



# AWWE

— A NOVEL —

*Not only timely and informative, but  
suspenseful. I could not put it down.*

*Peter F. Michelson*

*An erudite technothriller. Impressive.*

*Marco Larsen*

PIERRE R. SCHWOB

## PART I

*Suggested play:* (See this book's last page for an explanation)  
Nielsen, Carl: Clarinet Concerto, FS129, Op.57 - 2. Poco adagio

— 1 —

### **Psychopaths are born, not made.**

That is the consensus. That said, an event in Galileo Olrik's young life honed the edge of his nascent malevolence, set to drive a poisonous thorn into humanity's side from which it is still reeling today. He is three-quarters Dane, one-quarter Inuit, and one hundred percent psychopath.

Although his early years were spent in a regressive environment, the child was precocious. Not eight, he had abandoned his given name of Gaaba and insisted he be called Galileo, inspired by the sparkling long winter nights.

His parents had ditched him a few hours after birth. He was raised by young Uki, a single, simple woman, outside the periphery of their Greenland settlement.

Alone, she had suffered a harrowing miscarriage at full term just a week earlier. As Uki's breasts were full and tender, and to alleviate her isolation, the elders offered her a small stipend to nurse the baby. Having no other income, she took the orphan in and gave him her nipple.

Secluded, the two were soon forgotten.

To save on groceries, or perhaps because she didn't know better, Uki continued to breastfeed the boy into his mid-teens, at which point he killed her.

### **When he turned five,**

Galileo joined the local school run by a devoted Jesuit in a rundown trailer. Brother Josephus was a kind and attentive teacher who taught all grades. The place became the center of Galileo's intellectual universe. He absorbed all lessons like a thirsty sponge. The good brother, who was somewhat of an

authority on Dostoevsky's criticism of the Society of Jesus, spent extra time to challenge his gifted charge and allowed him to move up several grades. Soon they were conferring in conversational Russian.

But the teacher noted something odd about his student. When the boy badly hurt a classmate during a wrestling bout—he had ripped the kid's ear clean off—Galileo's yellow eyes stayed cold. Devoid of empathy. But his academic agility was such that Josephus concentrated on cultivating the teenager's gifts. As he was demonstrating unusual affinities for languages and talent in math, his teacher was convinced the boy would do exceedingly well in an advanced learning institution.

The fourteen-year-old Galileo was only one year away from graduating when Katrina joined his class. Half-Han, half-Caucasian, she was as bright as she was pretty. Her family had immigrated to Greenland from the Jewish community of Kaifeng, China, where about one thousand Jews live in simmering tension with the government.

At the age of nine, still in China, she had been attacked by ignorant, enraged locals. Possibly therefore, she had developed a dissociative identity disorder—also known as multiple personality disorder. “Enough for a *minyán*,” remarked a soulless wit... But around Galileo, she seemed to settle into her primary persona. There was something behind her ever-calculating eyes Galileo found irresistible. Katrina returned his interest as she was taken by his mental intensity and physical strength. And he could be so funny! They became inseparable—Uki's sullen disapproval notwithstanding.

### **Two months later, this came to a crashing halt.**

The two were running around in the snow behind the trailer, whooping with laughter when Katrina lost her balance. Galileo instinctively reached for her and, just missing her flailing arm, grabbed her coat and ripped one of its pockets as the girl fell on her back.

Still giggling, he reached for her hand to help her up.

He froze as Katrina let out a loud, curdling shriek, curling up on the ground, pressing the torn pocket to her hip. As he knelt, she turned away, trembling uncontrollably.

Alerted by the noise, Brother Josephus came around, running.

“She stumbled and fell,” Galileo explained. “She’s not hurt. I think she’s faking it for fun.”

Josephus, aware of the girl’s history, gently put his hand on the boy’s shoulder, “Go home, Galileo. Let me take care of this. I’ll see you tomorrow.”

“But she’s fine. We were just playing. I want to stay.”

“No, Galileo, I need you to go home now. I’ll talk to you tomorrow. Go now.”

So the boy returned to his hut, where Uki nursed him.

The next day, Galileo ran to school, looking forward to seeing Katrina again.

She was not there. Her father and Brother Josephus were in muted conversation, the torn red coat on a desk. Katrina’s dad said his goodbyes and left without a glance at the boy.

Josephus said, “Sit down, Galileo.”

“Where’s Katrina?”

“She’s not coming back. She is not well, and her parents ask that you not see her again. Anyway, they will be leaving soon.”

“What? When? What’s wrong with her?” Before his teacher could reply, Galileo shouted, “Why can’t I see her? She is my friend!”

Josephus raised his hand, “Sorry, but that won’t be possible. As I’ve said, Katrina is not well, and her parents want you to stay away from her until they leave.”

The boy hissed, “It was an accident! She fell, and I tried to catch her! Will I see her again?”

With an edge, Josephus said, “No, you can’t. I told you that it’s not possible. I’m sorry, but you must go now.”

### **Thus banished,**

the boy walked home, his anger mounting with every step. By the time he reached Uki’s shack, his vision had reduced to a dark monochrome tunnel. As he stepped inside, Uki asked, “What happened?”

“I can’t see Katrina anymore.”

“Why?”

Galileo clicked his tongue, “Something’s wrong with her.”

Uki huffed, “Ha! No great loss. I did not like her, and you have me.”

