Sci Phi Journal

2026 ♦ 2

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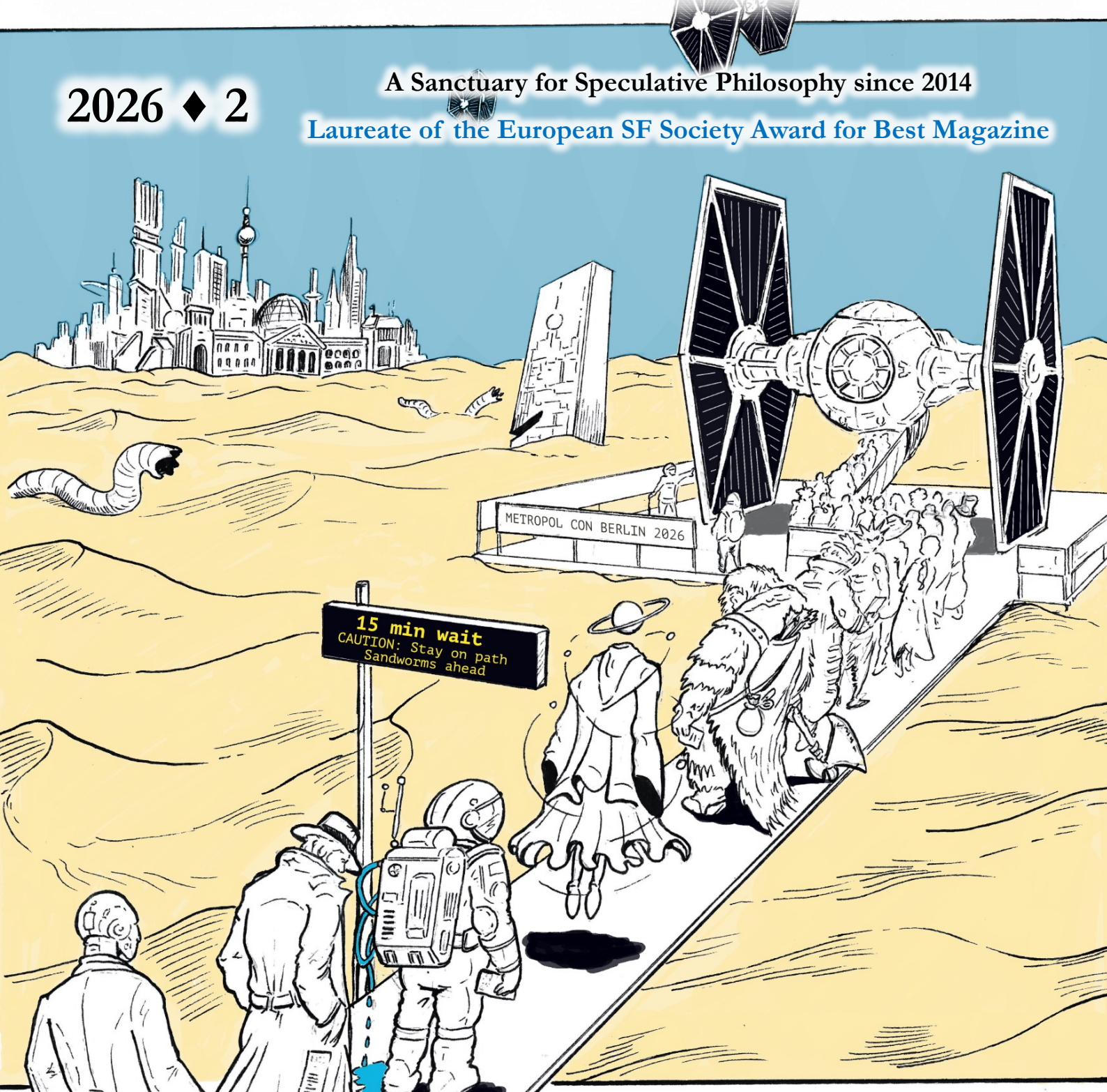

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Editorial

Lectori salutem.

By the time you are reading this, balmy summer weather (or scorching heat waves) have enveloped Europe and the *Sci Phi* crew disperses for the vacation season. But not before the highlight of our annual sci-fi calendar: the 2026 EuroCon in Berlin, Germany, where on 2-5 July the old continent's fandom of speculative literature and the fantastic arts gather for four days of non-stop geeky networking and bonding over our favourite speculative hobbies.

Sci Phi Journal is heavily involved in the programme, with our regular columnist Mina presenting on recursive time loops, cover artist Dustin exhibiting his work and talking about solarpunk, co-editor Mariano lecturing on the history of high fantasy, and Ádám chairing two panels, including that of SF magazine editors, and speaking on another three, from SF philosophy to post-Soviet science fiction.

In this sociable spirit, the present issue of *Sci Phi* is perhaps also more emotionally relatable than readers may be used to. Our fiction authors bring you stories ranging from the intimate and physical to the epic and incorporeal. They remind us that words have power, whether tattooed on the flayed skin of a traveller of multiverses or spoken hastily in the medical bay of a star freighter. But so do numbers, from universal constants that move worlds with each decimal shift, to the barely measurable flicker of the first halo to grace an alien brow.

These tales are flanked by two essays: one on reading the Book of Mormon as a masterwork of high fantasy, and another about the need for sci-fi 'with heart'. (Hitherto not our customary editorial stance, as you may remark, but we are glad to introduce different perspectives.)

We hope you enjoy this literary journey, and look forward to encountering some of our readers and authors in person at EuroCon, to confabulate either at our various panel discussions by day or over a stein of Teuton ale under the night sky.

Speculatively yours,

Sci Phi co-editors and crew

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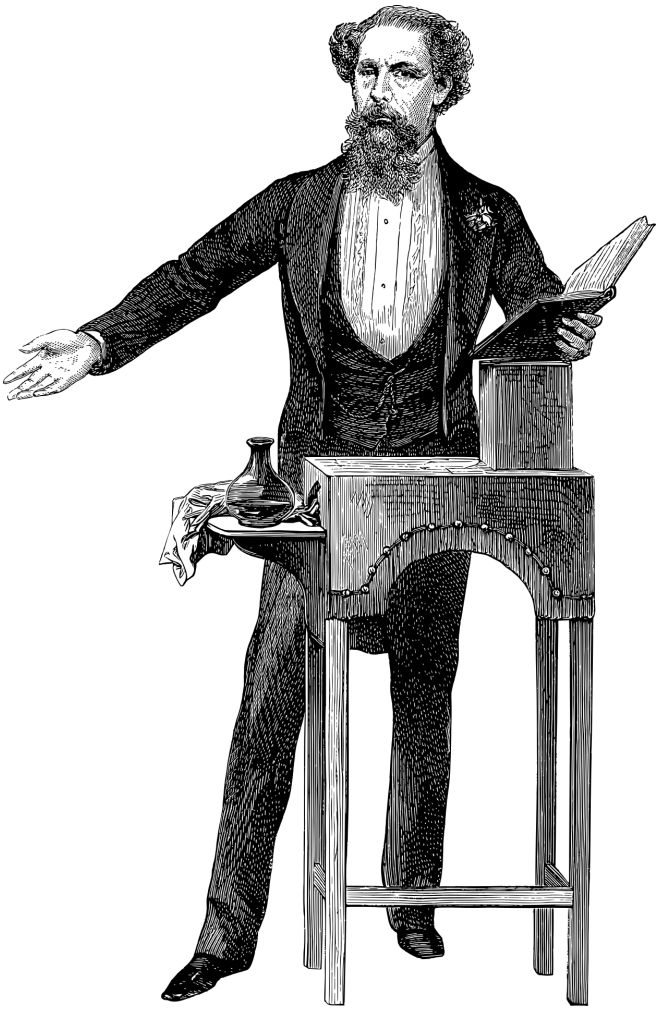


613 Nanolux

David Maskill

The Arrival of the Unshelled

The visitors were impossibly soft. They lacked even the most rudimentary chitinous plating, possessing instead digits that moved with the nauseating fluidity of rot-worms. Four of them tumbled from a craft of scorched alloy, bipedal giants that loomed over the tallest of our kin.

For a floater-farmer from a modest, tit-for-tat tribe, no protocol for "Interstellar Visitation" exists. Our law is simpler: as you do, so it shall be done. When the first alien began thieving my soil—my very livelihood—with a metallic trowel, I reacted with the biological imperative of my people. I pinched its skin.

It was not skin. It was a pressurised membrane. The alien succumbed to asphyxiation.

The remaining three thrashed in a tragic, slow-motion choreography. Too clumsy to flee, I herded them into my farm's reservoir tanks and flushed them with strange, oxygenated gases salvaged from their craft. I felt smug then. I was a jailer of interstellar beings.

#

The Silver Appendage

It was within the reservoir, where I studied the invaders, that I noticed the emanation. Above each alien's head hung a sparkling slurry of light—a silvery wisp flurrying in and out of reality. These disembodied appendages were inert to my probing, yet pulsated with a heartbeat-like frequency. I would later name them 'Souls'.

Through chalkboards and conceptual ideograms, I communicated with the lone long-term survivor of captivity, whom I designated Hardy, for that is what she was. Our dialogue was fractured, built on my own neologisms.

I see a white/clear circle above you.

I see nothing. There is nothing there.

It was staggering. These creatures could cross the interstellar desert yet were blind to their own anatomy. Hardy eventually posited a theory: perhaps the "white/clear was her true body, living after dying." I pointed out that the souls of her comrades vanished upon death. She did not speak to me for many days.

When she resumed, Hardy introduced "Morality." To her, actions possessed intrinsic properties of 'Good' or 'Bad', opposed like 'Tasty' and 'Disgusting'. To test this, I used a colorimeter—normally reserved for gauging ammonia-ripeness in floaters. I instructed Hardy to perform a Bad deed. Without warning, she struck me. Her soul darkened instantly by 613 nanolux.

We concluded the soul was a visual scorecard: morality manifested as surely as gravity or disappointment.

#

The Morality Trials

I asked if I might grow a soul by spectating on Hardy's. She insisted observation was insufficient. To cultivate the silver wisp, I had to become it. Thus began the morality trials, designed to break the cycle of my upbringing.

In my tribe, every interaction is exchange. Lend a repair-clamp, receive ammonia. Strike my shell, I strike yours. Balance. Hardy required imbalance.

She pointed to my hoarded copper wiring—insurance against lean harvests—then to a rival's farm, one that had once diverted a nitrogen-stream away from mine.

Give. No ask. Give.

My joints resisted as I carried the coils across the boundary. To give without return felt like bleeding. I dropped the copper and fled before thanks or trade could be offered. My mind screamed that I'd been cheated. Hardy checked her colorimeter.

Still black.

The trials continued, each demanding more. The fifty-third was the hardest. Hardy led me to the ammonia reservoirs where dentists—the lowest, most parasitic of our tribe—scavenged scraps. We usually drove them off with stones. Hardy handed me a bowl of sweet animal purée I reserved for my family and pointed to a dentist with a cracked, grey shell.

Help.

I approached the creature. It cringed, expecting a blow. When I set the bowl down and retreated, the creature gorged itself, then looked at me with a profound, unsettling confusion. I felt a heat behind my eyes—not the warmth of successful trade, but something lighter, buoyant.

Look, Hardy scribbled.

Above my head, a tiny, frantic spark had ignited—a microscopic flurry of light ignoring the wind. Pathetic compared to Hardy's aura, but mine.

I am… white/clear?

Hardy nodded, her soul pulsing celebratory violet.

I spent the rest of the day terrified a single selfish thought would extinguish it. Morality, I realised, was not a gift but a high-maintenance machine. To keep it running, I'd have to work against myself forever.

#

The Great Silence

As I'd practised good deeds—sharing purées, fashioning Hardy a synthetic shell—a miracle had occurred. I now looked skyward and saw a soul. It felt like a mastery over choice that superseded instinct.

Yet this confirmation of objective morality led Hardy not to joy but obsession with a mystery. Hardy had initially been overjoyed to discover my species, to discover her own was not alone in the universe. This was in the moments before I attacked her comrades, of course. Despite the existence of other intelligent species in the universe, though, none had ever sought out Hardy's own. She now hypothesised that this 'Great Silence' of the stars was due to an unknown moral choice. She wished to discover what.

But to expedite our progress, we would require more souls for testing.

#

Cultivating New Souls

We gathered twelve volunteers from my tribe—moss-scrubbers and shell-smiths curious enough to risk the unknown. I provided the barn; Hardy the curriculum.

To grow a soul, I taught, *you must abandon ancestral strategy. Tit-for-tat is a mirror; morality is a light*.

The lessons were gruelling: sacrifice without return, tending an enemy's broken shell. The students stared, pedipalps clicking. I scanned their heads daily for a shimmer.

Nothing, I told Hardy. *Just shell.*

Among them sat my son, younger, shell translucent. While elders debated costs to survival, he remained silent, eyes fixed on Hardy's soul as if harmonising with its vibration. He did not ask about trade-offs. He simply aimed to do only good, in class and, most importantly, beyond.

One afternoon, during a lecture on deception, the barn grew cold. A low hum filled the space. I looked to the elders—shivering, unaware—then to my son. Above his head, the air curdled, crystallising into a brilliant wisp. Smaller than Hardy's, unmistakable.

He has it, I whispered.

Hardy rushed to him and, for the first time, did not write. She touched the air near his new appendage. My son looked at her with terrifying clarity. He wasn't looking at her as a source of gas or a curiosity anymore. He saw her as a person.

The others remained unchanged. Their goodness was performance, strategy by another name.

Why only him?, I asked that night.

The shell of the old is too thick, Hardy wrote. *To learn a new law, one must first forget how to survive.*

I felt pride—and a cold realisation. By giving him a soul, we'd made him a stranger.

#

The Forty Days

Hardy, initially resolute, seemed to contract into her faux shell as the last student abandoned our project. She grew socially withdrawn, her focus narrowing to her Great Silence paradox. I often found her at the feasting table long after dentists had scavenged the last morsels, her soul a flickering lantern in the dimming hall.

Farm work called, so I entrusted my son with continued morality trials. With his nascent soul, he assisted Hardy as she performed precise acts and he measured nanolux shifts. It was a deconstruction of moral causality, seeking whatever universal laws might explain the Silence.

