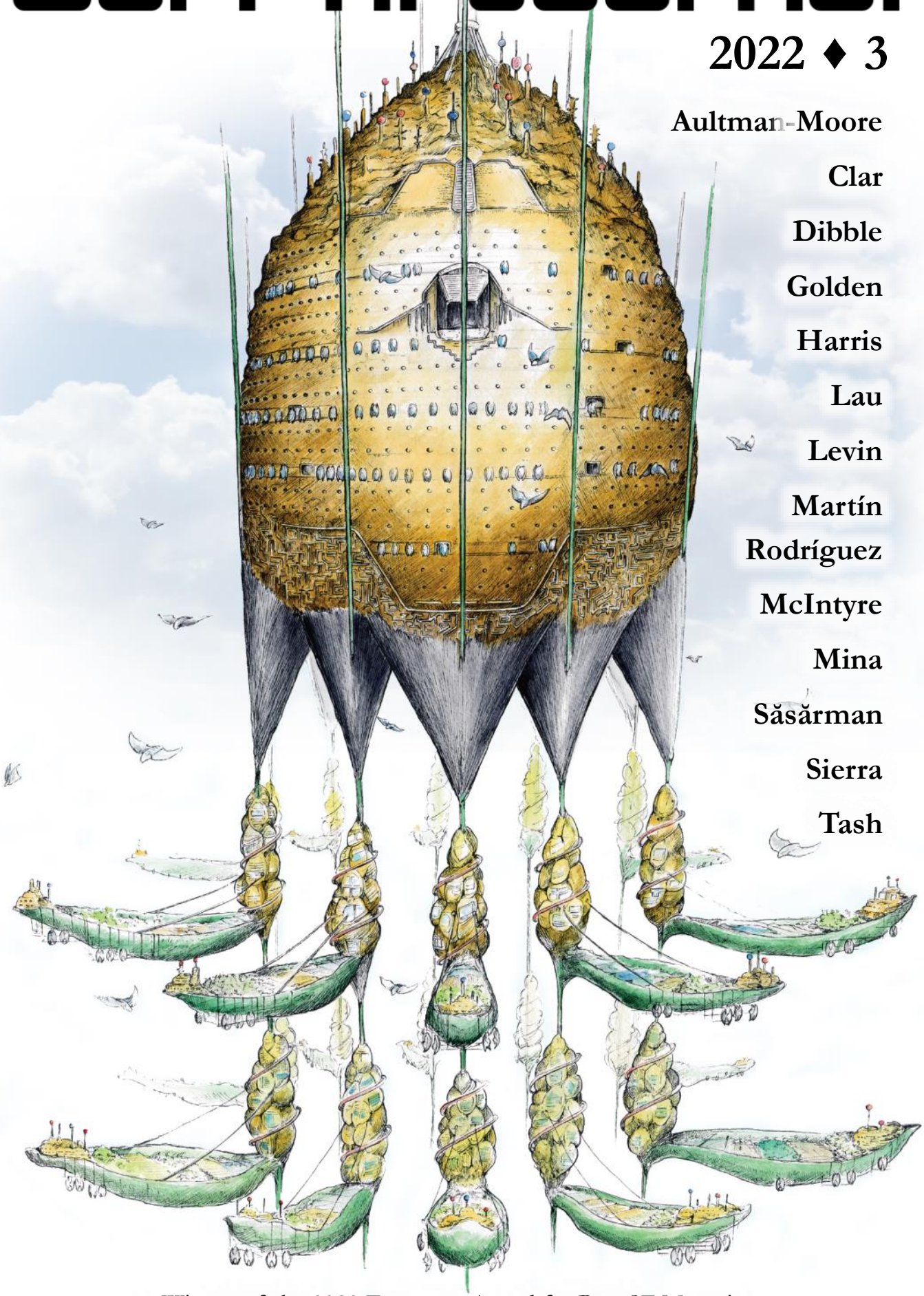
Sci Phi Journal

2022 ♦ 3



Aultman-Moore

Clar

Dibble

Golden

Harris

Lau

Levin

Martín Rodríguez

McIntyre

Mina

Săsărman

Sierra

Tash

Winner of the 2022 European Award for Best SF Magazine

www.sciphijournal.org ♦ team@sciphijournal.org

CONTENTS

CREW

Co-editors:
Ádám Gerencsér
Mariano Martín Rodríguez

Communications:
Gina Adela Ding

Webmaster:
Ismael Osorio Martín

Illustrations:
Gordon Johnson; Pixabay.com

Cover art:
Dustin Jacobus

Contact:
team@sciphijournal.org

Twitter:
@sciphijournal

Editorial office:
Brussels, Belgium

We are deeply grateful for the support of our part-time volunteers and *ad hoc* donors, both in Belgium and abroad.

Editorial

Lectori salutem.

More by happenstance than by assertion of intent, our Autumn 2022 issue features stories that circumnavigate themes of language and perception, both at individual and anthropological levels, as these tend to gravitate towards each other on our editing desks. Sometimes, ideas seem to exert a mutual pull of attraction on the platonic plain, and we are but swept along.

This time around, our imaginary voyages shall range from the ancient past (incl. Sasarman's classic *Isopolis*, hitherto unpublished in English), via alternate interpretations of the present reality we live in, to reports of future leaps of human evolution and far-flung planets with societies very different from our own.

A common concern amidst these tales is that how we perceive our relationship to our environs, our predicament in life, or our station within the wider community, is a substantive determining factor in a person's picture of reality – even independently of external, material circumstances. It is hard to conceive of concepts we do not have words for. Thus, it can be uncomfortable to be made to think outside the "box" – or the dictionary. But language (as well as technology) can also be used as conduits to reprogramme minds, if the stimuli involved are sufficiently pervasive and persistent.

In this vein, our co-editor Mariano had recently returned from an immersive linguistic expedition of his own in the Swiss canton of Graubünden (or Grischun in local Rhaeto-Romance parlance), home to the speakers of Romansh. Having sufficiently recovered from his language lessons, he is now ready to publish his findings on the fantastic and speculative fiction that thrives with surprising vigour within that arcane literary corpus. Mina is also back with an essay on "proper and improper monsters," exploring the shades of differences along the spectrum that spans from Frankenstein to futuristic cyborgs.