With a rictus of hard rage, the boy picked up a rusty harpoon he had salvaged from a dump and hurled it towards Uki. Full force. Impaling her to the timber wall. She died an hour later, Galileo observing her gurgling and spasms with detached interest.

In no hurry, Galileo methodically packed everything he needed in a haversack. He then left the corpse and the shack behind. After walking off-roads all night, crossing a few thin streams—now raging torrents due to glacier melting, he reached the port and embarked on a Soviet trawler that was hiring—no questions asked. He would work on it until turning sixteen, spending rare idle moments gazing at the waves—thinking of Katrina.

Would he ever see her again?

He would. Sort of...

*Suggested play:* (See this book's last page for an explanation)  
 Stravinsky, Igor: Concerto in D for String Orchestra - 3.Rondo: Allegro

— 2 —

### **In the early seventies, using forged documents,**

sixteen-year-old Galileo applied to the Faculty of Psychology at the Leningrad State University. He passed the entrance exams with flying colors. The time he had spent on the trawler had given him ample opportunities to study the many second- and third-hand books he would beg, borrow, or steal when the boat was dockside.

Galileo had grown into a forbidding young man, his classmates sagely keeping their distances. The back of his shaved head merged vertically with his thick neck. No indentation: a hairless silverback gorilla. Yellow-amber eyes squinting under high arching eyebrows; wet lips surrounding a small, snide mouth.

### **As a sophomore,**

he was about to meet a fellow student who could not be intimidated.

The university was giving a retrospective concert offering compositions by one of its recently deceased alumni.

Galileo walked along the university buildings, as usual admiring their Baroque and Neoclassical dichromatic architecture. He crossed the Dvortsovaya Bridge and, passing the Winter Palace Garden adjoining l'Hermitage, he reached the courtyard of the renovated Bobrinsky Palace where the concert was to be held. Arriving early, he ambled through the building's mostly deserted rooms.

In what was advertised as one of the building's former stables, now transformed into a charmless conference room, he noticed a young man, blond hair neatly parted to the left, looking intently at the floor. Curious, he approached to check what was captivating the fellow's attention. Oddly, part of the modern flooring gave way to a bulky, transparent cover. Under it, lay the thick lips of a deep well, its interior disappearing into blackness. A "conserved original 18th-century structure," explained a wall-mounted plaque.

“A good place to keep your enemies fresh and hydrated,” Galileo quipped.

The young man, pulled from his trance, turned his head towards the voice. He let out a short laugh, his full lips registering a cold smile that did not reach deep-set eyes, taking instant measure of the odd-looking character who had interrupted his contemplation.

“I was thinking exactly the same thing,” he said. After a short pause, “You’re not from here, are you?”

“I wasn’t born here; no. Must work on my accent.”

“What are you doing here? What’s your name?”

“I am Galileo. In my second year in psychology and finance at the university across the bridge. You?”

“Third-year, same school, but Law. Call me Volodya.”

### **After the concert,**

Galileo and Volodya (who couldn’t care less about that music but had been forced to attend for an essay on Stravinsky’s forbidden marriage to his first cousin) walked back to the university towards Galileo’s hostel. His companion’s home was near to it, on the north-side of campus. Volodya knew an interesting shortcut across the Twelve Collegia building: at four hundred meters, it was one of the longest academic hallways in the world. As they passed the august busts separating the large Romanesque windows to their left and the glassed-in bookcases on their right, their steps echoed smartly on the inlaid parquet floor. Back then, students wore hard-soled leather shoes—not decadent sneakers.

Like everyone in Russia, then and now, they discussed politics.

Galileo asked, “An ambitious fellow like you must carefully select his mentor, his guru. Got someone in mind?”

After a beat, Volodya replied, “Yes. Anatoly Sobchak. An alum. Brilliant and well-connected.”

“Sobchak. Huh. Doesn’t he have some mildly subversive ideas?”

Volodya did not register his surprise but was impressed by the well-informed young man. *The gorilla has a brain. Interesting.* “Yes, he is perhaps a bit ahead of his time. But his horizon is not limited to domestic issues. He studies

the world. That interests me.” After a pause, he added, “And he is coming here to teach next year.”

They walked in silence for a few minutes. Then Galileo said, “Given your interest in foreign affairs and the fact that this university is a known recruiting ground for our intelligence organs, are you thinking of joining the KGB?”

The Russian stopped and peered at Galileo, “Is this an invitation?”

Amusement dancing in his yellow eyes, Galileo said, “Without thinking, who should succeed Brezhnev? After all, his health is not great.”

Without hesitation, Volodya replied, “It should be Yuri Andropov. Without question.”

“Ah! Again, the KGB angle!”

Volodya looked at his companion, “Your psychological inquisition is going to run you into some trouble one day, my friend.”

“Yeah, maybe. But couldn’t this country use new leadership? Brezhnev is too much of a consensus-seeking guy. Andropov wouldn’t care too much about what his politburo says. He’d bring back needed discipline to the state and regain its position in the world. The old *gosudarstvennost* (nationhood)—the ‘G’ in your ‘KGB’—and *derzhavnost* (major power status) ideas.”

“Roll tanks in Moscow like we did in Budapest in ’56 and in Prague in ’68?”

Galileo raised an eyebrow, “Worked there, didn’t it?”

Volodya did not reply.