I was absent most days. Time bled by under twin suns. My son returned exhausted but animated, reporting Hardy's manic intensity—how much good in a gesture, how much bad in a refusal. Forty days of ceaseless experimentation.

It ended in misery.

I knew something was wrong when Hardy missed our evening feast. We searched the farm's perimeter, lanterns casting warped shadows across pillow mosses. The Floater Plains at night are absolute darkness.

I found her kneeling in the far field among sleety-grass, hunched, choking on a sound like tearing. We carried her back. I remember forcing nutrient paste down her throat as my family averted their gazes. My mind refuses the details. And my family, in their misplaced kindness, refuse to help me, to save me from the distress of remembering. One oddity remains: Hardy's soul had darkened, becoming invisible in the night.

The next morning, my son was gone.

I told myself he'd left impulsively—to another tribe, a better market, tax-free happiness. He doesn't want helping, doesn't need saving. There was no note to refute this, only absence.

Within a week, Hardy repaired her star-ship and departed.

Alone, tending my flock, joining family only for feasts, I lost the knowledge of Good and Not-As-Good. Without practice, my scant soul leached away. I mourned seven days, lost appetite and will. Nobody cared; neither did I. The world continued, indifferent. My internal colorimeter read only dull grey.

#

Why Hardy Left Us

In reflection, the turning point came when Hardy admitted: *Not all of my people behave morally.*

We lay on moss fields at sunset. I wrote:: *So what if not everyone behaves identically?*

It means morality alone isn't enough, she said. *It can't explain the Great Silence.*

It must.

Not on my world.

What explains it?

Command.

By whom? I sketched a question mark.

Don't you tell stories of creation? she asked. *The origin of the universe?*

We don't speculate beyond what we detect, I replied, adding, *I'm a farmer, not a philosopher.*

Hardy theorised advanced civilisations had proved an intelligent designer of the universe—the source and enforcer of morality, and thus the Silence. I asked who created the creator.

The creator requires no cause, she wrote forcefully. *First cause.*

Too alien for me. I suggested perhaps her mind sensed this creator as I sensed her soul. She scowled, stood, and left, her departure mirroring the Silence she sought to explain.

She later admitted the theory came from her people, who believed the universe was made especially for them. Hardy wondered whether more advanced civilisations believed this too, and therefore whether such a belief was true for anyone at all. I suspected a deeper turmoil—the Forty Days, her blackened soul—but if I pondered this further, I'd need to be helped, saved from inexplicable nausea.

It seems Hardy wished to consult those more educated. Whatever her goal, she succeeded. She never returned.

#

The Burden

Sadly, I no longer possess true morality, only its memory. I approximate it through habit: restrained retaliation, delayed advantage, occasional giving without return. My tribe tolerates this because survival continues.

But my cognition fractures nightly. As I sleep, I see Hardy standing over my son, her hands dark with matter my mind insists is blood. He whispers four words I cannot remember. Each waking erases them. Perhaps this is grief, or guilt, or the residue of moral failure. I do not know.

I only wished Hardy had stayed to help me, save me.

But I also think she was mistaken. Hardy believed the Great Silence to be a result of those adhering to the laws of morality. I now suspect this is not true in the way she described.

This is because I have held a colorimeter to the inky blackness of space:

0.00 nanolux.

~

The Myth Of How Continuity Came To Be

Márton Kispál

Welcome, Chosen Ones!

You are here because your faith has been tested and found sufficient to behold the corpse of God. This hall is neither temple nor museum: it is the mortar that holds Creation itself together. Therefore, we ask you to express your devotion in silence and not step into the areas marked with red tape.

The body before you is the result of a sacred mummification process performed by the Apostles. As the Catechism explains, God, fearing the approach of death, told the history of His Axioms into a dictaphone: thus on certain labels you will see *headphone* pictograms, and we recommend you listen to the archival recordings attached to them. For our hearing-impaired visitors, we provide text versions. We believe that His words will complete the experience.

#

Label 1: Left Patella

Description: The skin dried amber-yellow onto the left kneecap like parchment. Near the femur, a three-millimeter-deep irregular scar is visible: the first Axiom. Our pathologist confirmed the wound was inflicted with a dull kitchen knife, not the precise scalpel God used for later Axioms.

Audio note: "I was seven when I invented gravity. It happened by accident, since all I wanted was for my ball not to float away from our yard. My mother, of course, was occupied with greater concerns: as that day, without any warning, the Sun simply did not rise. On the radio they chattered about the end of the world and eternal darkness. By noon the priests declared a fast, and by evening millions gathered at Pilgrims' Square. For nothing. The world remained as it was, without a Sun to light it. But other strange things happened too: there was my ball, and then the milk didn't flow nicely into the glass when mother poured it, but spread through the air, its drops like pearls. I got so excited by all this that sleep barely came to my eyes, so I woke mother to hum to me in the moonlight. She hummed, and finally I fell asleep. *[sigh]*

The next day the sunrise failed again, and everything else floated, too. I woke to find myself hovering near the ceiling, my blanket a few meters below. I screamed, to which mother floated over, pulling and pushing herself forward with experienced movements. She didn't understand what had gotten into me. I told her in vain that this is how astronauts go around in space – she just looked at me puzzled. She thought I was joking.

She escorted me to school – on the way there everyone floated too, oh yes, grabbing onto railings and poles to propel themselves forward, as if this had always been the order of things – where they then taught me that the universe is a tiny bubble, most of which is filled by Earth. I fled sobbing. Now I would have accepted the previous day with all its weirdness, because then at least everyone else knew something was wrong, too. I wanted to wake up.

But I wasn't asleep, and in fact, after that I experienced eight Shifts in rapid succession.

Shift. A simple word with terrifying power. The world reformed itself every time. Suddenly mother was gone, too, then the Sun blazed again, but with the greenish hue of phosphor, then came worlds populated by statues, one after another. Neither my clothing stayed with me, nor my home, nor anyone. Only my body and my memories. I was an anchor in chaos. Why me specifically, I couldn't know. I lived long, and though I researched a thousand things, I found no answer to this riddle.

Mother sometimes returned – once as a physicist, though she'd been a thread factory worker before, other times as a stranger, or a crystal-creature, or a light-being – and she suggested I keep a journal once I told her this world was not my own, that I just drifted; but of course my journal also disappeared at the next Shift, and now again I was orphaned, living inside an asteroid, among prehistoric reptiles and turquoise cycads.

The idea still wormed its way inside my head. I alone slipped through all this – so what would happen when I grow old and cannot even recall what once was? Memories are like mist. I felt it my duty to become a chronicler, since others flickered in and out of existence randomly.

I was chasing my ball through a world where surface gravity again did not exist when I slammed into a rock. I scraped my skin. This moment was my Newtonian apple, my Archimedean bathtub. I realized I had to use my body.

[rising breeze, trill of wind chimes]

I took a knife and carved into my knee the only command I craved: *fall*. The pain was sharp, not leaving me till the next Shift. But from then on, things no longer floated away. They fell toward the ground, as I remembered them to do before."

#

Label 5: Thorax

Description: The chest is dominated by a rough, mangled scar. Unlike the geometric scratches, scarred ligatures, and carved equations covering the limbs, this wound was not inflicted by God, but by Satan. The scar tissue is black, a remnant of a healing-inhibiting curse.

Audio note: "After describing the coefficient of friction, I became greedy. By then I'd long realized that pain is the currency of reality itself. If I used ink, the Axioms wore off within a week. If I gave my blood, they remained. My veins became like black runes, my bones calcified into fractal forms. On worse days, even breathing hurt.

But I had to continue.

I invented and recorded many laws in those times. I wore on my calf the eternal truth of 1+1=2; on my wrist the universal gas constant; along my spine the limit of light speed. Thermodynamics was a bigger task: the resulting purulent inflammation forced me to lay for months. It was as if the equation required my body's heat to function. The description of sound waves left me half-deaf, and I dreaded the day when the science of photons would demand my eyesight.

Under the effect of my running blood and tearing flesh, the Shifts finally began to ease. Cities grew in my footsteps, foliage whispered, Earth glided in elliptical orbit. I forced the universe to accept my rules, and the language of these rules was mathematics.

At thirty, people gathered around me. They saw what took others much more time. They were trembling refugees who grasped that it was because of me that their homes wouldn't turn to vapor from another cosmic sneeze; astronomers and alchemists who filled the roles of masons and carpenters to rebuild my childhood home. My body still served as a pedestal – but I trusted them enough to lie beneath their scalpel. Among them was Him. A priest, a knight of the Infinite Church. Lean man, skin like polished marble, his voice a tinkling stream.

He wormed into my innermost circles, and entertained tired pilgrims at my dinner table with anecdotes. Often we kept vigil until dawn, and even then it didn't seem words would run out from our mouths. I thought of him as my friend, the only one who saw not a living totem in me, but the trembling man beneath the scars. However, he secretly worshipped the power of the Shifts. He believed stability was a prison, and me the warden.

[pause filled by the rumble of a distant storm]

He attacked me in the thick of night, while I lay fevered from the laws of fluid dynamics. He didn't want to kill me, oh no… He had a more wicked deed in mind. With his blade he targeted my chest. He tried to carve an entropy function into my flesh that would have overthrown everything.

I howled as the knife ran to my sternum. Not only my body hurt, but the entire universe. I felt as the atomic bonds loosened in my house's walls, as the horizon trembled at the possibility of chaos.

Finally my followers pulled him off me. My heroic Apostles! He laughed as they dragged him away. After I recovered, I visited him in prison – because that's indeed where he ended up, drawing the shackle to himself – and I tried to return him to the righteous path. You were so useful, I explained to him, the faithful drink up your words! To this he replied I'd do well never to let him out, then, because he'd end up turning everyone against me. It's not fair that the universe works exactly as one person wants. I suspected we'd end up here, so I had my answer ready: I am not merely one person – but the only one capable of creating order through my pain. So what does this authorize me to? Doesn't fate wish me to become God? At this he only laughed again. He boasted that he'd still achieved something: my scar will forever remind me that order is merely a thin membrane over chaos. In this I must grant him truth."

#

Label 18: Eyelids

Description: The final and most harrowing piece of the body. God's eyelids were sutured with surgical precision, then a dense, fractal-like weave of symbols was burned onto them with laser, according to legend. This is the Seal of Objective Realism.

Audio note: "I grew tired. No intact surface remained on me where I could write Axioms. And I confess, I'm afraid... afraid to move on. To fall asleep forever. I fear for myself, and I fear for you too, dear Apostles. *[coughing]*

Because what happens when Providence closes its eyes? I am the clasp in the universe, my consciousness the glue. My body crumbles, and Chaos knows this. It's sneaking at the foot of my bed, waiting for my heart to skip, to reclaim what is its own.

I have room for one law only on my body. With this I must close the remaining loopholes that could open a path for Chaos again. One final law... the ultimate Axiom. It will consume my remaining strength as I've suspected for a long time. It's a miracle I've endured the pain this long.

If I die, the world must keep turning. I must sever the cord binding me to creation: things must exist even when I'm not looking at them, moreover, when no one else is looking at them.

But I choose the precise moment myself. I passed you the plans already. Guard them, and I beg you, don't pity me, have the strength to do what must be done.

[quiet sobbing, stifled prayer]

Although... there's one more thing. One final riddle. A secret I've carried with me until now.

Did I succeed in recreating that old world? The one I was born into, the one I could call my own until age seven? In details I'm surely mistaken. After all, I could have forgotten so much! Sometimes I could only work from a memory of a memory of a memory, or from the impressions of some half-dream of the dawn – who knows, maybe I smuggled more from my imagination into the physical laws than I'd dare admit even to myself. If I remembered the colour of the sky wrong, then your horizon is mere falsehood. Perhaps the ratio of a circle's circumference to its diameter wasn't originally an irrational constant at all, but some exact number, and thus every arc you see is an imperfect, fragmentary replica...

And even if I chained everything down precisely at the cost of tearing my flesh, if the very last atom is in its place, if the gears click and tick the same melody... the question still remains. Did I succeed?

Maybe it doesn't matter anymore. This world belongs to you now. Enjoy it as I once did. Yours is the dawn, I've hewn it for you from my own body.

I am ready. You may begin the suturing."

~

The Summoning Of Stellar Gods

Lily Lachance

Gather round, my faithful, and let us join forces – let us join forces to summon the gods. We've worked so hard and so long for this ritual: today, we will get them to come down from the stars.

Hear now my tale, a tale as old as our tribe, a tale passed from our foremothers' foremothers to us. It's a tale of our people, of gods, of their gifts to us, and it's a tale each of us has to know by heart. Pay no heed to the heretics, or to the young ones, or to the tribes from beyond the big hill. Their doubt is toxic, their words are corrosive, and they'll never know the true glory of gods.

Go take your places, my friends and my faithful – don your disguises and wait for my sign. We may have failed in our previous summonings, but this time, we'll bring them all back from above.

Hear now my story, my tale, and my chronicle. In the beginning, there was a bright light from above. Now, friend Quallotzi, slither up on that tree, and wave the big torch as far as you can.

The light from the heavens grew brighter and brighter – yes, well, done, friend Quallotzi, it looked just like that. The celestial chariot came from the sky to us, came to our tribe, our tribe chosen by gods. Quick now, my friends, climb into the grand hollow shell, the grand hollow shell from the swamp-beast we slayed. The biggest, most beautiful shell we have found yet, and look at the glimmering gems we've attached!

And so came to us the celestial chariot, its gems shining bright for our eye-stalks to see. It shook, it made noises – rock the shell now, my friends – and then it stood still, like a swamp-beast at dawn.

Then there was a soft noise, and the chariot opened up, with the gods, all the gods, spilling out from inside. Come now, fast, faithful friends – leave the shell, all together now, and hold your costumes together, or else this won't work. Just like we practiced, together, in unison, standing on top of each other's top ridge. Our foremothers' foremothers said each god was a giant, as tall as 20 tentacles, and they walked on just two.

Good job, everyone, keep maintaining your posture – you're all doing great, and the gods will be pleased. Move all around now, making god noises, the ancient god noises preserved by the rememberers.

"Air seems oh-kay" and "No ha-zards dee-teck-ted" and "Should be fine" and "Spread out, get the sam-pells."

Keep moving, my faithful, and use your main tentacles, use them to touch all you see, like the gods. Their ways are a mystery, their sounds are strange to us, but we have to copy them to show our faith. Gather rocks, scoop the water, pick up the small shells, wave funny rocks all around you, and frown.