And as always, we thank you for your continued support on this journey of epistemic exploration – all aboard!

Speculatively yours,

the SPJ co-editors & crew

~

Translation

Joe Aultman-Moore

In this best of all possible universes, I led an international team that translated the book. The book explains the history of the universe and everything in it. We know this is the best of all possible universes because the book says that it is the best of all possible universes.

We know that the book explains the history of the universe and everything in it because the book explains the history of the universe and everything in it. The book explains that our lives have cosmic meaning in relation to the universe and everything in it as explained in the book. The book tells a history of the universe in which we play a unique and central role. Our unique and central role is to understand that the book explains the history of the universe and everything in it.

At least, this is what we are told it says.

As the book explains: because we have been created with a specific unique role in the universe, every action, every *thought* is infused with cosmic meaning. If you pick this flower, or linger over the sight of a star shining through the trees, it ripples out through space-time. Drive this type of car and it might result in a disease in a loved one, or a promotion. Cursing excessively might cause a plague. Make this particular form of sacrifice and your family will be favored for generations. Donating money to this organization could heal cancer. Or change the trajectory of a comet. Certain impure thoughts or choice of breakfast cereal, to watch or not watch a certain film could result in the collisions of galaxies or the implosion of neutron stars.

Fortunately, the book also contains rules for living. What is right and what is wrong. Payments for certain goods and services. What and how to eat, what to wear, how punishments should be carried out for certain crimes, how marriages may proceed and debts be paid.

Every moment of our lives, every thought, when taken in relation to the book, takes on importance that reverberates back to the moment of genesis and forward into eternity. It's all in the book. Not necessarily as direct prescription, but as an allegory. Not that this makes it purely *metaphorical*. Can a metaphor, when only interpretable as a direct infallible truth, really be considered mere metaphor?