After a while, Galileo said “Volodya is a diminutive, isn’t it? My full name is Galileo Olrik. What’s yours?”

Looking into the distance, the young man replied, “I am Vladimir Vladimirovich Putin.”



## PART II

*Suggested play:*

Dvořák, Antonín (Leopold): Symphony No.9 in E- ('From the New World'), Op.95 -  
1.Adagio. Allegro molto

— 3 —

### Teased out of the abyssal darkness

by the floodlights mounted on the underwater autonomous vehicle (UAV), the suspended particles reveal relative motion as they rush towards the camera.

Two miles below the waves, the submersible receives a fleeting signal. Instantly, the AI-governed brain orders the machine to hunt for the source of the distant sonar return. It tweaks its heading and dives deeper.

The image on the screen does not change for a long minute. Then a pale form emerges from the gloom. As the UAV glides soundlessly, the spectral shape resolves into a recognizable structure: a huge trident. The AI automatically analyzes the dimensions and displays them on the screen: 2.96 meters, from the middle prong's tip to the head's base. Exactly ten archaic Athenian *podes* (feet), a footnote points out helpfully.

The UAV continues to descend, following the inclined shaft, until the granite hand holding the weapon is discernible. Following its internal algorithms, the UAV follows the sculpted arm, shoulder, neck. Finally, it settles in front of the Olympian's colossal head. Poseidon's headband is inscribed with the ancient Greek characters:

Ἀτλαντίς

### **Pic de Lucrète stops the video**

and asks for the blinds to be raised to let in the California sunshine. He looks at his team and chuckles, “Yeah, Atlantis. No less. Nice simulation though.”

Pic, one of the directors at the Palo Alto Research Institute, is chairing their monthly New Project Evaluation Board. PARI is a renowned private outfit about two-thirds bleeding-edge science & technology research center and one-third non-partisan think tank that issues position papers widely read by governments, academics, and corporate boards.

Pic and his experts are gathered to vote on whether new requests arriving at PARI merit a second look or are rejected out-of-hand. Projects coming from potential clients are automatically challenged—although proposals from even long-established accounts must sometimes pass through the eval-board gauntlet. PARI is... selective: nine out of ten submissions are politely returned to sender.

They are in the third-floor conference room, and, although vaccinated and boosted-up months ago, they keep melancholy empty chairs between them, the social-distancing impulse still there.

Pic continues, “This sim comes from the Eleni Foundation, one of our existing clients. We’ve done some historiography work for them, and they are making noises about an endowment to expand our humanities research if we take on this project. But I should also share our client’s motivations, some of which are intriguing. Some—to be charitable—less so.” He scans the room, “You may know that the lost island of Atlantis was mentioned in Plato’s latest writings. Presumably, as a teaching device. That would be around 360 B.C.E.”

He extends his thumb, “But here’s the first kicker: our client acquired a super-rare Egyptian papyrus scroll. It had been squirreled away just before the last native pharaoh abdicated—upon the Persian Achaemenid Empire conquest of Egypt in 343 B.C.E. The fragile, tightly rolled-up document was analyzed at SLAC’s Stanford Synchrotron Radiation Lightsource. These guys can recover text from even the most tortured media. (You will remember the Archimedes palimpsest that broke the internet, a few years back.) The Demotic text they

retrieved convinced our client that Atlantis could be real. So, they want us to design a UAV to find it.”

Pic makes a face, “And here’s the second kicker: Eleni’s chairman wants the submersible to stay underwater, entirely autonomous for up to twenty years. He wants the machine to surface only upon discovery by its built-in Artificial Intelligence. He doesn’t want to waste time on recharging cycles, etc.” He grins, “Ask me why later. So, feasible?”

Ming, their brilliant AI guru, turns her wheelchair towards Pic. Although she has been confined by paraplegia since her teens, her disability has long gone unnoticed as her energy and smile always light up any room she is in. She says, “From my point-of-view, sure. There is no showstopper for us.”

Talal, the ever-skeptical nuclear physicist, lifts his hand, “There is for me. The *only* feasible way to power a UAV for twenty years, without recharging, is to use a radioisotope thermoelectric generator, or RTG. Assuming we have practical radiation shielding, we would need americium-241 or plutonium-238 dioxide. The latter is the same energy source used by the two *Voyager* spacecrafts and some of our rovers on Mars. After twenty years, it’d still have roughly eighty percent of its power.” He lifts his hand again, “But it’d be impossible for a non-government-sanctioned civilian outfit to get their hands on that stuff. And even if they could, they would never be allowed in a million years to drop it in the ocean. So that’s a killer, and I don’t see a way around it.”

Phil Janson, the oceanographer, notes that twenty years is also an absurdly long time to operate under the surface without maintenance. The unavoidable biofouling would be fatal.

Siobhan Adaim, their freckled, auburn-haired meteorologist, and resident provocateur asks, “Skipper? So why the twenty years?”

“You won’t believe this, but the guy is an *astrology* nut. He—”

Dava Altman, the otherwise liberal-minded astrophysicist, covers her eyes with an exasperated groan.

“—is convinced that the discovery must be made before the next ‘Great Conjunction’ of November 2040.”

Someone says, “*Great Conjunction?*”

“Yeah, well, let’s not waste too much time on this. That’s when Jupiter and Saturn are aligned with the Earth, so their combined (air-quotes) *vibrations* do something—please don’t ask me what!”