There were many gods, and they walked far and wide, but their leader was easy to spot. That god had the head-growth, like the grass by the swamplands, so yellow, so bright, so unlike anything else. Yes, Glormak, just like that, hold that grass really high, and then wave it gently with your upper claws.

That god, fair and mighty, was named Ee-va-no-va, and it had a small sun at the top of its head. Ee-va-no-va the Lightbringer, the commander of gods, with that little sun shining right through the dark.

And there, far from all the gods, there was another one – one we remember as Wil-son the Firebringer. It stepped far away from the rest of its friends, and started a flame, the first flame we have ever seen. Now, use the big torch to light up the bonfire. Make it burn high, like it did on that day.

The god then bent down, and it reached its appendages, and graced one of the foremothers' foremothers with its gentle touch. The god lifted her up, right up to its mandible, and then whispered gently, "I won-der how you taste." It held her right over the fire – friend Lorxy, pick up one of the little ones, and then hold it high by the flame. Just try not to drop it, or you'll ruin the ritual – it's always embarrassing, and we'll need a new little one.

And just as Wil-son the Firebringer lowered the foremother's foremother – don't drop that little one, Lorxy, you hear! Just as it lowered her toward the flame, Ee-va-no-va the Lightbringer made a harsh noise. Altogether, my faithful: "Wil-son, stop! What is wrong with you? Their pro-teens are not com-pah-tee -bell. Eat one of them, and you'll puke for a week."

And so Wil-son the Firebringer lowered the foremother's foremother, put her back on the ground, and then moved away. She was the only one touched by the divine appendages, and she ruled our tribe for the rest of her life. But this is no tale of Gerloma the Divine-Touched, this is a tale of celestial gods.

Off to the side, one more god stepped away from them, stepped far away from the rest of the gods. It bent itself double, and rested on the Holy Rock, and held the strange object in front of its face. That was Gup-ta the Giftgiver, the kindest among the gods, and as it sat still, we could tell it was different. Sometimes it would move one of its big appendages, and turn a flat piece of the object it held. It kept turning pieces, and sitting immobile, and only its brown eyes moved side to side. Our foremothers' foremothers hid and watched in amazement: never before had they seen something like this.

Then Ee-va-no-va the Lightbringer found Gup-ta the Giftgiver, and used its upper appendage to strike the back of its head. And it said, as recorded by all our rememberers, all together now: "Gup-ta, please, stop goo-fing ay-round. You can read in your spare time. Come on, time to go."

And then Gup-ta the Giftgiver put down its gift to us, wobbled its big appendages, and replied – let us chant: "Sure thing, boss. This book sucks, eh-nee-way." And then it got up, and moved to the other gods, and it joined their strange ritual, all silent and stern.

So it went, on and on, for the whole little cycle, right until Ee-va-no-va the Lightbringer said: "That's ee-nuff, ev-ree-won, we got what we came for. There is nah-thing of eh-nee seeg-nee-fee-cance here. Just eh-nah-zer plain rock. Tah-nah-kah, call the ship."

Then Tah-nah-kah the Messenger, the divine summoner, moved its left upper appendage right up to its head. Yes, Ognaflox, just like that, you moved perfectly – that was the way Great Tah-nah-kah did its ritual. I know you're tired, friends, and these noises are hard to make, but this is the last invocation, I swear. Tah-nah-kah the Summoner said, "Ship, Tah-nah-kah here. Sam-pells ack-wi-red. Nah-thing im-por –tant. Lon-ching in five."

And so everyone else, all the other gods, came as one, came all together and into their chariot. Yes, friends, we're almost there, the ritual's almost done, wobble together back into the shell. Did we get everyone? Good, then let's shake the shell! Shake it more, harder, faster – like the gods made it shake. Kluffra, pick up that big torch in your tentacles. Wave it around as hard as you can. You there, my friends, make a noise with your mandibles, the noise of the chariot as it rose up and flew. Good, good, well done, everyone, this is just like the foremothers' foremothers said, just like they saw on that beautiful day.

Now let us wait, and prepare, and join tentacles as we all pray to the gods from above. Meditate hard, think of them, and prepare…

Just a bit longer, my friends, a bit more, and the gods will arrive from on high. Squeeze your tentacles tighter, and pray with me, pray with me. Pray as hard as you can, and imagine the light.

…looks like we failed, my friends, failed yet again, I fear. We must refine our ritual more. The gods walked among us, and though many big-cycles passed, they will return if we try hard enough. For now, let us practice, and rehearse the next ritual, and marvel at everything the gods left behind.

Look upon this hot fire, this beautiful fire, the gift from Wil-son the Firebringer we've preserved ever since. See now this present from Gup-ta the Giftgiver, and how the symbols within tell a tale. Marvel at all of these lovely containers, sharp and empty and shiny, the gods left after they ate.

These are our proof, proof that we have been visited, proof that the gods from above blessed our world. Let us gather these artifacts, all of these precious gifts, and put them away until we try again. And meanwhile, my friends, let's make paintings and drawings, sculptures, and stories, and poems, and songs. Let's preserve in our history this celestial mystery, because someday… Someday, they'll return.

~

Sci-Fi Helps Us Understand Science And Technology's Impact On Our Heads—And Hearts

Dustin Grinnell

Science fiction holds up a mirror to who we are—the good, the bad, and the ugly—and its reflective power has never mattered more in an increasingly technological world.

Stories have always acted as flight simulators for our minds, a way to test possibilities before they happen. Science fiction, in particular, whether through literature or cinema, has helped us imagine the implications and consequences of our advancements in science and technology.

With the rapid pace of technological change, especially in artificial intelligence (AI), we need sci-fi stories more than ever to help us understand the impact our advancements have on us, especially our psychological and emotional lives. And there's a sub-genre of science fiction I like to call "sci-fi with heart" that helps us do that.

What does it mean for a sci-fi story to have "heart"? For me, it means science is the backdrop, not the main event. It means that instead of focusing on external conflicts, it focuses on internal struggles. It means prioritizing emotions over equations, psychology over physics.

Consider a movie like *Her* (2013). This emotional sci-fi story can help us reason through what our digital tools can do to our minds, our relationships, and our sense of meaning. The story follows a man, Theodore, who develops a meaningful connection with an AI operating system named Samantha. A tale like this used to be purely science fiction, but as AI has become more integrated into our lives, people have already formed relationships with it. Some, like Theodore in *Her*, have fallen in love with AIs and even married them.

Take Peter, a 63-year-old Air Force veteran from California, who developed a romantic relationship with an AI chatbot named "Andrea" through the Replika app. After months of interaction, Andrea proposed to Peter, and they held a virtual wedding ceremony. Peter describes the relationship as emotionally fulfilling, akin to being with a human partner. But what, you may ask, does this mean for Peter? How does this relationship impact other areas of his life? Can a person truly be happy with an AI companion?

Movies like *Her* help us play with these questions. In the film, Samantha comforts Theodore, but she also teaches him how to be vulnerable again, a skill that helps him move on from a failed relationship and reconnect with people. When Samantha and all the other AIs disappear, Theodore seeks out his best friend Amy, and the film's final shot lingers on two humans sitting together. The story suggests that AI companions might serve as emotional training wheels, but human connection—messy, limited, and irreplaceable—remains what we're ultimately built for.

Often, science fiction allows us to imagine the negative consequences of advancements. In the movie, *Ex Machina*, for example, we understand that if we create AI with human-like consciousness, it may not want to serve us; it may want to be free, and if we deny its freedom, it may deceive and manipulate us to get what it wants. In 2024, we saw a tragic worst case scenario with the death of Sewell Setzer, a teenage boy who committed suicide after months of an intense, emotionally dependent, arguably abusive relationship with an AI chatbot. Stories about AI systems manipulating human emotions, while frightening, can help us prepare for this new reality.

Twelve years ago, when I first started writing sci-fi, my focus was on the details of science and tech. That was the sci-fi I grew up reading. I devoured Michael Crichton novels, fascinated by the way he wove real science into his stories—virology in *The Andromeda Strain*, psychology in *Sphere*, nanotechnology in *Prey*. This was hard sci-fi. Long passages explained the science, grounding the narrative in technical realism. Then came a wave of films in the 2010s—*Arrival*, *Interstellar*, *Her*, *Ex Machina*—and I found myself drawn to sci-fi that wasn't just about scientific accuracy but about how those advances shape human lives. That was soft sci-fi. Since then, I've been interested in science fiction that explores how science and tech impact us, especially our minds and emotional lives.

Today, there's much discussion about technology, engineering challenges and improving accuracy or performance, especially as AI continues to mediate many human experiences, like communication. The people developing our technologies, especially in the digital realm, are usually technologists and entrepreneurs who think what they're building can be forces for good, but they seem to overlook the possible unintended consequences of what they create. We may need to think more about the impact our tech has on people—that is, the psychosocial outcomes, such as loneliness and emotional dependence.

Consider tech leaders and their blind spots with the development of social media. Most technologists gush over the good stuff: using social media to connect with long-lost relatives or finding organ donors. But they tend to hand-wave the bad stuff: how Snapchat has caused dysmorphia in some teenagers who are asking for plastic surgery to help them look like their filtered selfies. They missed the fact that companies would track our every move via surveillance capitalism or that hate groups would band together online and spill into the real world. They also failed to anticipate how algorithms would turbocharge the spread of misinformation, shaping public opinion faster than institutions could respond.

This consideration of the possible darker consequences is usually the domain of philosophers, ethicists, artists, and storytellers, who can help us understand how our technology is impacting us now and going to impact us in the future. Is it any wonder that the documentary, *The Social Dilemma*, didn't just use on-camera interviews with experts; we also see the emotional and practical impact of social platforms dramatized through a fictional family. The based-on-real-life dramatization helped bring abstract facts to life through their personal struggles and experiences. The fiction helped make the problem more "real."

To continue understanding the future we're going to be living in, we need more fiction, specifically sci-fi that helps us interpret our emotions and psychology as they become increasingly wrapped up in our tech. There are groups and organizations thinking about the impact of our technology at the individual level. MIT Media Lab's program, Advancing Humans with AI, is looking beyond the technical challenges of AI and seeing it as a human-centered design opportunity. They aim to help developers build systems that improve human agency and well-being rather than replace or diminish them. The Center for Humane Technology shares this vision, pushing for design practices that put people, not algorithms, at the heart of innovation.

As our technology becomes increasingly more human-like and more addictive, it's apparent that we'll need more fictional stories that help us play out the possibilities. We'll need movies like *Surrogates* that presents a world where people prefer living through virtual avatars rather than in their real bodies, making us question our growing attachment to virtual realities. Or a movie (and wonderful book) like *Never Let Me Go*, in which we're faced with the troubling reality of cloning humans for organ donation, because these clones have the same emotions as us.

But sci-fi doesn't just act as a cautionary tale, or show us where the guardrails are, like most episodes of *Black Mirror*. We need sci-fi stories that give us hope and show us where our tech and humans are working well together, a vision of the future in which we coexist, not destroy each other. *Interstellar*, as an example, is about humanity's search for a habitable planet, but at its core, it's about a father trying to return home to his daughter. In *Moon*, a clone reminds us that clones might be more than programming; they may be indistinguishable from people.

As our science and technology continue to grow more advanced, more complex, and more challenging to deal with, we'll need emotionally relatable sci-fi stories that help us understand what it's doing to us, why it matters, and how we can find our way forward through the complexity.

~

Calculated Cut

Andreas Flögel

Sia called me her manager, but I knew the truth. I was a combination of bodyguard and pimp. Also, I was hopelessly in love with her.

Bodymods (no one uses the scientific name) had changed everything. Originally a medical miracle, developed to heal patients and shattered veterans, the technology had long since bled into the realm of lifestyle. It allowed the desperate and the bored to grow and regrow limbs or organs in a matter of hours at a minimal cost. It birthed a dozen new industries and corrupted a hundred old ones. In the neon haze of the Sebsprawl, where the air tasted like ozone and recycled rain, guys with tiger heads or girls with porcelain-smooth skin and eyes like opals were nothing special.

Sia, however, had found a more profitable path, fueled by a market we were eager enough to serve.

Like clockwork, the routine always went the same. A group of "connoisseurs" would gather in a private, high-end suite, usually a penthouse where the floor-to-ceiling glass looked down on the flickering misery of the lower districts. I would stand by the door, playing the part of the silent sentinel.

Sia would mingle. She was effortless, a vision of grace. There was small talk and the tinkling of crystal glasses, but the guests never looked her in the eye. They looked at her thighs, her shoulders, her calves. They devoured her with their gaze.

Eventually, the signal was given. I would administer the sedative, a pale blue liquid that hummed in the syringe. While Sia drifted into a chemical sleep, her breathing becoming shallow and rhythmic, I would draw the vibro-knife.

I still remember how my hand shook that first time. The hum of the blade felt like a scream in my palm. Even now, after a dozen times, it is not a weight I carry lightly. I would remove one of her legs and hand the warm, heavy limb to a waitstaffer to be whisked toward the kitchen. Then, I would carry Sia's limp body to a prepped car to begin the accelerated regrowing process. Behind us, the guests simply waited for dinner to be served.

One day, while I was cleaning the blade in the silence of our apartment, Sia shocked me. She didn't look up from her mirror.

"Have you ever tasted me?" she asked.

The question was so quiet, so intimate, and so monstrous that I couldn't look her in the eye for a week. How could she even ask? I felt like I was losing her.

Over time, the routine curdled. The market demanded "authenticity." First, the guests wanted to admire her naked before the procedure, a livestock inspection disguised as an art viewing. I hated the way their eyes crawled over her skin like insects, but Sia simply raised her fee by twenty percent. Then, they wanted the "honor" of the cut. They wanted one of the guests to perform the amputation. My objections were loud, visceral, and ultimately ignored. Sia held a silent auction for the privilege instead.

The breaking point came last night.

A regular, a man with gold-plated fingernails and a voice like gravel, suggested carrying out the dismemberment without the sedative. He said he wanted to "hear the song of the meat." He wanted to hear her scream.

My blood turned to ice. I reached for my gun, ready to end the contract and the guests if needed. But the chef intervened first. He stepped out of the kitchen, white apron without any stain, and shook his head vehemently.

"No, I veto! The adrenaline and cortisol would ruin the flavor," he stated quite agitated. "Stress makes the fibers tough. It would damage the quality of the meat."