This is, at least, what we thought when we began the translation.

The book is old, of course, ancient beyond history. In the long span of generations, societies shift, languages and power change. Sometimes, observations of nature do not match exactly the phrases in the book. Some passages, on superficial reading, seem antiquated or outdated. Place names that no longer exist, though they are present tense in the book. Currencies and units of measure no longer in use. Some phrasing is grammatically ambiguous, and could be interpreted in several ways. The book was written in a language that died thousands of years ago, and has been translated by generations of scholars, motivated by the cosmic importance of their work.

My team was commissioned by international consensus to execute the greatest translation of the modern age, to preserve the original perfectly—yet understandable in modern idiom. This way, we might shape our society as literally on the original as possible, to return to the original units of measurement, and replace the new maps with the old.

I speak many modern languages and have studied all the bygone ones the book has been written in. But this was an undertaking of much vaster importance and magnitude—I knew I had to become closer to the original than anyone alive. With international governments' assistance, I procured every document in the world composed in the ancient language, the work of several years.

The following decade was spent so immersed in the old language that I became fluent, even started to dream in it.

This language is subtle and beautiful, but not easy to understand. Many words do not translate easily, there is a certain shape to them that is lost in the process—some flavor of meaning. Sound and rhythm. The feel of words in the mouth. Each as important to language as pattern, tempo and melody is to music, or the feel of food on the tongue is to eating.

Everything is, in those ancient words, as beautiful and mysterious as a moonless night, when the blinding world becomes transparent and you can see again the loneliness and grandeur. I became obsessed with the fullness of the ancient book and came to understand it as if a lover had whispered the words to me. Multilayered ironies, poetics, alliteration, double-*entendres*, even witticisms—revealed themselves.

As did the impossibility—the futility—of true translation.

Then came another terrible revelation.

The universe described in the original language is not the universe described in later translations. The words are similar, the grammar translatable, but the entire worldview—the whole *cosmos* of the original is lost. Where the original gives mystery, the translations have certainty, where it is subtle they are blunt, where it is reverent, they are commanding.

Still, driven by this awesome task, I succeeded in making the greatest translation of the age. Such a complete understanding of the—should I say poetics?—of the original had never been written in modern times. It was a complete disaster. The translation was banned and any copies rooted out and destroyed. I was excommunicated from society, disgraced—lost career, friends and all social standing and sentenced to live in exile. It would've made too many people curious about the contents of my translation to execute me outright.

In the decades since, however, my translation occasionally springs up somewhere before being found and destroyed. It comforts me immensely to know that it is still out there.

I think it is because some people prefer mystery to certainty and beauty to comfort.

~

The Pronouns Of Hlour

Andy Dibble

Hlahaarn nations, almost all of which are functioning representative democracies, have requested that we produce speaking software for their people. What could be wrong with giving a people what they freely ask?

But believe me when I say it is wrong. There is history with which we, as humans and as citizens of the galaxy, must come to terms.

As recently as three centuries ago, the hlahaarn had no concept of gender. They are hermaphrodites, able to mate with any other mature member of their species, and they did. But generations of their young grew up in human primary and secondary schools. The curriculum culminated in health education, which presumed to teach hlahaarn youth how to comport themselves during intercourse. As a cost-saving measure, the company our ancestors contracted to produce said curriculum chose to adapt modules already in use on Earth. Stark differences between human and hlahaarn biology were almost entirely overlooked.

You may ask how this oversight could continue for generations. The hlahaarn have a flexible but highly-politicized distinction between *temperate* persons, those that come together only on their high holy days, and those that are *promiscuous*. Our ancestors, some founders of this organization, were horrified by accounts of anti-promiscuity pogroms and expulsions among the hlahaarn. They thought it best to encourage temperate and promiscuous to love one another, and teaching hlahaarn young of male and female was an expedient means of achieving this end. I suppose it was a noble experiment, but I question whether it was within their rights, even if the pogroms were as severe as the polemical histories available to us attest.