The economist Bertrand Bettencourt, a recent PARI recruit, looks at Pic, “I think I know the answer to this, but the fact that we could lose the endowment if we—”

Pic interrupts gently, “You’re right, Bert. It is immaterial to our evals.”

Siobhan is not ready to let this go. “Can’t we move the client off of the twenty-year requirement?”

“I don’t think so. I’ve heard through the grapevine that we aren’t the first bunch to bat this around, and Eleni hasn’t yet taken ‘no’ for an answer.”

“No to the science?”

Pic sighs, “With enough money, I suppose they think they can buy better facts.”

This is met with multiple groans again.

Pic looks around, “Okay, it looks like this is a non-starter for us. Irrespective of how interesting this mission might be, we can’t entertain something that ignores hard science or is based on wishful thinking—no matter how important the client might be. I’ll call their chairman, and we’ll have a ...”

In unison, the team completes the well-worn, in-house sentence, “...difficult conversation,” to general laughter.

As the meeting is winding down, Alice, Pic’s assistant, knocks on the glass door. She gestures that he has a call and points to the ceiling.

Giving Alice the OK sign, Pic excuses himself and returns to his office.

PARI’s Chairman and CEO, Dr. Baudouin van Eyck (“Baud” to his friends—a few of whom are nerds who enjoy the reference to the old dial-up modems), is on the line. “Pic, could you please come up? Something may have come up in Tokyo.”

Pic cordially detests gyms—temples to malodorous self-absorption, he thinks. He uses the stairs, his sole daily exercise as he can only commit weekends to his enthusiasm for extreme sailing and wreck diving.

**Pic de Lucretè is in his early forties,**

yet his longish hair is flowing quicksilver. Brushed back, it reveals a broad, intelligent forehead. His bright azure eyes, set deep, are both calm and alert, strikingly penetrating. Nearly six feet, his posture makes him appear taller. Although he can be a bit of a pedant, he exudes commanding confidence, tempered by just the right amount of reserve. Charisma and charm. His smile, which he is quick to offer, is what most remember... and want.

He proceeds down the carpeted hallway leading to the executive suite. The wood-paneled walls are interrupted by lit alcoves displaying a few of PARI's proudest (non-classified) R&D successes.

Hans, van Eyck's dour Cerberus, acknowledges Pic with a rare smile and buzzes him in.

Van Eyck's large office is astonishingly sparse. The room is lit by concealed spots in the ceiling and through two wide windows on adjacent sides, overlooking the San Francisco Bay shimmering in the distance. The eyes are drawn to a single Louis XVI desk, bare save for a black-shaded Empire lamp, a phone, and an open laptop. And one armchair in which van Eyck is sitting.

Gesturing towards the sitting area, he invites Pic in. "Please give me a second. On second thought, give me a couple."

Pic selects one of the four straight-backed mahogany chairs surrounding a coffee table made from a large North African hammered-copper dish. While his boss is finishing typing something, Pic gazes at the collection of Miró originals and signed photographs of van Eyck with assorted luminaries on the opposite wall; the other contains a built-in giant screen, now dark.

Although raised in the Low Countries, van Eyck speaks without any accent. He has the interesting tic of using similar expressions in adjacent sentences. Baud calls it "tunneling," a nod to his passion for quantum physics. A formidable mathematician, he proved an important conjecture in Diophantine analysis while in high school. Well-read, he can use a turn of phrase that eighteenth century Edward Gibbon would recognize, occasionally raising eyebrows from less literate contemporaries.

But van Eyck is even more renowned for his political and leadership skills, having developed PARI into a world-class institution. He took to heart the

advice from his late friend, Burt Richter—1976 Physics Nobel laureate—who ran the Stanford Linear Accelerator Center, when he told van Eyck, “I try to hire people who I think are smarter than I am...”

He took a four-year sabbatical—as he calls it—to join the President’s cabinet as Defense Secretary a few administrations back. The Senate confirmed him unanimously, enemies sprouting later...

Van Eyck is tall and thin, with an underbite that would have made Max von Sydow proud. In his late sixties, his hunch makes him look older. He wears his thinning, regulation-length blond hair parted in the middle. His pale blue eyes are framed by wire-rimmed glasses that were going out of fashion when his father wore them. His spit-shined black brogues resonate as he crosses the hardwood floor towards Pic. As always, he is in a dark tailored suit, white shirt, and a muted Hermès tie he adjusts as he sits.

**“How did the eval-board go?” van Eyck asks.**

Pic grins, “A couple of ‘Ayes,’ but the Atlantis thing is a non-starter as the UAV would require a nuclear source that the client would never be allowed to get or put to sea.”

Van Eyck hand-swipes, “Right, let’s drop this one. I imagine the second-floor people will have some trepidations about losing Eleni’s potential endowment, but we can’t be held hostage. Now, let me tell you about this other intriguing opportunity. Have you heard of TENH and its chairman Makoto Yamashita?”

Pic nods, “I met Yamashita when he was running his family shipping empire. We did some work for them on threat assessments, didn’t we?”

“Right. Forgot you were part of that team.”

“It was a while back, right after I joined the Institute... But I am not familiar with TENH.”

“TENH stands for *‘Tengoku E No Hashigo.’*”

“Something like ‘Heaven’s ladder?’”