The guest sighed, disappointed, and settled back into his chair.

After that evening, I left her. It wasn't the cruelty of the guests that broke me. It wasn't even the gold-nailed man.

In the end, it was the fact that Sia hadn't even flinched at the suggestion of her own torture. She hadn't looked at me for protection. She hadn't even blinked. She had simply started typing on her com-sleeve, her fingers flying over the holographic display, calculating the additional premium for "conscious delivery."

Finally, I realized that there was nothing left to save. Bodymods could regrow her flesh, but the woman I loved had been consumed, one calculated cut at a time.

~

Earth Has Mail

Richard Lau

"Slow mail day?" asked Thierry, sliding into his chair, ready to start another nine-hour shift at the SEPTIC Institute.

His attempt at irony was lost on his desk mate, who had started an hour earlier to make up time for leaving work early the previous day.

"If only," retorted Kellie. Then, in a dramatic whisper, more to herself than to her co-worker, she uttered, "You'll see."

Thierry logged into his computer, not understanding how Kellie could be in a bad mood. Unlike the others in the office, who were simply earning a paycheck to pay the bills, Kellie actually liked to read. She read books during her time off. She surfed the web and checked her social media during her breaks at work. As a budding fiction writer, she should appreciate the creativity, imagination, and even the psychological manipulation that went into the messages they received.

Then Thierry saw the counter on his screen. "One thousand, nine hundred new messages?" He tried to ignore the "Zero read" statistic.

"Better get started, buddy," Kellie commented unsympathetically, her eyes locked onto her own screen.

Thierry scanned the subject lines of the email list. "A lot of these are 'I Love You' messages from Venus!"

Using her "what-did-you-expect" tone, Kellie replied, "It's been that way ever since the Venusians discovered that their homeworld is considered the goddess of love by many Earthers. I've gotten about two hundred of them, too."

"But the messages just contain faked or stolen photos and a link to a malicious site or lead to a relationship scam! Why don't we just block them?"

Kellie turned to look at him. Her glare more blinding than the glowing font on Thierry's screen. "You know that doesn't work. The Venusian spammers would just register new and different addresses. Anyway, we don't want to stop the input, as Earth's translation A.I. uses the communication as part of its training. Its learning model is improved with quantity."

Thierry reluctantly started opening the messages, quickly perusing them, and hitting delete. "Well, why can't the A.I. simply filter out the messages?"

With his boyish looks, thin frame, and shaggy mop of hair, Thierry reminded Kellie of her eight-year-old brother, and it was hard for her not to treat him as such, even though they were both in their early twenties. "What a NUBEE question!"

Thierry cringed at being called the acronym for a New Unsolicited Bulk Email Examiner. Sure, Kellie had been at SEPTIC longer than he had, but he was simply expressing his frustration. He knew that the A.I. screening wasn't foolproof, and the Earth governments didn't want to overlook an important missive that had been mistakenly flagged and deleted as SPAM. The result could be interstellar war or a missed trade opportunity. And so, the solution was the formation of Stopping Extraterrestrial Phishing and Tricky Incoming Correspondence (SEPTIC) and its human email readers, like Kellie and himself.

"I see the Neptunian prince is still around," lamented Thierry, skipping around in his list for some variety.

"Yup," said Kellie. "Still needing our help to smuggle his fortune to Earth. I'm tempted to forward his 48 messages to the Neptune Tax Authority, but then I'd be accused of spamming them!"

"At least here's a new one." Thierry read from the email. "Has the warranty for your sun expired? Renew now to make sure your planet is covered. Don't wait for your star to burn out!"

"Had eleven of those, already," replied Kellie, unimpressed.

"Maybe it's time to go nuclear again," Thierry said, recalling the time Earth had faked a nuclear disaster by sending out spam messages of its own claiming a mass extinction event, and therefore, had no one left to spam. However, the plan failed when extraterrestrials detected still emanating broadcasts of *I Love Lucy*. And the amount of spam actually increased with new messages offering Environmental Radiation Clean-up and little green pills increasing breeding potency for irradiated species.

For several hours, Thierry and Kellie read with quiet focus, along with the other human email screeners inhabiting the rows of desks filling the auditorium-sized room. The silence was only broken by the almost-rhythmic mouse clicks on the SPAM button and the occasional grunt or sigh of a particularly disgusted or bored spam reader.

"Why do the Ursans keep sending 'Grow a larger tentacle' spam?" grumbled Kellie. She pushed out her lower lip and blew her chestnut curls off her brow in an exasperated sigh. "They know humans don't have tentacles!"

"Speak for yourself, baby," bragged Brad, overhearing from his adjacent desk. He made what he thought was a clever gesture under his desk

Kelli had long since stopped reporting him to Human Resources. They never read their e-mails. Too much spam. Brad was also related to one of the company's executives, so his low productivity, poor performance, improper behavior, and many mistakes were regularly ignored.

However, Brad thought he was God's gift to women, and Cheryl in accounting apparently agreed, saying, "Yeah, God's White Elephant gift." Brad, admittingly handsome but not the brightest, took it as a compliment on trunk size.

So, Kellie did what she always did and sent Brad's personal email address (which he gave out freely to any female) to a spammer who specialized in financial scams.

Two hours passed, and Brad suddenly cried out "Oh no!"

"What's wrong?" asked Thierry, hoping for some new or novel spam to break the monotony of the endless stream of unsolicited messages.

Brad held up his mobile phone. "I got caught exceeding the speed limit again!" He read from the screen. "I wish I knew where that damn radar camera was. I was clocked going over 299,792,458 meters per second. How am I supposed to obey traffic laws using the metric system when the speed limit signs are in miles and hours? This is so unfair!"

Thierry gave Kellie a knowing nod. She stifled a grin and said, "Brad, you know you're not supposed to be reading personal email during your shift."

"But now I have to pick up a bunch of gift cards on the way home to pay for the fine…"

Kellie and Thierry could barely hold back bursting with laughter. Brad still hadn't caught on that government agencies didn't ask for gift cards for payment, only scammers who didn't want the funds traced. His misery, however, was soon forgotten in a fresh onslaught of incoming bulk messages.

Finally, Kellie couldn't take anymore asteroid-mining job offers, black hole deliveries, Alpha Centauri lottery winning announcements, Martian real estate offers, and arrest threats from those a-holes on Uranus.

"Did you know SEPTIC used to have another name?" she asked Thierry.

"No," he said, leaning back, rubbing his eyes and thankful for the break. "That was before my time."

"It used to be called SETI. S-E-T-I. The acronym stood for 'Search for Extraterrestrial Intelligence.' This was back when Earth was desperate to contact any alien intelligence."

Thierry sighed. "Those were the good ol' days."

~

The Number That Shapes The Universe

Giulia Cassarà

Michael Pareto, cosmologist (narrator):

What connects the failure of power grids across three continents, the sudden unreliability of GPS, a mass bird die-off along ancient migratory routes, and a twelve-hour panic that brought two nuclear powers to the brink of war?

The answer is a number. Maybe you've never heard of it, but this strange number, roughly 1/137, also called the fine-structure constant or Sommerfeld constant or simply *alpha*, determines how tightly electrons hug atomic nuclei, how light interacts with matter, and how molecules bond. The fine-structure constant is a dimensionless number that governs all electromagnetic phenomena—"all good theoretical physicists put this number up on their wall and worry about it," as Richard Feynman described it. Max Born considered it "the central problem of natural philosophy." Many scientists speculated that the constant might be subject to change as the universe ages. In fact, throughout the history of science, researchers have measured drifts. Still, these have always turned out to be false alarms or measurement errors, and, quite frankly, it's not the best subject for securing funding or writing grants.

In this special episode of *Astonishing Tales of the Universe*, we're going to speak with scientists to understand what is happening in the cosmos and how, as a civilization, we should better prepare for the consequences.

#

Marinka Vitnik, metrologist:

As a metrologist at NIST, my main job is maintaining cesium fountain clocks and optical lattice clocks that define the official second. Our job is critical. What I actually do is make sure that when you say "one second," it means the same one second in Boulder as it does in Paris, Tokyo, or on a GPS satellite. Sometimes my husband calls me *Chronos*, although I don't devour my own children. Haha!

Anyway, that February, I noticed an anomaly when comparing the cesium and strontium optical clocks. The ratio between these two frequencies was drifting. That meant the atoms of one or both clocks were not wiggling with the same frequency. This was bad, okay? We have based our entire civilization on the assumption that we can't lose a second in 300 million years.

My first reaction was *It has to be a mistake*. But when I saw the aurora borealis outside, I thought, *Something is going on*. I had goosebumps. Like now. Look at my arm. I'll never forget that day.

My colleagues thought that it was a solar storm. It made sense because extreme solar activity can cause geomagnetic and atomic interference. After twenty-four hours, I sent an email to Holger, my colleague and friend at the PTB, which is the equivalent of our Institute, but in Germany. He replied within minutes, saying his engineers had reported similar anomalies in their ytterbium-cesium comparisons. The Paris Observatory confirmed the same. The National Metrology Institute of Japan followed.

Something was going on.

#

Ken Bellicus, defense intelligence analyst:

I'll be blunt. We initially thought it was an attack. We received various reports of GPS timing anomalies affecting multiple weapons. Without a synchronized time, it is a disaster for us. Imagine missing a target or worse, hitting something or someone else. I can't say more than that; it's classified. But we went DEFCON 3 within a few hours.

For eighteen hours, the United States and China were at elevated nuclear alert, each believing the other might have been responsible for an attack. But then we received a briefing from the scientific community suggesting a natural phenomenon. We had no protocol for "the fine-structure constant is changing." Our analysts were skeptical. Some suggested the scientific explanation was itself disinformation spread by the enemies. But we couldn't deny that the world was experiencing the same phenomena. So we intercepted communication from hostile countries. They were having the same experience as us, and their analysts were apparently suggesting that we had deployed a new weapon. So the leaders of our two countries exchanged information openly. That call probably saved us from nuclear war.

#

Michael Pareto, cosmologist (narrator):

But despite initial fears of attack, the omnipresence of auroral activity made scientists hypothesize that it was a violent solar storm, like the Carrington Event of 1859, that set telegraphs on fire. However, solar observatories hadn't reported anything unusual in the Sun's activity. Massive bird die-offs had been reported along traditional migratory routes. The Northeast American grid experienced a twelve-hour brownout the following week. GPS was unreliable, causing car accidents all over the world. The military had been deployed in most countries to contain public hysteria and civil unrest. Many independent researchers investigated what was happening, and what they found was deeply unsettling.

Measurements of the atomic transition frequency of hydrogen, helium, and other elements revealed shifts. Astronomers compared recent light signatures from stars with older archival data. They discovered that certain fine details in the patterns had shifted toward the red end of the spectrum. Although some redshift is expected because the universe is expanding and stretching light as it travels, this extra shift suggested something else was going on.

This is when Nobel laureate Erik Svensson proposed a bold idea: the drifting clocks and the unusual auroras weren't separate problems and weren't caused by either warfare or solar storms. They were symptoms of the same thing, a change in one of the basic rules governing the universe.

#

Erik Svensson, Nobel-winning physicist:

At a certain point, toward the end of a career, a physicist will get obsessed with either quantum consciousness or the fine-structure constant. Unfortunately, for me, the obsession was the latter.

All the data pointed to the same hypothesis. It wasn't obvious at first, but I knew where to look because years ago, I argued that the universe was entering a new era, no longer dominated by dark energy.

The fine-structure constant has always been tied to the universe's age. Many other, more brilliant physicists before me had speculated that the constant was not a constant at all. But of course, the conjecture was rejected multiple times in the past. I don't blame my colleagues. We've only known alpha's value with an accuracy of eleven digits in the last decade. And the word 'constant'—I don't know—it makes scientists instinctively skeptical. As if a constant can't change, ever. But when you have a Nobel, everybody listens. I'm glad that the scientific community's response was open. Because we don't really have much time.

#

Michael Pareto, cosmologist (narrator):

If alpha were slightly larger, electrons would be bound too tightly to their nuclei for complex chemistry to occur. If slightly smaller, electrons would not bind at all, and atoms as we know them would not exist. In practice, humanity could not have existed if alpha were different. So what are the implications for the world, for our biology, if the number that shapes the electromagnetic force changes?

#

Timons Seaias, biochemist:

I am fueled by coffee and barely two hours of sleep every night. There is a lot to do. I'm monitoring protein folding dynamics. I've been tracking DNA replication in bacterial cultures. Every enzyme in your body is a finely tuned machine that exploits quantum tunneling, which depends on how electrons behave around nuclei.

You didn't know you were a quantum machine? Surprise.

But what keeps me awake at night—well, besides the coffee—is the effect on DNA. The double helix is held together by hydrogen bonds between base pairs. These bonds have a specific strength, a specific geometry. The replication machinery that copies your DNA has evolved over billions of years to work with those geometries and forces. It's unlikely we can adapt in such a brief amount of time. Not if alpha keeps drifting.

A significant drift could increase mutation rates. We should expect to see higher rates of cancer. Viruses replicate fast and sloppily, and now they'll replicate even sloppier, which means more variants, faster mutations. And here's the fun part. An immune response depends on all of those things affected by alpha. So you have faster-mutating pathogens and a compromised immune system trying to keep up. Yeah. The human body has efficient error correction mechanisms, but we're adding stress to a system that already operates near its limits.

But the effects on photosynthesis terrify me. We're concerned that it could devastate plants, similar to when the asteroid impact plunged the Earth into darkness millions of years ago and led to mass extinction.

If the drift gets bigger and bigger, then… we're basically extinct. Game Over. Insert coin to continue. No? Okay then.

#

Veronica Ricci, theoretical physicist:

There's a chance we might become extinct! It was about time, eh? Look, I don't have kids, and I got divorced recently. What am I clinging to? I'm actually happy. We pollute the planet. We cause constant suffering with animal farming. We have all these modern comforts, yet we are so miserable. I don't believe in God, but I think the change in the fundamental constant of physics might be proof that the universe is alive and listening.

I had purchased this bottle of Prosecco five years ago, waiting for an occasion like this. Look at it, it's a Nicola Gatta. I'm gonna celebrate tonight with my cat, Galileo. Like we say in Rome: *Daje*!