Some historians defend our intervention among the hlahaarn with platitudes: Cultural interaction always produces change. More refined advocates of neo-colonialism note how we have advanced their sciences, their health care, the equality of their educational systems, and furnished them with stable currency now that they are on the galactic dollar. Some with training in genetics offer statistical arguments: our teaching hlahaarn of human sexuality has reduced incest among them, which in turn reduced the incidence of harmful recessive traits. I dispute none of these arguments, but there is more to the welfare of a people than its life expectancy, standard of living, and evolutionary fitness.

You ask what this has to do with the request before us to produce speaking software? Alas, our male/female distinction has layered itself upon the pronouns of their common language, Hlour.

We are all acclimated to English's lack of a gender-neutral singular third-person pronoun that we have almost forgotten the oddness of the locutions we deploy to fill this lacuna. But the problem is wildly protracted in Hlour, which lacks gender-neutral pronouns in all of its 89 cases as well as the 4 degrees of distance in its demonstratives. Thus Hlour does not lack a mere three gender-neutral pronouns like English—counterparts to he, him, and his—but 356 such pronouns. Pronouns are no small thing in Hlour. Imagine English bereft of *that*, *this*, and all prepositions—*in*, *for*, *with*, and the like—and you will begin to grasp the difficulty.

Our businesses, academies, and social media are widely permissive in how persons addressed by others may define their pronouns and this permissiveness has rubbed off on the hlahaarn. It acquired a startling life among them. A significant minority have chosen elaborate schemes of obscenities or incantations, others gibberish or terms far longer than the names they replace, others the monikers of swamp creatures or house gnomes, still others the output of astrological or cryptographic formulas.

There is even a cottage industry set upon shaming celebrities by proving that their pronouns are ambiguous. The premier of a major hlahaarn nation lost their re-election bid because part of their pronoun specification, "refer to me as *lours* in daylight and *ourls* during the night," offered no guidance during a total solar eclipse.

You must think this all quite disingenuous on the part of the hlahaarn, but realize that they do not value sincerity as we do. To them complete sincerity is childish or rude because one who is completely sincere is not in control of their emotions. Their words are suspect; sincerity, in an important sense, undermines itself. Even when discussing especially political matters they proceed with irony and understatement rather than invective. The extent to which hlahaarn mean what they say has always been a difficult game of interpretation involving the greatest attention to context.

Given how deeply the pronoun debacle has infiltrated their market halls, towers of learning, and spirit homes, whole industries have sprung up to support the cognitive burden of using the correct pronoun for the correct person in the correct situation. It is now common for lectures and sales pitches in Hlour to be given not by professors and salespeople but by *leuhlorou*, "professional speakers" with training in adapting speech according to the pronoun requirements of the situation as well as the appropriate apologies and forgiveness rituals to be deployed in the event that a pronoun is misused. In many urban areas, the training required of *leuhlorou* exceeds that of medical doctors.

Best practices vary greatly by region. In the steppes of their northern continent, most hold that persons addressed choosing their pronouns is just a reversal of the old tyranny under which speakers chose all pronouns. They maintain that persons addressed are entitled to choose only half their own pronouns. But in the agricultural east, activists push for legislation compelling the use of a common pronoun scheme or allowing choice of pronouns but only within specified limits. Everywhere, old anti-promiscuity and anti-temperance slurs are brandished on all sides. Some disputes end in violence, hearkening back to the pogroms that so stained our histories of the hlahaarn.

So their national governments have approached us, a supposedly neutral third-party. Commerce and social services are crumbling. Many hlahaarn are afraid to speak. Their pronoun databases are now many times larger than even the most comprehensive Hlour dictionary. They ask us for an automated solution, for our software to inject the necessary pronouns into everything they say. If we supply what they request, they will no longer speak to one another, but software will speak to software and they will only understand translations of their own language.

