the door, and dropped the makeshift sound barrier against the door’s floor gap. His hands were empty.

“Where is it?” Chloé asked.

“Four days ago, someone contacted the police because they hacked your comm to learn you were on the school roof. Your hunch was right: tattlecomm. Why? Could Sylvia be a threat? Agents of chaos? A dragnet over Tyfós? Nothing makes—”

I said, “Xan, isn’t the question always *who* and the *why* follows?”

“Point. That BMP1580 chip is pretty new. A sophisticated infiltration like this would take either tonnes of time, meaning money, or have involved a coördinated backdoor across multiple manufacturers. Even if someone was hoarding zero-day ’sploits, there’s no way a script kiddie or

lone wolf could—”

“Ty?” Chloé asked.

“Unlikely,” Xander said, the venom in his voice was blatant.

I said, “That leaves governments or megacorps doesn’t it? Anti-cute.”

Chloé’s room glowed a vibrant blue as the day’s final drips of sunlight slipped below the nearby mountains. My head swirled, filled with a dozen simultaneous thoughts, until three converged quite loudly: Lone wolves, coywolves, and a loose dog chasing a ball. “Are they all related?” I asked, more to myself than my family. They both looked at me. “Trufflers, car accident, and rooftop,” I said. “Let’s say a government agent had tattled. They must’ve known the school’s rules—”

“And predicted the suspension,” Chloé said. “Plus, future admission letters to prestigious universities will probably get tossed, competition being savage. They intruding out of fear?”

Xander said, “Tau. Book search. Sun Tzu, *The Art of War*. Search for: spy *and* knowledge *or* information, please.”

Tau, our home automation assistant programmed with the voice of a snobby British butler, started vocalizing through the bedroom’s overhead speakers as it read, “It is through the information—”

“Tau: Skip paragraph, please,” said Xan.

“It is owing to—”

“Tau: Skip, please.”

“Lastly, it is by—”

“Tau: Next, please.”

“The end and aim of spying in all its five varieties is knowledge of the enemy; and this knowledge can only be derived, in the first instance, from the converted spy. Hence it is essential that the converted spy be treated with the utmost liberality.”

“Tau, stop please,” said Xander. “Our comms are Sun Tzu’s spies and we’ve been hemorrhaging information. Tonight, we’ll stem the flow by going dark.”

The day's last rays extinguished, almost as if the sun was also listening in on our talk.

Chloé shifted her weight off of me with a grunt. She said, “A comm is great for emergencies, you know—in theory—to help survive attacks by wild animals or kidney-bustin’ gangs. If Sylvia didn’t have hers ... Oh, she’s expecting a collab session tonight. How’s that gonna work with no comm?”

I said, “The old-fashioned way, Bumblebee, by visiting her in person.”

“Their farm’s in the boonies!” she said. “And what lies could possibly cover our commlessness?”

“It’s not *that* far. Take the tot-toter and use the travel time to prep,” I said, desperately searching for a compromise. “This eve’s a wash. Pass a note to Sylvia in person, surreptitiously, telling most of the truth: Your comm was invaded and your old fuddy duddies are putting it on ice until they know more. What harm will a few more text—”

Xan was already up and out the bedroom door. He returned with Chloé’s comm. “Here,” he said holding out the device. Looking at our daughter, he pointed two fingers to his eyes, then to the comm, then back to his eyes. She showed us the texts:

wanna study irl

♥! 📺? u grounded?

sorta. situation 😊

👍! we're swappin' 🌞s for sure! 🕒

farm? each 🌙 'til 🚫 exams?

He gave her a thumbs up, in real life; she gave him stink eye. Seemingly impervious to her silent scowl, Xander held out his hand and motioned with his fingers for her to pass the comm over. Chloé flipped it onto the floor and folded her arms across her chest.

“Xan,” I said, and didn’t need to say anything more. My husband left the room, scooping up the comm on his way out. As the door clicked shut, I said, “Whatever you’re feeling right now, it’s safe to talk about it. This is a crossroad, Bumblebee. When faced with conflict, difficulty, strife, or unfair predicaments, how you act outwardly—the way you interact with other people—defines the very content of your character. Life is always riddled with compromises, sometimes inequitable ones. A person who never learns to express what they’re feeling will etch the same grooves of malcontent in their mind many times over, leading to serious problems in all their relationships, both present and future. Let me in or shut me out: I will love you regardless of what road you take.”