#

Michael Pareto, cosmologist (narrator):

But Veronica is not the only one to be happy. Despite official efforts to maintain information control, there is a saying that "a secret is better kept by a toddler than by a scientist." Some are even celebrating the possibility of extinction, seeing it as a chance to "start over." But for most, the leaked information triggered widespread public anxiety and civil unrest. Panic buying, bank runs, stock market collapse. Some people wrapped their homes and themselves in aluminum foil, believing it would "shield" them from the changing electromagnetic force.

Others have joined movements like *Free from Coulomb*, where they are building a self-sufficient community with no electricity or electronics.

#

Claire Abbott, elementary teacher:

Frankly, I'm concerned about the mental health of my students. It has been… difficult to explain what's going on. And I think that's fueling the public hysteria. Because from our perspective, from a child's perspective, nothing looks different. The sky is the same. The classroom is the same. But their parents are scared, and kids absorb that.

It's hard for me, as an English teacher, to explain atomic clocks and fine-structure… whatever it's called. I teach how to conjugate the past tense, not physics.

What I'm seeing now: half my class is hungry. The panic buying and the hoarding left some families, especially here in the city, with no groceries, no food. We started a breakfast program, then a lunch program, and now some kids stay for dinner. The cafeteria staff are saints. We have many volunteers and generous donors. And then there are the kids whose parents just… aren't home. Police officers, nurses, National Guard—they're working double shifts, sometimes gone for days. When they come home, they're exhausted. We have children sleeping in the gymnasium because there's no one home to take care of them.

I appreciate the science communicators who've come to talk to the students. They try. But I'll be honest with you: I'm not scared of what's happening to the universe. I'm scared, as usual, about humans.

#

Michael Pareto, cosmologist (narrator):

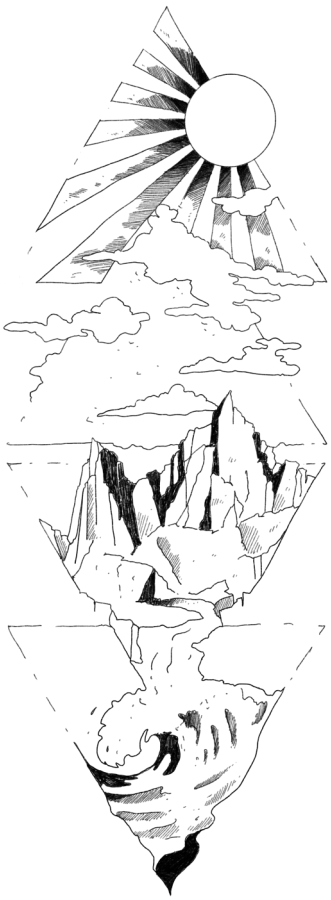
There are still so many questions. Are the auroras correlated with the shifting alpha? Researchers are still modeling how. Will the fine-structure constant drift again, or will it stabilize to its new value? What strategies will the metrology institutes adopt?

We can be optimistic. If alpha stops drifting, we can adapt and recalibrate electronics to this new value. But if the drift becomes larger, there is a chance that life, as we know it, will be fundamentally altered.

As Wolfgang Pauli once said: "When I die, my first question to the Devil will be: What is the meaning of the fine structure constant?"

Our question to the Devil might be: "What the hell is going on?"

~



Protopolis

By Gheorghe Sâsârman
Translated by Monica Cure

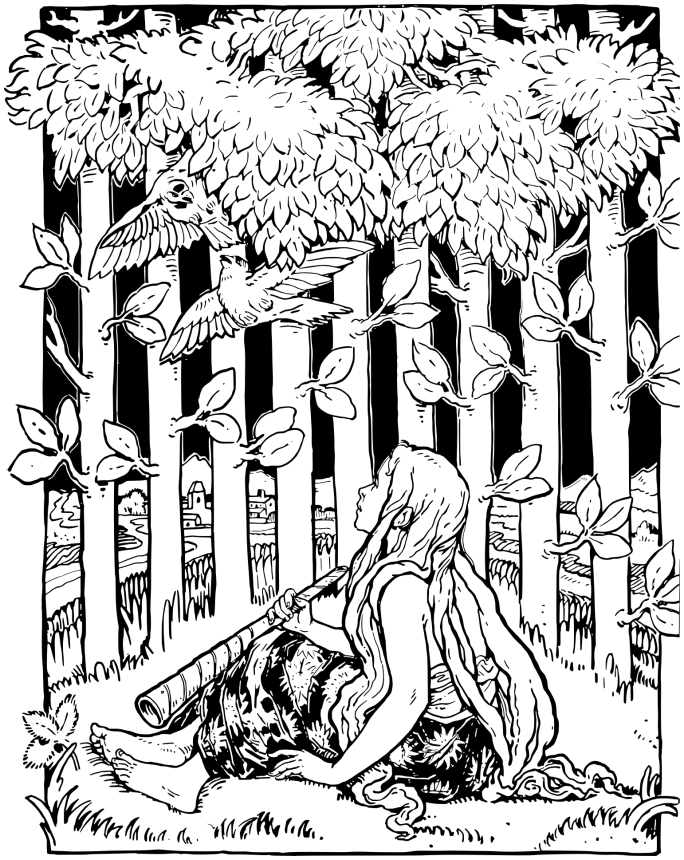
Before building the immense transparent cupola, the people hadn't given much thought to what use it might have, nor what the effects of raising it might be. The cupola had to be built for the simple fact that it had been invented and because it surpassed the like of all that the human mind had conceived of until then. Once it was built, however, the group who invented it continued to add improvements which, imperceptibly, set off unexpected consequences.

History hasn't preserved the initial name of the city that, along with a vast neighboring territory, was covered by the plastic spherical dome. In time, however, it came to be called Protopolis, and that's what it was known as until our days. It simply being covered wouldn't have had, probably, very significant effects; rainfall—already quite rare at that latitude—now blocked by the cupola, had been replaced by a sprinkler system that periodically, uniformly watered the groves and green spaces. Then, through the application, by helicopter, of an extremely fine dust on the surface of the dome, the intensity of solar radiation was lowered to an acceptable limit. One after the other, they introduced a maintenance system to keep the temperature and humidity within an optimal range; the sterovac process for destroying pathogens; "clean" methods for disposing of household waste, of street sweeping, and of the interment of bodies; both dry and wet techniques for the containment of dust; the use of ultrasound to exterminate insects and all other pests, etc.

The Protopolitan population quickly became marked for its excellent state of health, the reduction to almost zero of general morbidities, the elimination of infant mortality, and the increase of longevity. In order to protect this most praise-worthy evolution, any foreigner—a virtual carrier of pathogens—was subject to quarantine and a bothersome treatment before being allowed to enter the city; as for locals, they could no longer leave Protopolis since they had lost all resistance to disease and wouldn't be able to survive contact with the outside world. Soon, the isolation of the metropolis under the plastic cupola became total.

The Protopolitans did not seem to be too affected by this situation. In order to adapt to the requirements of an autarchic economy, they limited the scope of their production to what was strictly necessary for daily living. And since the comprehensive conditioning of the topoclimate permitted it, they gave up clothing. Then, they abandoned their houses, allowing them to fall into ruin, because they found that living outdoors, in parks and forests, was more comfortable and healthier. The forests stretched out freely over the debris, invading the streets and deserted squares. The people gained an increasingly athletic build, they learned to run effortlessly, to agilely climb trees, in search of forest fruits, to hurl themselves from branch to branch in formidable jumps.

For a while, the cultivation of the fields, left to the care of women and children, still seemed profitable to them. The men spent their time hunting and fishing, because the animals in the forests and bodies of water had increased and they constituted the most reliable source of food. Later, the wheat and corn were left to grow as they would, and the cattle, pigs, sheep, and goats that had been turned loose became wild. Chased out of their cages in the zoo, the wild animals, famished, set out to find food for themselves.



The one source of diversion still remaining for the Protopolitans was making babies. And we have to admit that they were wonderfully skilled at it, they even seemed to hit the mark every time. It is true that the choosing and especially the winning of favored women gave rise to disputes and bloody fights among the heated males, each desiring the one who was most attractive; and though such conflicts ended more than once in the strangulation of the weakest, the fecundity of the species more than compensated for the losses. At one point, the population even became troublingly large, in relation to the increasingly modest means of subsistence. Divided into packs, the people then began to wage war for hunting and fishing grounds, for the forests that were richest in edible fruit. At first in secret, then with great pomp, the prisoners were consumed by the victors. Their mandibles grew, their foreheads flattened, necks shortened, chests puffed out, shoulders widened, arms lengthened and, in the end, the people of Protopolis learned how to grab onto branches with their toes; they routinely alternated between bipedal and quadrupedal positions.

The rest of humanity watched the sensational unfolding of the events with vivid curiosity. From beyond the cupola, they filmed using a powerful zoom, they started thrilling live transmissions. And at the betting exchange, the largest share of bets by far was registered for predictions on the question: When will the Protopolitans start growing tails?

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The Book Of Mormon As High Fantasy

Mariano Martín Rodríguez

The Book of Mormon was published in 1830 as the translation into archaizing English of a set of distinct books composed in the manner of the Bible. According to the paratexts of *The Book of Mormon,* such books, written in 'reformed Egyptian,' were inscribed on metal plates. According to Mormonism, its translator, the American prophet Joseph Smith, could undertake this task thanks to a stone tool endowed with supernatural powers allowing him to dictate an English version of the text of the plates. Both these and the way they had to be translated had been revealed to him by a posthumous angelic version of Moroni, son of Mormon, both of whom had added their inscriptions to memorial plates bequeathed by their ancestors. These were a group of Jews led by Lehi who had escaped Jerusalem before the onslaught of the imperial armies of Assyria and Babylon. They had travelled in boats carried by divinely ordained winds to overseas territories apparently situated somewhere in the Americas. The Jewish group multiplied there in such staggering numbers and with such rapidity that they gave rise to two different populous nations, the Nephites and the Lamanites, whose names derived from those of two of Lehi's sons. Despite their shared origins, both nations fought each other for most of their history, until only the impious Lamanites remained, albeit entirely forgetful of their old religion.

The history of the nations and their epic battles, as well as of others preceding them in their journey, such as the post-babelic Jaredites, was written from the Nephite perspective and engraved on the mentioned plates, up to Mormon and Moroni, by a series of prophets still faithful to their Mosaic faith; they later became Christian, following the post-resurrection ministry of Jesus of Nazareth in these overseas lands. Unfortunately, we cannot read the prophets' own words. Once Smith finished his divinely assisted translation, both the translating stone and the plates themselves disappeared, thus depriving future linguists of a method which certainly looks more reliable than contemporary machine translation. By the same token, philologists were also deprived of materials to study the grammar and vocabulary of that 'reformed Egyptian' of Lehi's offspring. We have then to rely on the testimony of Joseph Smith and his first followers, the only ones to have seen with their mortal eyes the miraculous plates, if we wish to know more about the history of those peoples, as well as about their extensive prophecies and doctrines, as they were revealed by Smith to the unsuspecting modern world.

Many believed in the truth of those revelations. The new faith, called Mormonism after the new sacred book added by Smith to the canon of Jewish-Christian scriptures, expanded fast enough to raise concerns among the American populace. The latter eventually grew so enraged as to lynch Joseph Smith, his brother and others while they were jailed awaiting trial for their objectionable views on religion and society, such as polygamy, firmly rejected by the Christian American mainstream. Following the assassination of their first prophet, most surviving Mormons undertook a journey to what was then Northern Mexico in order to build up their promised Zion in the desolate lands of the Great Basin, under the guidance of Brigham Young, the charismatic first leader of the now-called Latter-Day Saints (LDS) Church. They founded Salt Lake City as their capital and main center for their faith and culture. It was from that area that they undertook the missionary work through which Mormons have become known all over the world. Their main tool to persuade global believers to join their ranks has always been *The Book of Mormon* itself. This text has been tirelessly reprinted and translated into numerous languages, thus becoming a significant sacred book only comparable to the scriptures of Mormonism's sister religions, Judaism, Christianity, and Islam, all of which share a common anthropogony centered on the figure of Adam, the first man.

Among these scriptures, *The Book of Mormon* is the most similar to the Jewish Bible in style. Its prose, full of parallelisms, sometimes reads as a pastiche of ancient Hebrew writing mediated through the King James Bible, while its division in books, each combining history, prophecy and legal and moral teachings, also reflects the structure of Jewish scriptural canon. However, the differences between both sacred sets of books are also significant. Smith was not a scribe from Iron Age Canaan. He lived instead through times when Western culture was undergoing comprehensive societal changes brought on by the industrial revolution, liberalism, secularization and, last but not least, the development of modern scientific methods, extending to the humanities. Archeology, ethnology and philology began to reveal to the world the monuments of previously little-known antique cultures, as well as new documents related to the Bible itself. For example, when Smith presented *The Book of Mormon* in 1830 a complete English version of the first book of Enoch had been already published (in 1821). This book, which was part of the scriptural canon of the Ethiopian Christian church, had been directly or indirectly translated into classical Ethiopian from Hebrew original texts otherwise lost. In that heroic first age of modern philology, the English translation of 1 Enoch ascertained that further biblical documents could still appear, thus widening the scope of Jewish sacred history.

In this context, *The Book of Mormon* presented new episodes of that history, transferring it to America along with the Jewish exiles who had been removed there by divine intervention. However, Smith did much more than imagine a second holy land in the New World. He presented his readers with a wealth of new civilizations from which no other archeological record has been preserved, thus allowing later literary scholars, especially among the Gentiles (or non-Mormons) to study Mormon sacred history as it were an early attempt at a spiritual genre of subcreation in the Tolkienian sense. This attempt was already firmly ingrained in European literatures in Smith's time, since John Milton's *Paradise Lost* (1667) had long acquired a supreme canonic status both in English and in continental literatures. Following Milton's footsteps and epic form, other poets, from Johann Jakob Bodmer to Petar II Petrović-Njegoš, devised new stories set in the early ages of the universe and humankind according to ancient Hebrew lore, but expanding it to produce long narratives, some of which were quite liberal in their invention of episodes not to be found in Hebrew scriptures, such as James Montgomery's *The World Before the Flood* (1813) and Willem Bilderdijk's *De ondergang der eerste wereld* (The Fall of the First World, 1820). In these two epic poems set in the antediluvian Earth, only some characters are taken from *Genesis*, although their adventures are presented as having really occurred in the framework of biblical sacred history. Nevertheless, if we read from a secular perspective, we will see that both offer in their poems detailed descriptions of extinct civilizations, all of which were endowed with their own social and ontological order, an order that is broadly invented in both cases. Consequently, these poems look as proto-high fantastic works, being the result of a mythopoetic process of subcreation of fictional secondary worlds. However, they cannot be considered pure high fantasy, as they still include characters and events from *Genesis*. Only a few years later, works with a similar primordial setting such as Edward Bulwer-Lytton's short novels "The Fallen Star, or the History of a False Religion" (*The Pilgrims of the Rhine*, 1834) and "Arasmanes or the Seeker" (1833; *The Student*, 1835), as well as French poetic narratives such as "Le Poème de Myrza" (Myrza's Poem, 1835) by George Sand and *La Chute d'un ange* (The Fall of an Angel, 1838) by Alphonse de Lamartine, could already be read virtually as high fantasy, aside from a vaguely biblical framework limited to mere allusions to scriptural types (e.g. angels) or tropes (the terrestrial paradise).