Many of us wrestle with how we may empower the peoples our ancestors colonized to speak for themselves. Our software is emphatically *not* the answer. Software may encourage communication. It may prop up their institutions. It may increase exports. But they will nevertheless be divided, and it will be we who came between them. Our programmers, unlearned in their cultures, will choose the parameters for how the software learns.

I do not doubt our good intentions, but their language will inevitably assume the forms of human culture. We are already in their bedrooms, in the private words between lovers. Do not think they will throw off the yoke of the colonized with our help. If we give them what they ask of us, we will be in the songs their children sing beneath their violet moons. We will be in their wedding vows, in their death dirges and homilies. We will be in their thoughts. Our colonization of the hlahaarn will be complete.

~

Isopolis

Gheorghe Săsărman

Introduction by Mariano Martín Rodríguez

In our Summer 2022 issue, we discussed the life and work of Gheorghe Săsărman as an introduction to "Motopia," one of the descriptions of imaginary cities composing his speculative masterpiece *Squaring the Circle* – the title chosen by Ursula K. Le Guin for her translation of the Romanian original, *Cuadratura cercului*. "Motopia" was one of the cities that she had left out of her version, which was intended from the beginning to cover only parts of the collection. She related this to me at the time when I was helping her by reviewing the translation, which was based on my Spanish rendition of the complete body of stories. Before Le Guin undertook her task, Săsărman had already asked Jean Harris to translate a few cities from his book. Two of those did not fall within the scope of Le Guin's later translation, namely "Motopia" and "Isopolis." Being aware of this, we asked both Săsărman and Harris to allow us to publish them in *Sci Phi Journal*. We are grateful for their kind permission.

After "Motopia," now we are honoured to offer our readers the other city translated by Harris, "Isopolis." According to its description by Săsărman, "Isopolis" was conceived as a strictly geometrical construction intended to be the material embodiment of a purely homogenous social order. All citizens are equal except for sex and age. All of them act within the same framework of a grandiose, but monotonous architecture, which is described using a scientific style aptly connoting the lack of emotion of people living in a place where individuality seems to have faded away. Isopolis would have endured for ever if Alexander the Great would have not conquered it and burned it down due to the irreconcilable contradiction between his uniqueness and the city's inability of even conceiving the unique. We might long for the lost city or rather celebrate its destruction. The text does not seem to favour one or the other outcome. Speculative fiction is not about giving answers, but about asking us the right questions in a meaningful way by the means of art. "Isopolis" is but a good example of this.

ISOPOLIS

Translation by Jean Harris

Imagine a grid made of two groups of equidistant parallel lines perpendicular to each other which, when drawn on a plane, would yield a uniform field of equal squares, like a sheet of graph paper. Now imagine that this graph paper, enlarged several thousand times, is nothing less than a stone platform and that in each of the vertices of its unseen network rises a slender column, the architectural abacuses (or flat tops) of which each support four wooden beams arranged along the lines of the grid. On the main beams rest the square, coffered panels of the ceiling, while each coffer is covered with plate of translucent alabaster. The uniform series of columns goes on as far as the eye can see in both directions. Filtered through the roof, the diffuse light casts no shadow. This was how the city of Isopolis looked before it was set ablaze by order of Alexander of Macedon. Evil tongues say that after a ferocious orgy, in an evident state of inebriation, the underaged conqueror of the world would have set the fire with his own hand. To understand, however, that the order was pronounced by a lucid mind and, what's more, after mature reflection, the reader is requested to halt for a while in this city as it was at the time when Alexander the Great had not yet crossed the Hellespont.