“Precisely!”

“Yamashita’s a Led Zeppelin fan? Although he’d use ‘Stairway—’”

“Perhaps. I don’t know,” interrupts van Eyck. “But that’s what he’s calling his new project.”

Pic asks, “Where do we come in?”

Van Eyck looks at him, “Yamashita didn’t give me any details. He impressed me on the confidentiality of the endeavor until he’s sure it’s viable.” He continues, “You must have impressed him during that last gig. He asked that you come to Tokyo to discuss this. He is ready to send his G650. Got your passport ready and things under control at the office?”

“Sure. Please give me the rest of the week to button things up. I can leave Friday PM if Yamashita can send his bird on such short notice. That would give me a day to rest over there, and deal with jet lag.”

Van Eyck rises, his way of ending a meeting.

Pic looks up, “Isn’t there anything you can tell me? Anything I can start to look at, to prepare?”

Van Eyck nods, “Yes, of course. TENH was formed to build a space elevator.”

*Suggested play:*

Hasegawa, Aiko: Shirabe (Melody), for koto - Sakura (Cherry Blossoms)

— 4 —

### **So much for rest.**

The corporate Gulfstream jet lands at Narita at half-past 11PM on Saturday. Past customs, Yamashita's helicopter pilot is waiting for Pic. He approaches him, replacing Pic's picture in his uniform's jacket pocket. He bows and says, "De Lucrète-san, Yamashita-san welcomes you to Japan. He hopes you will honor him by accepting his hospitality during your stay and join him for a drink before you retire for the night. May I handle your luggage?" Showing the way, he bows again, "*Dozō.*"

Pic bows in return, "*Domo arigato.*"

It is a clear night. The ride over the vibrant lights of Tokyo takes thirty minutes. As they cross into the Minami-Azabu district, their destination comes into view: a double-berth private heliport. It is in the middle of an expansive bamboo forest, north of a modern, white-marbled one-story structure emerging from the inclined hillside.

Shortly after landing, the pilot comes out of the cockpit and opens the aircraft's door. As he does so, a pair of large, but utterly silent sinister-looking black drones take off close by. "Security," he says casually, noting Pic's look. "Toroidal propellers: no noise. I hope your flight was pleasant. Yamashita-san will be here presently." He bows and moves back inside to fetch Pic's luggage.

A golf cart approaches driven by Yamashita himself. He waves, "Welcome to my home, Pic! Many thanks for coming."

### **Makoto Yamashita,**

a young seventy, is tall for a Japanese man, dressed casually in jeans, white sneakers, and a black T-shirt. His white hair is partly hidden under a baseball cap. His face creases into a broad smile, revealing bright wide teeth as he gets off the cart and extends his hand to Pic.



Pic takes the hand and bows deeply, “Yamashita-san, it’s a great pleasure to see you again! Thank you for arranging such splendid transport and for the rare honor of receiving your hospitality at your home.”

“Please, Pic, call me Makoto - or Mako, for short.” He speaks perfect English with the odd British inflections, picked up when reading Economics at Trinity. “I deeply revere our esteemed traditions, but there is no need for formalities between us.” Pointing to the cart, he says, “Please hop in. Let’s have a quick drink before I show you to your room. You will find your things waiting for you there.” Glancing at Pic, “Are you knackered?”

“Actually, I started on an audiobook about the Fall of Carthage and fell dead asleep inside of fifteen minutes!” Pic laughs.

“The Punic Wars will do that. But you must’ve been rather tired.”

“It was late when I boarded. I may have some jet lag tomorrow, but I am quite awake now.”

“Splendid. Splendid.” Yamashita says as he shifts the silent engine into gear and drives them to the house.

The air is heavy with fragrance. It is just past the Sakura season (the earliest in 1,210 years, it was recently announced), but the Japanese Wisteria, arching above the way, is in full bloom. The trail is lit discreetly by a series of sun-powered fixtures. The cart’s headlamps bring roving focus to the meticulously maintained grounds, successively revealing immaculate green moss covers, beds of purple and pink Creeping Phlox, and fields of baby blue Nemophila. They roll over a traditional wooden bridge arching over a pond partly covered by lotus and water-lily leaves. Surely teeming with plump koi.

Yamashita inquires, “How’s Baud? Regrettably, I haven’t had the chance to get to know him well, but he is an impressive fellow.” Not waiting for an answer, he continues, “I understand his father was a true hero during the Nazi occupation.”

“Indeed. Baud’s dad is reputed to have prevented close to two hundred Jews—men, women, and children—from being taken and gassed during the Holocaust,” Pic replies. “The Germans eventually found out, but he and his wife, helped by the local Resistance, were able to escape in extremis and seek refuge with the advancing Allies. The war over, they returned to the Netherlands

where their son was born. . . . Baud is working hard on PARI's international expansion, but he is in good health, and I shall gladly convey your kind regards.”

They arrive at the building and disembark. A massive, ornate oak door opens, and a young woman in a traditional kimono greets them, bowing deeply. She steps aside so they may enter the large foyer. They surrender their shoes. She retreats, bowing deeply again, and disappears through a discreet side passage with their footwear.

Antique *Yamato-e* hand-painted sliding doors provide access to the interior, each one guarded by a pair of mounted samurai *dō*, their lurid lacquered masks still evoking frissons.