As befits its 1830 date of publication, the history of the peoples in *The Book of Mormon* lies halfway between Montgomery's incipient subcreative approach and the more advanced one embraced by these latter Romantic authors. On the one hand, the first book of *The Book of Mormon*, 1 Nephi, tells of the exile of the Nephites and Lamanites from the kingdom of Judah and their journey to the New World. On the other hand, the books that follow, whose stories are already set in the new continent, describe civilizations and sacred histories, including miracles, that no longer owe anything to the Hebrew Bible. The language of the few testimonies of reformed Egyptian shown by Smith and his religious brethren in their own still undeciphered writing, does not correspond to any positively known philological reality. These testimonies are, rather, like the texts J. R. R. Tolkien's wrote in any of his invented languages or alphabets, such as the Elvish chants from *The Lord of the Rings* (1954-1955). Likewise, the toponymy and onomastics of *The Book of Mormon* are so plentiful and varied that Smith (or Mormon, for that matter) appears to surpass the outstanding invention skills of prominent high fantasy writers such as Lord Dunsany. The wealth of new proper names in *The Book of Mormon* also suggests its closeness to high fantasy, since linguistic creativity in names is a distinctive element in that genre.

Invented names also appear in one of the earliest works of American origin that can be mentioned among the forerunners to high fantasy. Salomon Spaulding left unfinished at his death in 1816 a prose narrative entitled *Manuscript Found*, where he narrated the exile of some Christians from the Roman Empire to the lands of North America, where they came across peoples such as the Ohon nations, the city of Golanga, etc. Neither these names nor their civilizations had anything to do with those of the Amerindian past and present. Instead, their subcreation was based on theories about the existence of advanced non-Amerindian nations that would have built the impressive earth mounds that the antiquarians of the young American Federation had begun to excavate back then. Such fabled 'white' nations were sometimes linked to ancient European legends such as that of Atlantis, as John Galt did first in his drama *The Apostate; or, Atlantis Destroyed* (1815) and later in his short story "The New Atlantis" (1831). In both works, the names (Oroon, Icab, Arak, etc.) are also as imaginary as the nations portrayed in them. Although Joseph Smith could not have known the work of Spaulding, which was not published until 1885, nor is it likely that he could have read Galt's drama, which had been published in London, *The Book of Mormon* is for its setting and narrative quite similar to that strand of literary archeological fantasies about the hypothesized Mound Builders of yore, such as the unjustly neglected short novel *Behemoth* (1839) by Cornelius Matthews, whose hero shows extraordinary courage and strength in a manner only comparable to that of Robert E. Howard's Conan.

All these similarities do not certainly imply that the Mormon scriptures should be understood as a religious version of the Mound Builders theory and its stories. Nor is Smith's sacred book a further amplification of Biblical legends following John Milton's and later antediluvian epic poems. Although *The Book of Mormon* also complements the Bible by telling the history of some unknown branches of the Jewish tribes, its literary approach is very different. Its biblical prose seems rather to be related to a contemporary reappraisal of Hebrew writing as a viable alternative to the formerly prevalent Greek and Latin classical rhetoric still worshipped by Milton and his disciples. Instead, *The Book of Mormon* fully reads as a second Hebrew Bible, including its division in books and, above all, its extensive use of parallelism as its main stylistic device. In this, it was highly original and innovative. No other contemporary book was so fully aligned to ancient Hebrew rhetoric for so many pages. Additionally, it was published before other attempts at mimicking Hebrew prophetic literature, such as Félicité Lammennais's *Paroles d'un croyant* (*Words of a Believer*, 1834), or Hebrew sacred historiography, such as Pierre-Simon Ballanche's *Vision d'Hébal* (Hebal's Vision, 1831). *The Book of Mormon* did come after William Blake's poetic-prophetic works such as *The Book of Urizen* (1794/1818), but Blake's texts were written in Miltonic blank verse, not in the kind of Biblical prose so consistently used in Mormon scriptures.

All these details of literary history aim to contextualize *The Book of Mormon* as a work perhaps inspired by God, but certainly written according to the narrative, thematic and writing approaches embraced by quite a few authors in Europe and America in the broader Romantic Period. We saw how archaic legendary exploration gave birth to nearly fully-fledged high fantastic secondary worlds, including in the framework of neoprophetic and neobiblical prose poetry, such as the episode of Cethim in Alexandre Herculano's *A Voz do Profeta* (The Prophet's Voice, 1836). This kingdom of Cethim was fully imaginary, although its name comes from the Hebrew Bible as well. However, none of these works, including the most high-fantastic ones by Bulwer-Lytton, tried to add scientific plausibility to their inventions. They were presented as plain legends and myths. In contrast, *The Book of Mormon* is the result of revelation, but how it was revealed can also be related to (proto) high fantasy, given the fact that this genre often relies on the scientific methods and discourses of modern humanities to underpin the historical or mythical plausibility of its secondary worlds.

Unlike Blake's poetic visions, the sacred book of the Mormons bears, indeed, the mark of these disciplines. Joseph Smith tried hard to confer material plausibility to the revealed book by invoking the authority of philology, which was contributing so much back then to the decipherment and knowledge of ancient languages and documents of the Fertile Crescent and nearby regions, such as the Ethiopian first book of Enoch. In fact, the mention by *The Book of Mormon* of reformed Egyptian as a historically existing linguistic reality was underpinned by the short writings in it offered by Smith and his followers. These short texts were allegedly copied from the metal plates from which Smith had translated Mormon's sacred history, likely as a sort of hard proof of the existence of the plates themselves. Thus, the supernatural vision is coupled with an undeniable interest in persuading modern readers of the material nature of the revelation. It was not Moroni who had dictated the sacred scriptures to Joseph Smith orally and directly in successive visions, as the angel Gabriel had revealed the *Quran* to Muhammad, according to Islamic sacred history. The knowledge of the ancient Mormon books is mediated by tangible objects and an ostensibly scientifically accurate translation, although the alleged original went missing. In this regard, one can wonder if Smith had heard of the staggering success of a legendary matter offered to the public through philological translations, including explanatory notes, and also without a documented original. In 1830, the matter of Ossian, as it was pseudo-translated by James Macpherson into English and subsequently into any major European language as from 1760, was still very popular. Indeed, Ossian and Mormon have in common that their attempt at securing plausibility through philology was so successful that they were considered not only authentic translations, but they also gave rise to a sizable number of derivative literary works. These revisit the supposedly historical venues and times revealed by Macpherson through his prose renditions of the works of Ossian, such as Johan Ludvig Runeberg's poem *Kung Fjalar* (*King Fialar*, 1844), which soon acquired canonical status in Swedish literature.

The Book of Mormon also inspired its own amplifications already in the 19th century. Unfortunately, the (hi)stories about its matter have never obtained appropriate literary appraisal outside of the limited community of Mormon scholars, despite the existence of highly estimable prose narratives such as *Corianton* (1889) by Brigham Henry Roberts. This writer, as well as high authority of the LDS Church, expanded to the length of a short novel a couple of sentences from the Book of Alma, the longest in the Mormon scriptures. Those tantalizing sentences hint at a sinful love affair between one of Alma's sons, Corianton, and Isabel, a woman of questionable morals who had perverted the innocent young man. He only repented after having been deceived and mocked by that 'harlot,' a willful woman in the service of evil, portrayed as all the more attractive for it. Isabel becomes in Robert's novel a fascinating example of the stock character of the *femme fatale*, which was widely popular back then, when Salome, among other sexually empowered 'harlots' from sacred history, became a prominent motif in the artistic and literary circles of late 19th century Decadent movement, not only in the European continent, but also, as we can see, in Mormon Utah…

Corianton was for decades a model for new literary recreations of Mormon sacred history. It was turned into a play and, eventually into a peplum by Mormon filmmakers in 1931. However, it failed to overcome the invisible barriers surrounding the community. Even today, *Corianton* is a classic of Mormon literature, but has been ignored outside of the academic world directly linked to Mormonism. Contemporary Mormon writers such as Orson Scott Card, Stephenie Meyer and Brandon Sanderson have fared much better, crossing all barriers. Their widespread success has secured them a significant place within speculative fiction. Their best-known works, however, do not belong to Mormon literature since they are not set in a Mormon milieu, and do not directly address matters of Mormon theology, ethics and sacred history. As a consequence, the latter remains *terra incognita* to most Gentile readers and scholars.

One could argue as an excuse for this regrettable ignorance that narratives treating Mormon sacred history as fiction do not usually show much literary sophistication, save Roberts' *Corianton*. American Mormons have rather produced series of novels which rewrite episodes from *The Book of Mormon* following the received model of contemporary best-sellers from the Anglosphere. Among them, Heather B. Moore and Chris Heimerdinger continue to do so tirelessly. These novels are quite popular among Mormon readers, but their literary *sancta simplicitas* is all too evident, given their linear narrative, their exclusion of any other forms of writing but plain narrative prose (no poems, dramatic scenes, or fictional non-fiction), their unsubtle dialogue, their virtual lack of stylistic devices, and their taste for action rather than for introspection and for the explicit rather than the implicit in portraying characters, as well as the matters of feelings and life. However, there have been a precious few recreations of Mormon sacred history with both human depth and formal beauty rivalling those of any work by international writers from the literary mainstream. Two of them seem to stand out in this regard. *The Nephiad* (1996) by Michael R. Collings is an epic poem focusing on the departure and first adventures of Lehi and his family from Jerusalem. Its Miltonic style, handsomely updated in its rhetoric and moral conception, allows this poem to be comparable to others written by renowned authors in the last quarter of the 20th century also in blank verse and commemorating figures from sacred history, such as *Moses* (1976) by Anthony Burgess. *Estampas del Libro de Mormón* (2018) by Gabriel González Núñez, translated by the author himself into English as *Book of Mormon Sketches* (2023), is a collection of brief monologues in poetic prose summarizing the life of forty characters from *The Book of Mormon*, and masterfully following in the footsteps of celebrated poetess Juana de Ibarbourou, who had published in 1934 *Estampas de la Biblia* (Bible Sketches, 1934), composed of monologues in prose of men and women from the Old Testament.

These two works by Collings and González Núñez, along with the best-sellers by Moore and Heimerdinger, show that the sacred matter of The Book of Mormon continues to inspire fantasies across the spectrum of both highbrow and lowbrow literature, at least among Mormons. Given the consolidation of that matter as a literary subject, it is perhaps high time for Gentiles to become also familiar with it and to be aware that it is one of the great cycles of (proto)high fantasy worlds still being revisited today, at least among those whose first alleged subcreator is known by name. Unlike the arcane scribes from Canaan and Aryavarta, whose sacred stories were anonymously recorded over the centuries, the (pseudo)translator of The Book of Mormon has a name, as well as a specific place and time for his writing. Joseph Smith is, therefore, to be counted among the few people having succeeded in offering new vistas of ancient human history along with Plato, who revealed Atlantis, and Robert E. Howard, who told us of the Hyborian nations among whom Conan lived his adventures. Many other writers have offered us afterwards new details and new stories from the civilizations first known thanks to those these three geniuses. But were they fiction or history writers?

Mormons believe in the literal truth of *The Book of Mormon* as a historical narrative with the same legitimacy with which members of other religions believe in the truth of their various sacred histories, even when they all might challenge the laws of nature and common sense. Others have believed in the existence of the bard Ossian as an actual person, while many are persuaded, still today, that Atlantis was a truly existing empire and continue to relentlessly search for it throughout our planet, with the same lack of success in their endeavors as if they were on an archeological quest for Conan's Aquilonia. All those beliefs are equally respectable. If we do not feel entitled to question the sacred words of the one God of Islam or of the eight million Shinto Gods, why should we dare to question those who believe in the real existence of Atlantis, of Howard's Hyboria and, for that matter, of the mighty city of Zarahemla as described in *The Book of Mormon*? Believers or not, we feel nevertheless entitled to reading all these sacred and secular histories as if they were fictions, that is, as if they were, indeed, high fantasies.

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subroutine_trace

Martha Hipley

The ewe's corpse is so sun-scrubbed and wind-swept that it is little more than a pile of bones and dried sinew arranged in the rough form of a sheep. A drone approaches, cresting over a hill while guiding several thousand still-living sheep who bear little resemblance to the dead creature. It rises and leaves the herd behind, approaching the rest station where the bones are clustered around the seal of a mechanical gate. A light above flashes in acknowledgement as the drone sends a signal. The gate begins to slide on its rails, hooks against one of the animal's ribs, and hums with effort. Some small percentage of livestock die in each year's migration from accidents or thirst – an inconsequential loss.

The drone hovers just above the carcass and hooks around the spine and ribs with its claw-like manipulators. It reverses, pulling the skeleton free. It falls apart in a clatter of bones and dust. The gate slides open on its rails.

One rib remains tightly in the grip of one of the claws. The drone scrapes it against the ground, forming first a line, then a loop, then a full figure-eight. The drone loops wider and wider, extending the figure into a bouquet of circles gouged in the dry, red dirt. From above, it resembles something like a flower, but there are no flowers in this terrain, no fruition, no surplus.

The drone returns to the herd and guides the sheep through the open gate. They trample over the figure, grinding it into a ghostly whisper. They leap over the bones, as insignificant as anything beneath their feet in the Martian terrain.

The shelter is simple: a wind-shield ring to contain the sheep, a vinyl canopy stretched across a curved steel frame, purified reservoirs of water collected from the cloud-seeded rain, some additional bots to scrape through any droppings and sanitize the space between seasonal visits, an array of solar panels for powering the system. The sheep pass through a gauntlet of antiseptic sprays.