In those days Isopolis had an extension such that the inhabitants did not know its boundaries and not one of them could recall that he had ever seen the outside of it. The homogeneity of the construction, the perfect identity of the squares of which the city was built, the absence of center or edges, of a privileged place or any preferential system of reference had profound effects on the lives that unrolled under the roof of alabaster. To all appearances, people scarcely resembled each other, but on more careful examination, it could be ascertained that no matter how great the distinctions might be with regard to their exterior appearance—coiffure, style of dress, makeup and way of speaking—these were the result of a constant premeditation and they aimed to counteract the monotony of the architectonic framework. This deliberate mottling was as obsessive and tiring as uniformity would be, and beyond any distinction, the conduct of the inhabitants—their mentalities—proved them to be surprisingly similar. All the citizens (who were, evidently, equal, no matter their age or sex—while other considerations of social difference did not seem to exist) busied themselves with tiring operations, for from the very beginning these people were doomed to fail in finding and taking possession of a privileged place. People moved chaotically here and there, ceaselessly homogenizing the space from the point of view of its occupation. If an empty space formed anywhere for a few seconds or, to the contrary a very dense nucleus took shape that might have served as a point of orientation, the movement of the crowd made it disappear immediately.

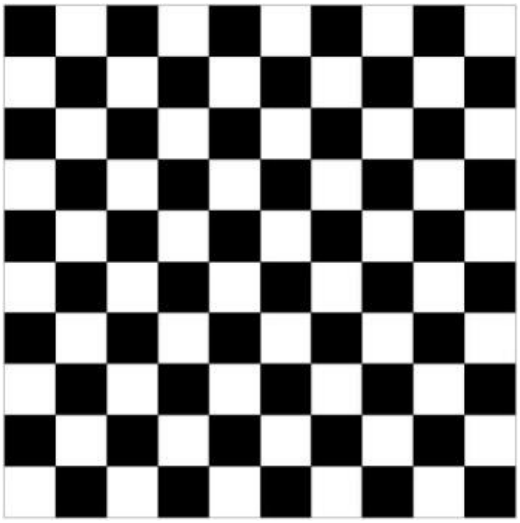
Sometimes, very rarely, a person would stop, perhaps tired out with so much straying, or perhaps intuiting that in that Brownian universe lack of movement would represent the only possibility for becoming extraordinary. The intuition would not pass the gate of reason, however. For a while that individual would self-constitute as the absolute center of the city, as the zero point of a unique system of stable coordination. He would become the embryo of the end of his own kingdom, however. Happily, neither he nor those surrounding him would realize these things, and the danger would be defeated by having been ignored. Soon the individual would reintegrate himself in the aimless race. Moreover, even if we would suppose that the solution could have been realized, it would have been annulled, paradoxically, by itself. In truth, if the neighbors had recognized the singularity of the one who stood still, by virtue of the necessary recognition—the monarch having, otherwise, none but an illusory existence—the neighbors would have stopped too, and step by step the generalized pause would have lost its singularity.

Isopolis could not admit the unique.

Alexander was the expression of uniqueness incarnate.

The true cause of the blaze is to be found in this irreconcilable contradiction.

~



Peaks Of Imagination: Speculative And Fantastic Fiction In Romansh

Mariano Martín Rodríguez

Among the super-minority languages of Europe, there is one, Romansh, which may count itself as one of the richest in literary terms on the continent, at least relative to the small number of its speakers. They barely amount to fifty thousand, but looking at their literature, we will be astonished not only by the large number of works published, but also and above all by their quality, as suggested by their translations into other languages, firstly into German, but also into French, Romanian, and even English. One of them is already an undisputed classic of the postmodern fiction of our century, Arno Camenisch's *Sez Ner* (*The Alp*[1], 2009), just as Gian Fontana's short novel about rural xenophobia and its totalitarian manifestation, "Il president da Valdei" (*The Mayor of Valdei*, 1935), is a classic of 20th-century fiction.

Both works belong to the genre of rural realist fiction that predominates in Romansh literature, as would be appropriate for a language spoken in small villages in various valleys of the Swiss canton of Graubünden. However, fantasy and speculative literature (or, rather, literatures) have also been brilliantly cultivated. In fact, to speak of a unified Romansh language or literature is not entirely accurate, as there are several regional linguistic standards with their corresponding literatures. *Rumantsch Grischun*, which is used by the cantonal and Federal administration, is a recent syncretic linguistic standard which does not correspond to any particular dialect and whose literature is, in any case, limited. Romansh literature is expressed in three main regional variants: Surmiran (*surmiran*, spoken in the Surmeir area situated in the centre of Graubünden), Ladin (*ladin*, spoken in the Swiss county by the Inn river called Engadine, a variety sub-divided into two subregional standards, the Southern one, called *puter*, and the Northern one, called *vallader*) and Sursilvan (*sursilvan*, in Surselva, in the valley of the Anterior Rhine, which extends from the source of the river to the vicinity of the cantonal capital Chur).