*Suggested play:*

Chopin, Frédéric François: 3 Nocturnes, Op.9 -No.1 in Bb

— 5 —

**“A wee dram or more scruples?”**

Yamashita inquires with a smile. He lifts a bottle of single malt from a tray. Pic nods, “With great pleasure! Thank you. Neat, please. Perhaps a dash of water later.”

“But of course!” Yamashita laughs. “Glad you didn’t get polluted by the damn Yankees.”

The large room is both severe and supremely elegant. In the service of the austere *wabi-sabi* Japanese aesthetics, there is no clutter save for a magnificent, asymmetric *ikebana* carefully placed off-center on a low rosewood table. Behind it—a concession to the comfort of western guests—lies a long white leather couch and two matching armchairs. They face a coffee table covered in high-textured ostrich leather, also dyed white, on which the serving tray and a stack of coasters rest. The raised floor is of pale pinewood. Hidden spots highlight strategic areas. The rest of the room is bathed in indirect lighting from the ceiling. Pic admires a few beautiful Japanese watercolor scrolls hanging on the rice paper-covered walls.

Yamashita extends his hand, holding a heavy crystal tumbler towards Pic, with the Gaelic “*Slàinte mhath!*”

Pic accepts the drink, and lifting the glass, he returns the toast with a smile: “*Kanpai!*”

They both sit and take a sip.

After a pause, during which they both savor their Scotch, Yamashita asks, “What did Baud tell you of my project?”

“Not much. Only that you were studying the feasibility of building a space elevator. Still in stealth mode, he said.”

Yamashita nods, “Yes, because there is competition, and my family shouldn’t be brought in unless we know the thing is viable. Nothing otherwise classified.” He continues, “As you may know, we have made a significant effort in material R&D, particularly carbon nanotube fabrication.”

“You were able to increase production efficiency?”

“Yes. As it happens, we have developed an inexpensive method to grow and shape this material and build nanolattices. And their property coefficients, particularly tensile strength, are truly remarkable. To begin with, we can make them now over five meters long, beating current carbon nanotube assembly records by an order of magnitude.”

Pic, eyebrows raised, says, “Using vapor deposition techniques? That’s extraordinary!”

“In fact, yes and no. We use a hybrid method - but you’ll forgive me if I don’t go into details.”

“And these would allow you to provide the necessary strength for a space elevator?”

“We believe so,” says Yamashita. He chuckles, “Maybe there is an astral law that compels successful industrialists to get into the space game. But the fact is that such a machine would radically cut the cost of launching satellites, placing people, experiments, or building stations in space. Importantly, once completed, it would require minimal energy to run.”

Pic, interested, says, “How so?”

“Well, the elevator would have to be built to reach beyond geostationary orbit, a tad below 36,000 km altitude, held taut by a counterweight mass at its end—like a space station. Then the Earth’s gravity, rotation, and the system’s angular momentum would do most of the work. Kobayashi, my chief scientist, can provide more details if you wish.”

“Fascinating,” Pic says. He continues, “So what is the issue for which you may need our help?”

“It’s about the site of the anchor station here on Earth,” Yamashita points to the floor. “Where can we put it? What are the requirements, aside from having to be on the Equator? What spot should we select so that the probability of weather extremes is close to zero?”

“Ah, yes. That is tricky,” Pic says. He thinks for a moment and asks, “What about the dangers from satellites on crossing orbits and space debris collisions?”

Yamashita points his finger at Pic: “Good questions. But preliminary studies indicate that these should not be insurmountable problems. Ditto with coatings

to deal with free oxygen, radiation, and other such. Again, Kobayashi can brief you. But the weather issue is a deal-breaker. We need to be *certain* that we pick the right location,” he says, jabbing the table with his finger to emphasize the point. “And we don’t have the resources here to answer that question. So we need your help.”

Pic thinks for a bit. “Well, we did some detailed weather and climate modeling for some alphabet agencies, and we have most of what’s needed to tackle this. I’d have to learn a bit more about the specs and get back to you.”

“Lovely! That would be grand.” Yamashita glances at his wristwatch, “Heavens, it’s late. Let me show you to your quarters, and we can chat more tomorrow. Then Monday we can go to the shop and dive into the weeds.” Yamashita remembers something: “Ah, for our meals here. Any allergies or loathing we should know about?”

“Sadly, I’ve never learned to enjoy tea,” Pic admits. “And I shouldn’t eat onions. I hope this is not an imposition.”

“Not at all! We don’t want you indisposed. I’ll instruct the kitchen. And even though it is a lovely practice in our Zen Buddhist culture, we shan’t attempt to indoctrinate you in the pleasures of *chado*.”

As they stand up, Yamashita tells Pic, “You’ll find a traditional *ofuro* in your bathroom. I recommend a long, relaxing soak. You’ll sleep like a baby after that.”

### **Relaxing *ofuro*, ha!**

As Pic enters the guestroom, he is impressed by its size. It is large enough for several California king-sized beds with room to spare. Still, it contains only one large futon laid over a tatami and a desk and armchair. And several built-in closets where Pic finds his luggage has been unpacked and all his things set in their proper place. A door leads to a bathroom where, indeed, a traditional wooden tub is encased within a raised platform. Built for two, it is, by magic, already filled with water at just the right temperature.