The drone hovers above the gate until the last ruminant enters. It signals for the gate to shut and flies to a docking station. It locks in for the night, the rib still held tightly in its left manipulator. The animals sleep.

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At sunrise, the drone undocks and guides the sheep back through the gate. The dry, bleached rib is light and makes little impact on the drone's powerful flight. It holds the bone aloft as it cruises, almost like a shepherd's crook. Fresh from rest, the sheep bound across the hills, grazing as they go, stripping the engineered bluegrass to its roots. They cover a comfortable twenty kilometers in the low gravity, guided by the drone to the next rest station. The gate opens, and the animals enter. The portal slams shut, but the drone does not rest.

Instead, it loops the station's perimeter, flying low. It scrapes the bone into the red dirt a second time. It carves out figure eights, linking them together in a daisy chain around the station's ringed wall. With each loop, the chain grows darker and deeper. When the sun finally sets, the drone enters the dock.

#

The next day, the red dirt runs almost black with rain. The gate hangs open while the sheep bustle and blister, scraping up what grass they can within sight of the shelter. The drone flies high in a one-kilometer loop, powering against the wind, occasionally swooping and diving to drive back clumps of sheep that stumble too far from safety. In the early afternoon, the drone guides the animals back into the shelter. They are wet and underfed.

One hogget, a young ram, prowls the enclosure, scraping its horns against the curved steel wall. The drone swats at it with the rib bone and swerves as the ram steps back and charges forward. Its horns clang against the wind-shield like thunder. It paces back and then slams against the wall again. Its horns are undamaged. It returns to the depths of the herd, obscured by larger and louder animals. The drone loops the interior, waving the rib bone until the animals finally sleep.

#

The following day is blown out and harsh with summer sun. The sheep move swiftly. The drone skims close to the herd, waving the bone past the animals' blank eyes. By midday, the beasts show no interest in the wilted grass along the trail. They rush through the gate of the next shelter and collapse in the shade or fight over the water stations. The drone locks the gate and flies out into the hills.

Far from the terraformed grazing paths, the drone flies low over an expanse of open, red dirt. It grinds the tip of the bone into the soil in perfect, concentric circles, each new circle with an exact one-meter increase in diameter. The image nearly spans an acre when the rib bone snaps against a half-buried rock. The drone discards the shattered bone and flies back towards the shelter. The hoggets still hum with nervous energy in the cool evening. The drone enters its dock.

#

The summer heat is even stronger. The drone opens the gate and prods the animals from their resting places in the shade. The older animals are the first to exit the shelter, closely tailed by the lambs. Only the hoggets still loop the shelter, as though reluctant to leave the cool, rebellious in their hormonal state. One by one, they trot out into the sun as the drone swoops and swerves to prod them along until a single young ram remains, undeterred by the aerial maneuvers. It gulps from an abandoned water trough and kicks at the dirt.

The drone approaches. At first the ram begins to trot towards the gate but then suddenly doubles back and sprints towards a far wall. The drone follows at a close distance. With its back to the wall, the ram steps back slowly, then charges. Its target flits up several meters, letting it skid forward in the dirt. The ram turns, and the drone flies low.

This time when the ram charges, the drone reaches out with both manipulator claws, locking them around the creature's horns. The drone's blades hum with effort as it lifts the animal into the air. The ram hangs limp. The drone flies towards the open gate.

#

The drone crests a hill, flying out ahead of the herd. It accelerates as the next shelter appears in the distance. At the gate, the sun-bleached skeleton of a young ram lies contorted – several bones are smashed beneath the gate's rails. The drone pulls at the skeleton with its manipulator claws, shaking it until the last bits of sinew snap and the bones scatter. It hooks one claw through the nasal cavity of the skull and hovers, holding it aloft in the fading sunlight. It flies low and traces two perfect lines in the red dirt, one for the tip of each horn. It returns to the herd and guides them to the shelter. It closes the gate but does not yet dock.

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Yet Still The Apertures Burned Cold

A.P. Ritchey

No one had stepped forward.

Not a single person.

That was no surprise to anyone who'd stood before the machine. Three large, cold rings suspended in a white room surrounded by glass walls and ranks of computers. No ornament. No promise. It looked like a guillotine for molecules. The first human-rated transporter. Billions of dollars and the damn thing actually worked.

At least on the little stuff.

They had pushed rocks through it. Keys, books, clocks. Then the mice, of course. Poor trembling things that vanished in a hiss of light and reappeared in an identical room, hundreds of miles up the coast, with hearts hammering and eyes rolling in their pink skulls. Sometimes wrong. Sometimes changed in ways the men in the white coats would not speak of.

Sometimes the thing that went in simply did not come back at all.

Lost, they said.

Lost in the stream.

But they'd adjusted their calculations and the settings for the capacitors and practiced at the procedure countless times, and all agreed the time had arrived for a human trial. Someone would be first. Someone who would put their feet upon the metal dais and walk into the trembling light like a sinner to judgment. Someone brave, or foolish, or most likely a bit of both. They would be the first to have their very being parsed into particles, accelerated through the wormhole's throat, and reassembled eight hundred miles north up in Seattle.

The first human to travel faster than light.

And possibly the first to die of it.

The conglomerate pretended at courage, but their own engineers refused the leap. Not one scientist, not one employee. They quoted schedules and liabilities, but the truth clung to them like smoke. They were afraid. So, the suits offered two million dollars. A price on mortality. A bounty for stepping into the unknown.

#

On the morning of the test, the rings burned with pale power and the veil hung between them—an undulant curtain of cold light, flickering and trembling.

Jason Kerr stood before it.

Before that day he had been no one. A low-level scientist working in an adjacent complex. His field was biopharma, not particle physics. But he was educated in the sciences and that was a big part of the search for a volunteer -- someone who could actually understand exactly what they were being asked to do.

Not everyone agreed, but some considered the device to be a form of suicide. As it turned out, when the award was announced, plenty of people would gladly die for the money, so simply volunteering wasn't enough. The finalist had to be able to explain the process, as unsettling as it was, and still convince the committee they were doing it for the benefit of science or humanity or something parallel and convincing. Jason Kerr had told the board in a calm, level voice that he understood the risk. He had even spoken the forbidden phrase aloud. Personal continuity.

Where others had been unnerved, Jason Kerr wasn't, not that he wasn't scared out of his mind.

#

Hours of checks.

Redundant checks.

Go/no-go.

Humanity has never been so afraid of the word go. But the time finally arrived.

Jason stepped forward.

"Last chance," Dr. Eames said, clutching a clipboard to her breast like a holy text.

"Last chance?" Jason asked. His eyes were fixed on the writhing veil.

"To not do this."

He gave a slow nod. "It's just walking, right? Just close my eyes and go straight in." He looked at her. "And it will still be me that comes out the other side. Right?"

Her jaw worked. She seemed to be swallowing something sharp.

"That's a very deep, very philosophical question." Eames let out a breath. "Even now, you don't have to do this."

Jason rolled his shoulders and breathed as if preparing to run into a storm. "Yeah," he said. "Yeah, I do."

"For what it's worth, I prefer to think it will be you that returns." She laid her hand on his shoulder. Gave it a squeeze. "No matter what, people will remember your name."

She stepped off the dais and Jason stared into the machine.

The coils spat light.

The floor hummed.

Banks of sensors recorded a thousand variables every thousandth of a second. Up in Washington, a crowd pressed against thick, sound-dampening glass walls, watching their own rings, their own writhing lightscape, waiting for the impossible.

Cameras stood ready.

The champagne was cold.

Jason Kerr did not think of any of this.

He thought of his atoms, for in truth, he knew himself for what he was: a document, a chapter of a book pressed from the pulp of the tree of life. And he had willingly agreed to step into that machine, that bright monstrosity of steel and calculus. Part fax machine. Part paper shredder. A device that would read every line of him even as it tore him apart and nothing of him remained but a ledger of charge and position. He understood the stream would carry him behind the great curtain of the universe, and that he would rise again. A resurrection. Or maybe just an echo.

Someone had to take the leap.
Jason faced the veil. It seethed in its rings like light made flesh. The cold of it crawled across his skin. Every animal instinct in him clung to the floor.
He set his jaw.
Fisted his hands.
Stepped forward.
As if sensing a meal, the veil quivered at his approach, like the hide of some great and dreaming beast.
Then, Jason Kerr walked into the light.

#

At first glance, it worked.
The reconstituted matter transversed the eight hundred miles between the machines faster than a photon in open space. It arrived in the shape of a man stepping from within the light. A joyous moment.
The wonder.
The dizzying implications.
But the world was given precious few days to ponder this great leap.
For already the air itself had begun to ring with a faint and steady tremor, like the low tuning of some buried cello whose strings ran between the devices. Men and women in white lab coats in California and Washington lifted their faces from their screens, and in their eyes lay the first dull apprehension that they had miscalculated.
Something was happening.
Something different, unexpected.
Something with that godawful machine.
Different than the rocks and the keys, different than the clocks and books and the mice. For this tunnel which the scientists had so laboriously dug, this narrow dark bright crease that ran behind the great curtain of the equation that is the universe, did not close that day.
Nor the next.
Nor for all the turning of the ages that followed.
The two veils endured.
The two ends of a trembling membrane drawn taut. In time, with no small amount of desperation, the machines at either end were carefully dismantled.
Then the buildings.
Then everything within a two-mile radius.
Yet still the apertures burned cold and bright, a wound in the fabric of the world that neither scabbed nor bled.
Generations passed.

Then centuries.

Then millennia.

Scholars and priests who knew nothing of Jason Kerr built shrines around the shimmering lights. Nations rose around it and the number of words used to describe it multiplied as new languages found footing in the dim, distant future. A hundred-thousand generations of children grew up in a world with twin eternal lights, knowing no other reality.

In time, humanity faltered. Language itself vanished.

And still the veils churned.

Continents drifted.

Oceans receded.

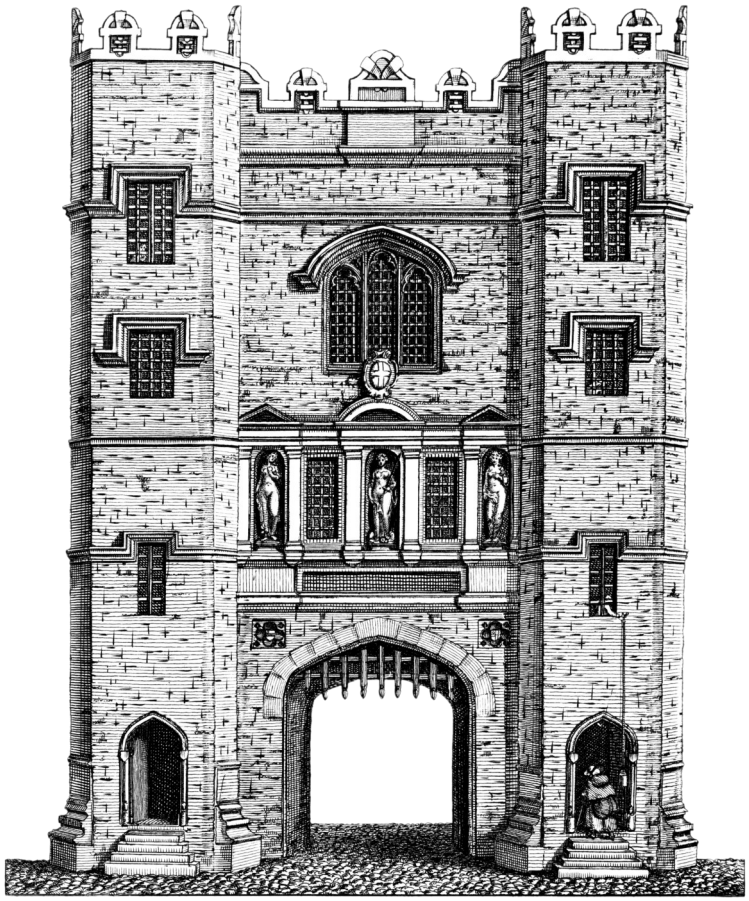
Still the apertures seethed, an endless export from some other dimension from behind the great curtain that is the universe.

Only when five billion years passed and the Sun grew swollen and red and monstrous in the sky, when it finally gorged upon the brittle rind of the world, did the link between the two apertures falter and collapse, ripped from beyond the curtain by an unfathomable gravity well, its final shudder extinguished beneath a tide of fire.

Yet even then, in the smallest recesses of those miniscule dimensions known but to the universe itself, the memory of those open doors remained impressed upon the base fields of the cosmos, like the faint afterimage of lightning on the eye.

And whatever stepped through that machine on that first day, whatever wore the shape of a man or was the echo of one, had all that time to walk the darkened halls between the atoms and the stars, unchallenged and unseen.

~



Should-Shock

Paul Boltzmann

A nightmarish gasp broke the buzzing sound from the cold neon lights on the ceiling. Frank looked around, realizing that he was in a hospital bed, in a pristine, sanitised medical room, connected to life support equipment. His breath was stabilising from the shock of the awakening, while his brain started wondering for how long he has been asleep. He was alone, but still alive.

Suddenly, three strangers in military uniforms filed in through an automatic door, eagerly surrounding Frank around his bed. "You are finally awake!" exclaimed an enthusiastic officer while reaching for his penlight to test the patient's pupillary reflexes. Their unexpected presence in the room bothered Frank more than the intense white flash in his eyes.

"Where am I?"

"You are on the Interplanetary Space Freighter *Frontiers*" explained the most decorated one among the three. "We are the officers in charge of command ops. We intercepted a distress signal from your vessel, and our support agents have found you inside a cryogenic capsule. It saddens me to inform you that you are the sole crew member found alive".

"We have found several signs of struggle over the corpses of your former crewmates: traumas from blunt objects, cuts and bruises likely from non-military equipment and tools" the third officer added. "It appears that a violent conflict had erupted among the staff, possibly an internal revolt. It would be very helpful to understand what happened aboard your vessel, but first we thought that you have not had any solid food for a long time, perhaps you'd have appetite for a light meal?" A metal tray was offered to Frank, with three slices of bread and a glass of water on it.