Jostling the bed as little as I could, I left to give her some peace and time to think. Before I touched the doorknob, Chloé said, “Can’t a kid just be angry?”

“Dive deeply,” I replied, waiting at the door, facing her in the painting’s waning glow. When she wrapped a finger into her bangs, the light cast the tightly woven black lock with a sheen like a raven’s wing.

“No comm,” she said, releasing the lock to count out negatives on one hand. “How ’bout no friends, no parties, no dates, no job, no nothing! What’s he on? It’s a social death knell, like punishing the victim instead of

the stalker. Every kid at school hates our whole family. How does taking away the comm help anything? Sure, tossing it onto the floor was a jerk move, but isn't that kinda what he does when he avoids your questions?"

Ker-splush!

After a long pause, I said, "Idea Knight!" She raised a brow. "An eve for sharing and defending ideas, on the regular. Health, science, nature, physics, conspiracies, you name it, except sensitive topics—like religion, guns, abortion, politics, or gossip. Well, maybe a *little* benign neighbourly gossip wouldn't hurt. Community building, schmoozing, hob-nobbing, wouldn't that be the bee's knees? We'll host, at least at first. I'll dangle an open e-vite on the school's parent-teacher group and see who nibbles.

"As for your father, well, that's mostly his story to tell. I can say that he's hiking back from a dubious decision he made long before I popped you into this world—"

"Mom! Visuals!" Chloé said, with a smirk and a glimmer of glee in her eyes. Her whole demeanour had relaxed.

"—*and* he is hyper-aware that his pouty-faced, disgruntled, passive-aggressive behaviour won't swim with me; neither will yours."

* * *

I found Xander in the basement, packing Psynæris into several shipping crates. "Hook a buyer?" I asked.

"Enough to foot Chloé's room and board for two years of on-campus studies. Escrow next week and—"

My furrowed brow must have clipped his tongue. I was of many minds. Let loose my feelings about Isabella before Chloé let's it slip—not directly, but maybe by texting—thereby unintentionally passing a baton to whomever had been orchestrating our fates. Or we could leave. How far north would we need to go before wriggling free from an invisible omniscient hand?

"Hey, Xan, sorry, hon, I hate this. Strangers sifting through private

vids, cars always relaying our whereabouts, tiny microphones perpetually eavesdropping from every device, and everyone blind to a politically motivated power grab that Kafka himself would have buried under the third-page heading ‘National Safety’—smiling all the while. Aren’t we fulfilling the wildest fantasies of fascist dictators by accepting government claims of thwarted extremist activities all because unelected state members holding secret sessions decided that wiretapping the people falls on the gold side of societal good?

“Chloé and trouble are now synonymous at school, her peers won’t magically forget between now and next grade. What if we moved again?”

His dark brown eyes locked with mine to make sure I had emptied before he asked, “Where could we go that wouldn’t be a symbolic gesture of futility? They could retaliate because we escalate. For now, let’s avoid making new digital footprints. Test their response.”

No counterpoint sprang to mind because he was right: Everywhere was under surveillance these days.

In hindsight, that moment in the basement was probably the best possible time I could have broached the subject of my feelings for Izzy. I didn’t, so it gave the Agency a perfect opportunity to shred my world with a single, strategically placed note.

* * *

Meanwhile, Yūna had told us around this time that the Agency of Defence depended upon prognosticating calculators that couldn’t think. By going dark, we stopped feeding them the information used to predict our prospects. Rather than alert its creators to a dearth of data, Skopós, with all the entrepreneurial wherewithal of an abacus, revised its estimates using the inputs it was afforded. Chloé’s impact on the self-perpetuating regime propped up by free market capitalism dropped to four per cent.