Pic undresses gratefully. It has been a long day. He brushes his teeth, then gets into the tub, closes his eyes, and lets his mind and body unwind.

He is stirred from his torpor by a movement of the water. A thought bubbles up, *Uh oh! Yamashita's hospitality going overboard? The girl in a kimono is to welcome me more personally and scrub my back?* He opens his eyes. The water is sloshing against him and the sides of the tub. His mind playing tricks? The water now splashes around. Some escapes the *ofuro* and splatters on the floor.

Just as he thinks, *Earthquake?*, a hidden loudspeaker announces something in Japanese and then continues in English: "Attention: a moderate, shallow earthquake has been detected. Preliminary magnitude 5.4, epicenter sixty-four kilometers east-northeast, depth nineteen kilometers. Please remain as you are. No damage is anticipated." It then repeats the message in Japanese.

It is over before the speaker falls silent.

"Huh," Pic mutters, impressed.

He thinks for a while about plate tectonics, then he gets out of the tub. He dries himself with a soft towel larger than a sheet and dons the provided *yukata*. A series of electrical outlets compatible with major national formats is built-in at the foot of the wall. *Thoughtful architects*, Pic muses. He follows the instructions on a card to access the guest Wi-fi network and checks his email. Seeing nothing urgent, he plugs-in his watch and phone charger and lies down on the comfortable futon.

Randomly, he muses, *C'est un monde stochastique et chaotique mais pas absurde...*

He is asleep inside of three minutes.

*Suggested play:*

Brahms, Johannes: Variations on a Theme of Haydn in Bb (“St. Anthony Variations”), Op.56a  
- Theme: Andante

— 6 —

### **At 11AM, Brahms’s *Variations on a Theme by Haydn***

known as the *St. Anthony Variations*, begins playing, gently waking Pic from a deep sleep. He stirs and reorients himself. Right, he’s in Tokyo. He listens to the beautiful work, its anticipatory passing tones. One of his favorites. But...

He looks at the time on his phone and calculates it is 7PM on the West Coast, uh, yesterday.

He hears a woman’s voice on the other side of the door, apparently addressing him. He checks his modesty and calls, “Yes?”

The door slides open. The young woman is in the traditional *seiza* posture. She lowers her head until her brow touches the back of her hands. In heavily accented English, she says, “Good morning, sir. May I enter with breakfast?”

“Certainly,” Pic says. “Thank you.” He quickly, but neatly, folds the covers to air the futon.

“Since you have lunch soon, Yamashita-san said a light Continental breakfast for you. Will coffee be good?”

“Yes, lovely. Many thanks,” Pic says as he retreats to let her in.

The young woman picks up the tray from the floor and stands up gracefully. She comes in and slides the panel shut. With small gliding steps, she brings the platter to the desk. The items deployed to her satisfaction; she bows deeply. She retreats backward out of the room, silently sliding the door closed after a final bow.

After breakfast, Pic shaves, as he does every day no matter what—one of the very few routines he acquired from his stepfather. He dresses in casual khaki pants and a white linen, collarless long-sleeve shirt.

He about done checking his email when Yamashita calls from the hallway.

### **“Good morning, Pic. Are you presentable?”**

“Yes, Mako. Good morning. Come in. Come in!”

Yamashita enters and looking around, asks, “Everything to your satisfaction? Slept well?”

“As you promised: like a baby. Interesting welcome while in the tub, though.”

“Ah, yes. We tend to have these tremors fairly often. We don’t worry too much unless the magnitude stops the *shinkansen*, or there is a tsunami alert. As you can imagine, we *do* pay attention to those. This house, though, is built to sustain almost anything.”

Changing the subject, “Enjoyed the musical wake-up call? We talked about this work last time we met. I recall you dubbed it an ‘earworm,’ then cheerfully repented for using an indelicate expression.”

Pic, surprised, replies, “I had completely forgotten! Yes—” He looks away, “A superb performance of the orchestral version...”

Yamashita, sensing the minuscule sign of unease, raises his eyebrows, “Something wrong?”

“No, no.” But as Yamashita cocks his head, Pic continues, “Well, actually, I think someone inverted your speakers: the high strings come from the right and—”

Yamashita’s face turns a shade darker, but he recovers immediately and bursts out laughing, “Good Lord, what ears you have! I’ll ask my installer to switch the leads before he commits *seppuku!*”

Pic smiles, relieved that his unguarded signal didn’t offend.

“I trust you will bring that much frankness to our little enterprise,” Yamashita adds, a touch graver.



*Suggested play:*

Mashima, Toshio: Three Notes of Japan, for wind ensemble - The Snowy River

— 7 —

**Kobayashi is a friendly giant.**

He is waiting under a large gazebo covered by more hanging wisteria, where lunch is being served. He wears a casual seersucker pale grey suit. Tieless, blue shirt, collar open.

The garden, in the light of day, reveals itself to be a living work of art. Pic is awed. The subtlety with which it was designed is stunning: shades, colors, and forms surely carefully selected by a master in controlled abandon. Lavender stalks reach up to where the wisteria fall, their nuanced violets joined in delicate harmony.

Yamashita, observing Pic, says, “Lavender is challenging to raise on our soil as it requires drier conditions. But we wanted the mosquito-control these plants offer, so we built special drainage to allow for that.”

“Breathtaking!” Pic says.