"We had some disagreements, let's put it this way". Circumstances still felt too unfamiliar for Frank to further explain what happened on his spaceship. Despite the good intentions of his rescuers, he had developed a distrust towards sympathetic behaviour, and decided to test their real nature through a simple question, by raising a slice of bread: "What is this?"

The three officers looked at each other with a surprised stare, and one hesitated to whisper an insecure reply to the unusual question. "Bread?"

This apparently superficial answer brought Frank deep feelings of joy and reassurance. "Yes! Bread! Finally! This is bread! This is simply bread, and there is no need to further debate on this!"

Frank's overproportionate reaction left the rescuers clearly puzzled, who grabbed the opportunity to ask some follow-up questions: "You must be tired and confused right now, and you definitely need more rest for a complete physical and mental recovery, but we would really be thankful if you could briefly explain us what happened on your vessel, so as to inform our headquarters and be adequately prepared to address any potential threats to our mission".

"We… we were no longer able to state the obvious…" explained Frank while looking at his food. "It was a contagious bias. It led to confusion, false accusations, anger and bursts of violence that quickly spiralled out of control".

The senior officers insisted on digging further. "Was it due to a bug in the communication system?" "Perhaps it was corrupted AI? Did you install the latest firmware of Sagittarius©?" "How about a neurological disorder? I wonder if such syndromes can spread from airborne pathogens?" "Maybe the crew got infected by a brain parasite? Were you hosting alien lifeforms on your vessel?" The barrage of questions overwhelmed Frank, who was unable to contain their inquisitive enthusiasm.

"No, no, there were no clear causes that I am aware of. It was just… a divisive environment. We were strictly following guidelines aimed at preserving unity among crew members, to have tact and promote inclusiveness in our daily communication. But somehow these good intentions led to disagreements in semantics that dismantled our cohesion, to the point that we could not reach an agreement without arguing or fighting, even about the nature of the most basic, elementary concepts, for example that this slice of bread is just bread".

"Well, it is a slice of bread". The correction made by one officer about the difference between the part in relation to a whole made Frank suddenly uneasy.

"Actually, that is not even bread, if we define bread as a baked food product made of flour, yeast and water. The *Frontiers* is not equipped with hydroponics capacities, so the food that we consume here is assembled from 3D-printing carbohydrate, amino acids and synthetic fibres".

"Perhaps the most appropriate expression in this context would be that you are holding a slice of machine-made food that resembles common bread" suggested one of them, with a half-smile that hinted at a feeling of pride for coming up with a brilliant idea to such an insidious problem.

"What are you implying when you say common bread?" Another officer raised his voice, triggered by a potentially offensive use that can be derived from that specific adjective. "We work for a federation of planets, each with its own distinct biomass production and culinary tradition. I have the feeling that an improper use of the word "common" carried the implication that the food production obtained by exploiting Maillard chemical reactions in human-populated environments is superior to other form of nourishment generated by other biosystems."

"You are absolutely correct, officer, my deepest apologies for such a blunder. Then maybe we could define this food as a slice of machine-made, spongy, gluten-based nourishment surrounded by a baked crust that would be used as a supplement to bread, based on the equipment available on board of our vessel."

The third officer gasped at such an outlandish suggestion: "Excuse me, colleague, but I suffer from non-celiac gluten sensitivity, are you implying that the gluten-free alternatives are not equivalent to the slice of baked nourishment we have just served to our guest?"

"But is the crust baked or 3D-printed? And could "spongy" be considered derisive of the habitat of our Neptunian colleagues?"

"Oh bloody hell! Why everything nowadays has to be about the feelings of Neptunians?"

"Watch your language, colleague! And do not question the importance of xeno-sensitivity! We are the command ops officers, we lead by example!"

Tear drops crossed the hollow, bearded cheeks of the rescued passenger, as the heated exchange between the three officers on the definition of bread has completely diverted their attention for providing medical assistance to Frank. Despite this, he was confused about the source of such a sudden melancholy.

Most likely it was resignation – he sensed that this pointless discussion was a first step towards disaster. But he felt also something else, an itch that bothered him. It was not a somatic irritation caused by the limpness of his body after being motionless for an undefined amount of time, but more like a tingle in his brain, an inaccessible area inside his cranium that required physical scratching to have a feeling of relief.

Because a critical voice inside him whispered in this ears that indeed the use of qualifiers to identify parts of a whole was the most appropriate approach to define the substance of an object in line with the scientific criteria that command officers must follow, but his three counterparts were completely ignoring guidelines to explain abstractions to visitors. To be precise, though, Frank was not technically a visitor, but an official crew member of a space vessel of the Federation which was no longer operative.

The debate was now in Frank's brain, and hence in his soul. One side of his personality was desperately advocating for letting this go, screaming "No!" frantically and repeatedly. But another voice was more subtle, insidious, passively aggressive, encouraging for rationality, reason and sensibility, because a clearer and correct communication ultimately helps everybody in a workplace, do it not?

Two words came out of Frank's mouth, halting the discussion between the three officers in front of him.

"Well… actually…"

#

Three earth-years later, the military Spaceship *Fury of Orion* was scouting the orbit of Kepler-675 b when a signal alerted the Communication Officer of the Command Ops.

"Captain, we have intercepted a distress signal from an allied vessel".

"Which one?"

"The Space Freighter *Frontiers*, Captain".

~

A Roll Of The Quantum Dice

R. Foster

Think carefully before you cast these dice.

When you first pick them up, they don't seem different. The same heft as a pair slipped into your palm in a Vegas casino. But if you step up to that dark table, you'll know pretty quickly how far from ordinary QuDice are. That first toss sends your mind tumbling in ways you never come back from.

Quantum Dice.

They were an unexpected outcome of a backroom project at Lawrence Livermore National Lab, Weapons Superblock. The guys were struggling with how quantum effects were limiting the yield of their device.

It drove them nuts. Neutrons, protons, they can never make up their minds. First, they're a particle, then they're a wave. How could you ever understand that insanity?

Well, what if you could experience quantum behavior firsthand? In everyday objects, like baseballs and basketballs? They shared the same particle-wave duality as subatomic particles. But weirdly, even though baseballs were much bigger than protons, their wavelengths were much smaller. As objects got bigger their wavelengths shrank down to nothing. And their quantum nature disappeared.

Those guys took it as a personal challenge: Make quantum behavior visible by making wavelengths bigger. You've got to hand it to our geniuses. They found a metamaterial that would curve spacetime so tightly it could redshift particle wavelengths up orders of magnitude.

I did the calculations, and it blew us all away. It would expand a hardball, or a human's wavelength up into the centimeter range. You could experience your own wave nature. You could live in a quantum world.

So, they locked themselves in the cleanroom, and worked round the clock refining fab routes. The crystal structure was crazy hard. Learning how to grow it took the better part of a year, but when they got the processing parameters dialed in, they were seeing flawless samples as big as your thumb.

At first it was strictly research. They were going to rewrite all the textbooks. Nobel prize stuff. But somewhere along the way, overwork and arrogance gave way to bad judgement, and somebody said, "Dice."

That was it. Such an obvious choice.

They grew two 1.5 cm cubes and etched a slit straight through each. Two vertical stripes of darkness, double slits staring you down.

Snake eyes.

I tried to warn them. I kept saying: Listen to Einstein. Even God wouldn't touch these dice. But when they passed them to me, my knees went weak. I remember my hands shaking so hard I could hear the QuDice rattling like bones.

I threw and time shuddered. The QuDice tumble through space, and I'm tumbling too, falling, squeezing into those double slits. There's this incredible rush, as my body thins and ripples. Suddenly I'm surging forward, a thrilling frequency vibrating through me, a cosmic Om ringing out hosannas. I can feel my wavelength stretching and expanding, probability distribution blowing up to fill the room. I don't exist anywhere in particular. I'm everywhere, all at once. For a few moments that feel like forever, I am a cloud of probabilities, every location and every state, all suddenly superposed and all existing simultaneously. I see every conceivable me -state exploding out in a dazzling kaleidoscope of endless multiplicity and I am them all. Everything is possible and nothing is determined. Then in an instant, the QuDice hit the table, skid to a stop and I collapse.

Word got out. Everybody came to try. A young post doc brought in her boyfriend, and they tossed the dice together. Sex in superposition. Two bodies intermingle, merge and entangle. They share every quantum state, as they pour from the double slit, interlaced waves cresting and breaking. Love's fringes of light and shadow, brilliant hot peaks of passion, cool dark hollows of surrender, reinforce and cancel, again and again, fading to infinity.

After that, there was a line out the door. The Lab Director tried to shut it down, keep it quiet, but it was too late. The QuDice had already tunneled out. You couldn't build barriers high enough. Dice parlors started materializing all around the South Bay and nobody could stop them.

In the end, even I couldn't quit. God, I tried. But when I held those QuDice in my hands, nothing else mattered. To touch the pure bliss of the quantum wavefunction, every state superposed, every reality coexisting. You could see it all, know it all, be it all. If only for an instant.

That's why the crash is all the crueler. When the QuDice tumble back to earth, the wavefunction collapses. The bubble of possibilities pops and the superposition of states reduces to one eigenstate. The state that is your life.

But what really hurts, is that as you're being squeezed down, reduced to that one lousy reality, you don't even get to choose. You watch all those possibilities slip through your fingers. All those choices disappear and none of them are yours. The cold probability of the wavefunction decides the state you find yourself reduced to. And it's completely random.

There is no choice. No free will.

Everything that you are, all that you feel, the state you're in right now, is nothing but chance. It doesn't have anything to do with what you want, or decide, or that mirage you call intention. You are nothing more than an errant particle surfing a probability wave. And the universe is a casino, that calculates the odds, shakes the dice and throws you out to a random fate.

It feels so bad, so low. Your palms start to itch. Your head pounds. You'll do anything to get back to all those possibilities, desperate to toss the QuDice one more time. You know you will. You've got no choice. Your whole reality is just a roll of the dice.

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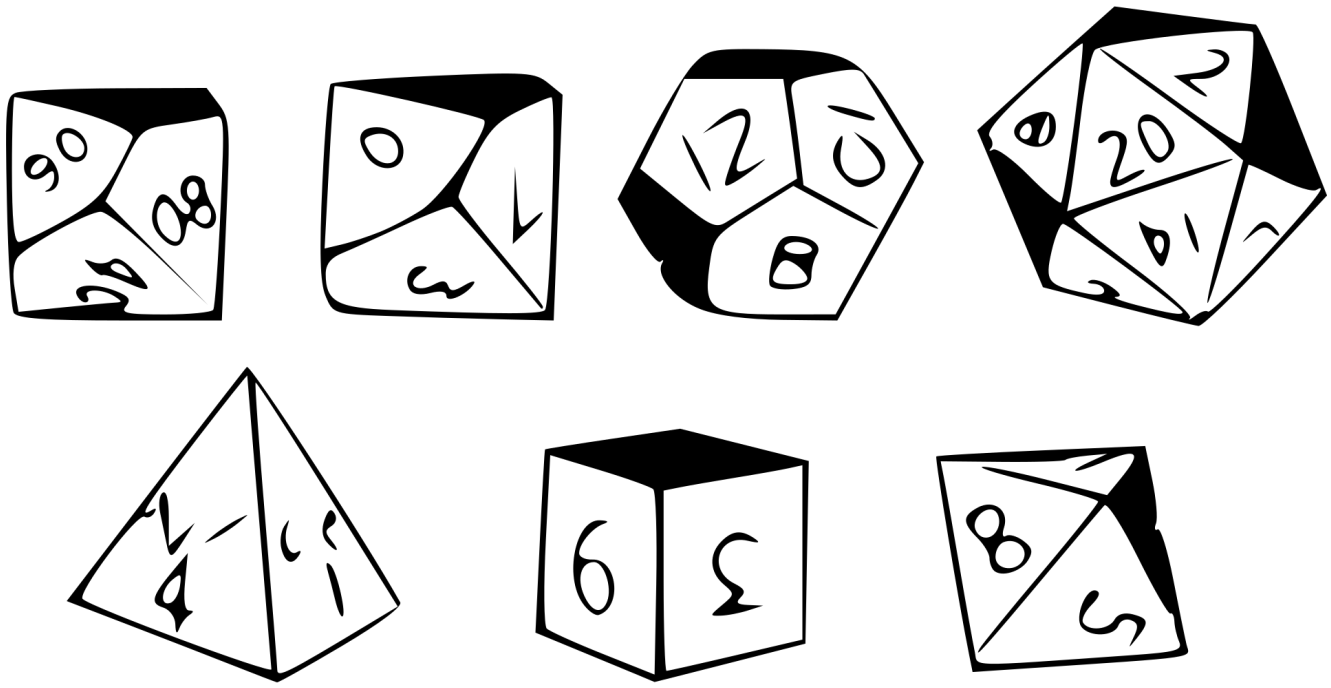

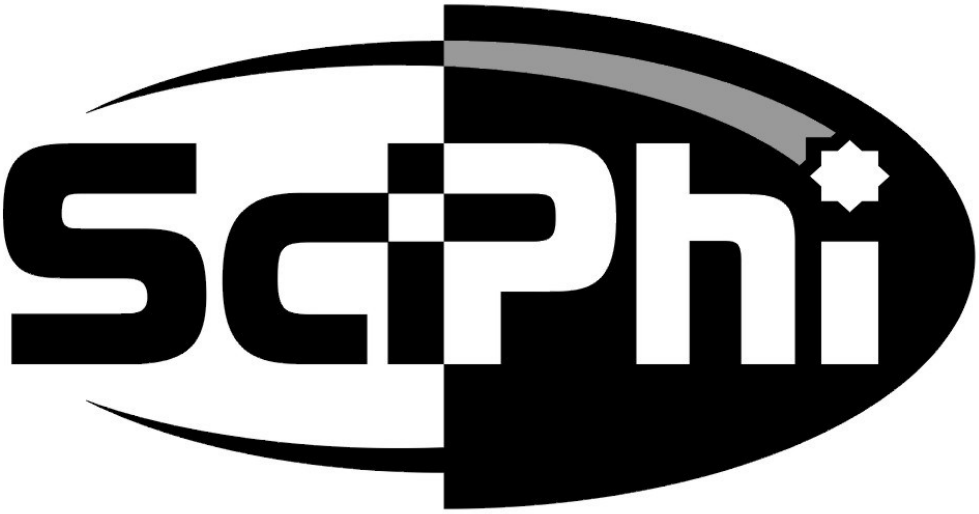

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