Yūna Futaba (July 27, 2064)

Replacing soldier fodder with non-bio-based fighters would stem the onslaught of shattered mothers' hearts; what haunted me was the answer to who those machines would be battling. LeMay was right about being first. He may have been wrong about the form. Drones were easy to spot, easy to mow down. My worries were more about building an armada of nano-sized poison machines a hundred million strong. Slowly introduce them overseas to an enemy nation state. Wait until they all had settled in. Simultaneous jabs of botulinum. No bombs let loose, no cities destroyed, no rebellions suppressed, no martyrs risen, nobody left to plot revenge. So. Among other reasons, that future motivated my own.

Evening entered unseasonably chilly and a low-lying mist rolled in. I flung the satchel over my shoulder and proceeded on my perimeter run not long before the sun saluted the horizon. Shortly into the routine, I spotted a third sentry. That meant my window to bridge the fences was now less than a minute. Aborting wasn't an option. I had to adapt.

Spiral razor wire lined both inner and outer fences. There wasn't enough time to burn my way through both before a roving sentry would spot my movements. As I ran behind the shed, I unlatched my satchel to rummage out: a pair of leather mitts, a navy blue jar, and tape. I dropped everything while maintaining my pace for another jaunt around the perimeter. My heart was nearly bursting through my ribs, but not from running. I slowed down well before reaching the shed.

Once out of sight, I removed the lid to the subterranean thermite mix. There was barely enough time to form two small pouches out of the tape before leaping up into another lap. The sun had almost set by the time I had returned to the shed. I poured the thermite into the bottom of each pouch, followed by the iron-aluminum fire starter. Another run let me maximize the window between sentries. The razor wire was affixed to the fence at touch points about half a metre distant. With pouch in one hand and jar in my mouth, I flew up the fence, taped the pouch to a touch

point, then placed the jar on top of the pouch, holding it there—upside down—with more tape. I jumped, plummeting more than three metres, and sprinted away before the next sentry rounded into view.

Two runs to freedom.

At the shed, I darted to the top of the fence, pulled a safety match from my shoe, lit the thermite-filled pouch, and let go. Upon landing there was a sharp hiss from above. Most of the light was stopped by the jar; whatever light tried to betray me did so below the shed's roofline. A white hot blob melted through the wire and fence rail, bleeding into terra firma. In the remaining time, I nabbed one of the new reinforcement boards from its pile and prepped it at a right angle to the fence. The board was long enough to span the valley of the sentry bots. Barely.

Last run.

As I passed the sentry bot, my heart tallied the time in thumps. I hoisted the heavy panel up and leaned it on the fence. Taped the remaining thermite pouch to my body. Ascended the fence. Donned a leather mitt and threw the thermowrap over my shoulders. Brushed the razor wire aside. Lifted the panel, shunted it over the valley. My improvised balance beam was ready. I hesitated. Would it hold? Three heartbeats. I pulled myself up onto the top of the fence, raised my right foot alongside my hands, and with all the strength remaining in my right thigh muscle and abs, hoisted myself up to deftly plant my left foot on the panel. Time drew thin. The beam felt marginally wider than a tightrope. In the distance, a red light pierced the mist. A sentry had rounded the bend. I released the fence, stood up from my stooped position, and paced myself to the other side. The beam barely flexed. Solid. That red light panned as its infrared vision swept from side to side, up and down. Heat radiating from me wouldn't remain hidden for much longer.

Knelt. Transferred the pouch from my side to the nearest touch point. Reached for the jar, but it was on the other side. No time to fetch it. Pulled another match, lit it up, tapped the pouch, turned my head, and shut my

eyes. A tiny sun exploded with scintillating radiance. The sentry stopped. Its turret spun up. I dropped the thermowrap, blinding the machine for a moment. The sentry moved to avoid the thin thermal sheet as it feathered through the air. I parted the razor wire, bent down, reached through the space, seized the fence top with one hand, and pushed off the beam, jumping into the night. This sent the panel tumbling towards the sentry, which fired upon its falling foe. In a single motion, I twisted through the jump, latched onto the fence with both hands, and felt my body submit to earth's pull, which swung me into the fence with little mercy and a loud rattle. Despite my failure as a gymnast at the high bar, I was finally out of the Tombs, having bashed into the fence from the freedom side!