As they approach the pergola, Yamashita says, “Pic, let me introduce you to Dr. Riku Kobayashi, our chief scientist.”

Kobayashi, with a big smile, extends his hand. “How do you do, Dr. de Lucretè. A real pleasure.”

“How do you do, Dr. Kobayashi,” Pic replies, smiling in return, looking up at the very tall man, “I am delighted to meet you. Please call me ‘Pic.’”

“And you must call me ‘Rick,’” says Kobayashi, rolling the ‘r’ with a wink.

Yamashita says, “Riku earned his PhD in applied physics at Caltech. He did his postdoc work there before we nabbed him. As an undergrad in materials science—when he wasn’t involved in their unending prank war with MIT—he was a member of their basketball team. Called the Beavers, I think. But he *swears* his contribution to their record-losing streak was minimal.” He continues jovially, “But he did get a unique education in the appreciation of inconveniently rare wines at their Athenaeum! Come, let’s sit and see what’s on offer.”

Lunch consists of soft-shell crabs, sashimi and sushi buffets, and various salads served on large square plates. Square-based decanters offer refreshments.

No onion or tea in sight. They are attended by a couple of young men in crisp white uniforms and white gloves.

After drinks have been poured, and as they begin to eat, Kobayashi turns to Pic, “I took the liberty of checking you out online. I was curious about your double PhD’s. You wrote your first dissertation on Italian Renaissance Literature, right? But then, what compelled you to go for a second doctorate, this time in Computer Science?”

Pic, trying gracefully to swallow some of the delicious crab, pauses an instant, and says, “It was a logical progression for me. My mother was French, with direct, albeit naughty, lineage to Charles VIII and Beatrice d’Este-Sforza of Milan. So I was taught about the significance of the Renaissance at an early age. She named me ‘Pic’ in homage to Giovanni Pico della Mirandola, a true Renaissance Man, reputed to know everything. Later, I became fascinated by the classics-inspired intellectual revolution that occurred then. From medieval to humanist conceptions of man, and the post-feudal systems of ethic and politic that followed.”

Pic pauses to take a sip. “While doing some research on Dante and Petrarch, I wanted to build an intelligent comparative concordance. That led me naturally to computer science, and I got hooked.”

Kobayashi nods, “Yes, I can see that. But you are the rare humanist who is also a servant to logic.”

Before Pic can protest, their host laughs, “And who now works for a research outfit whose classified output is never discussed in polite company—under pain of death.”

*That’s a tad blunt*, he thinks, but lets it pass. Few know this side of PARI, but Yamashita is one of the initiates: his own company benefited from such work.

Yamashita says to Kobayashi, “Last night, Pic and I had a brief chat about the help we need in climate modeling to select the elevator’s anchor location. Perhaps you can go into more detail?”

Kobayashi turns toward Pic, “Yes. We think this is critical to our decision. Unfortunately, this is beyond our capabilities here, and we hope you can assist.”

“We can certainly evaluate the feasibility of such an exercise.” Pic thinks for a moment. “This largely depends on the resolution we’d use. Whereas weather

rendering—limited to a relatively small area—can be quite detailed, global climate modeling is usually coarser.”

Yamashita says, “We have a meteorologist on staff, and he assisted our simulation developers. But we need sharp climatology as well.”

Turning to Kobayashi, Yamashita asks, “Hey, Riku! Do you think we should have Pic try one of our sims?”

Kobayashi replies, with a broad smile, “Certainly. Just do not feed him too much prior to going in! But before we leave the subject, we need to impress on Pic that we think *climate change* might be one of the most important factors in our decision.”

Pic frowns, “As California Governor Gavin Newsom said, ‘Mother Nature has now joined this conversation.’ Yes, I’d guess this could throw a wrench in the works. But we might need to get some external experts to join our team. Serious climate modeling is tricky and involves a lot of resources. Both wet-brain power-wise and in silicon.” He glances at Yamashita, “Could be expensive.”

Yamashita scoffs, “Less expensive than seeing a multi-billion-dollar project wrecked by events we didn’t expect or plan for!”

They think about that for a while. Then Yamashita asks that PARI send their cost and time projections upon Pic’s return stateside. He says that he’ll brief Baud himself on his time exigencies.

After they conclude their sushi dishes with *tamagoyaki* to cleanse their palate, they are served succulent *wagashi* for dessert. “Made with ingredients from this very garden,” announces Yamashita with pride.

### **Lunch over, they walk towards the house,**

admiring the flowers and garden design. They stop briefly on the bridge and look down at the pond, admiring the multicolored carps indeed populating the shadowed water, swimming lazily on random headings.

Kobayashi points to some lotus leaves. “See these? They and a few other plants (and some insects) have the remarkable property of self-cleaning, known as the ‘Lotus Effect.’ It’s due to their ultra-hydrophobicity. These leaves teach

us that specific micro-/nano-surface architectures can prevent water adhesion. We find this applicable to some of our work on new materials.”

They think about that for a minute.

Gesturing at the pond, Kobayashi then says, “If there were clams or oysters in this water, you’d also be amazed at what they can teach us. For instance, their mother-of-pearl is amazingly resilient, and we learned to adapt their nano-construction to develop fantastically strong transparent materials.”

They talk some more about the wisdom of learning and applying what nature has spent *billions* of years to evolve.

They continue on their way. Then Pic asks, “So what’s this about my going *into* a simulation?”