The turret aimed. I yielded my hold. A shot fired. Nipped my arm.

My feet hit cement and I rolled onto my side to absorb the blow, narrowly avoiding tangling limbs in the fence. The turret fired several more times, unable to land any more hits while I ran a random serpentine pattern up to the tree-line. Sentries were forbidden to fire beyond a certain range to avoid injuring wildlife or lost civilians.

Sirens blared.

I held freedom without liberty.

Into the woods I raced, smearing soil, berries, pine needles, and mosses over my body along the way—a poor thermowrap substitute that helped me blend in with the forest. The surrounding area seemed eerily absent of nature's sounds. Shooting, fence rattling, and thumping through lush fern-infused lands probably played a part. It was as if I had traded a tomb for a cemetery. Overhead, foliage dimmed the night. Low-lying mist limited my sight to several meters. From the maps, I knew trailblazing downhill would lead me first to a stream, followed by a small town several hours distant.

I held hope of alerting the world to an impending nightmare.

Trees stretched high above me, massive boulders jutted from the mountainside, knotted root systems entangled the forest floor. As I

dashed through the ancient scenery, I hurdled fallen timbers, dodged piercing branches, and tried desperately not to trip. All the while, I was attuned to every leap forward, feeling for a steady downward slope.

Two new sounds rose above the din of my racing: buzzing drones and the burbling stream I sought. No doubt the Agency had unleashed a small battalion of mini-drones to flush me out, pursuing me from above until the moment I emerged from the wilderness. A larger mothership would be hovering above the treetops nearby, providing an in-air recharge for any mini-drones needing to juice up. Normal drone operations used laser-based energy transfer, but tonight's weather hampered the necessary line-of-sight. The Agency didn't dare send mini-drones into these woods; even high-end autonav systems would flounder to fly through a forest this dense.

I knew the drones had sensor arrays for thermal imaging, movement, sound, and scent perception. Flying bloodhounds with infrared vision. Most of their superpowers would be useless from high above, especially without having established a visual. So. I stooped to replenish my mud facial and body wash. Underneath the burbling and buzzing, I heard an almost imperceptible sound—a leaf rustling. There was no wind.

An early hour and shroud of mist helped hide me from my pursuers, yet also veiled any nighttime prowlers hunting for easy prey. Fruitlessly, I swept my sights all around, straining to see any signs of a beast. Nothing moved, nothing stirred. Staying still spelled my demise. Following the stream to town, I realized, perhaps a little late, meant that I'd be ensnared: The Agency would have put the nearest towns under watch, not long after the alarm sounded, anticipating my most probable destinations—no matter, that was a worry for later.

An immediate sense of urgency overwhelmed me: I felt certain that a hunter was drawing ever nearer. Bloodshed held no appeal. The night went stiller than still, as though the forest itself did not want to watch my final breath.

I bolted, searching down the waterline for a rift in the mist or perhaps a den in which to hide, wishing beyond reason that my pace would outstrip the hunter, the Agency, and even death. My limbs burned, my lungs heaved, my throat was a desert, and my heart verged upon rupture. I slowed for a moment of reprieve. The mist had thinned.

Fading whispers of tiny, buzzing drones stirred the forest air far behind me. Moist soil, littered with wet leaves and nature's debris, deadened my footfalls. Ahead lay throngs of trees that loomed over tattered terrain I'd have to tread. Around me were signs of life's endless loop: Saplings that had sprouted from the bodies of their fallen elders and lofty firs elevated to dizzying heights in their prime. A distant waterfall rushed and the stream burbled a few feet to my left. To my right, a shadowy form slipped between ferns atop a mammoth-sized stone wall.

Through the lifting haze I saw the yawning of a den. And wherever there's a dwelling ...

I stopped, breath heavy. I hesitated, every muscle throbbing. I bent over to stretch, halving my already small stature. I erred. A branch snapped. An ebony mountain lioness, my hunter, revealed herself a few metres above me. She snarled and hissed. The brawny beast leapt down at my throat, front paws splayed.