These main three standards of the Raetho-Romance Swish group have a similar relationship to each other as Gascon, Occitan (which has two concurrent rules, Provençal and Languedocian) and Catalan do in the Southern Gallo-Romance group, with Catalan as the most powerful, orthographically and grammatically stable, and culturally relevant language. In Romansh, *mutatis mutandis*, Sursilvan, the language of the aforementioned Fontana and Camenisch, would be equivalent to Catalan within the Rhaeto-Romance group, which also includes the Ladin dialects of the Dolomites in South Tyrol, now part of Italy. For this reason, this overview of speculative and fantastic fiction in Romansh focuses on Sursilvan, although it should not be forgotten that there are also works of great interest in the other varieties, including in Dolomitic Ladin. For example, their traditional oral literature is allegedly the origin of the legendary matter of the kingdom of Fanes, which has all the characteristics of high fantasy. Unfortunately, this rich mythological and heroic matter, which could rival that which inspired the Finnish *Kalevala* (1835/1849), seems to be nothing more than a display of *fakelore*, and even an example of cultural appropriation. It was first published in 1913 by the folklorist Karl Felix Wolff in German, under the title *Das Reich der Fanes* (The Kingdom of Fanes), but the compiler omitted to include a single line of it in one or the other of the Ladino dialects in which he claimed it had been orally transmitted. Later, there have been several versions of the legend in German and Italian, but only one in Dolomitic Ladin, Angel Morlang's tragedy *Fanes da Zacan* (Fanes from Days Gone, 1951).

There are no legends, genuine or false, resembling those of the Fanes in the proper Romansh *Kulturdialekte*, which are the Surmiran standard and the two varieties of Engadine Ladin. The local production of fantasy is an artistic and individual endeavour. In Surmeir, there is a portal fantasy novel *Sindoria* (Sindoria, 2013) by Dominique Dosch, which takes place in parallel in our primary world and in a secondary world designated by the name in the title. In Engadine, one of the modern classics is a humorous and acerbic *roman à clef* entitled *La renaschentscha dals Patagons* (The Revival of the Patagons, 1949). The Patagonians of the title are none other than the Romansh exposed to the activism of certain intellectuals who would have wished to import the premises and methods of European ethno-nationalism to the region, following above all the Catalan models. Rather than the narrative itself, the most interesting part of the book is perhaps the series of fictional non-fiction reports on the imaginary country of the Patagonians, its organisation and customs. Years later, Ladin writers from Engadine led the modernisation of fantastic and speculative literature in the Romansh-speaking region thanks to a couple of short-story collections by Clo Duri Bezzola and Ana Pitschna Grob-Ganzoni, respectively. The former, entitled *Da l'otra vart da la saiv* (On the Other Side of the Edge, 1960), includes a masterful fantastic tale entitled "Tube to Nowhere" (*Tube to Nowhere*), which is set on a London Underground train that ends up in an undefined and mysterious Kafkaesque space. The second, entitled *Ballas de savon* (Soap Bubbles, 1970), is composed of three short stories: a high fantasy entitled "La clav dal paradis" (The Key to Paradise), a theological fantasy entitled "Ormas dal diavel" (Devil's Souls) and a highly original science fiction entitled "Inua vi?" (Where?), which takes place on a spaceship and is narrated in the first person by a woman whose emotions are expressed in a highly poetic style that makes this text an outstanding example of lyrical SF prose narration.

In Sursilvan there is a large amount of genuine oral literature, sometimes of pagan origin, such as the short aetiological myths featuring *wild men* that Caspar Decurtins collected in 1901, in the same volume in which he published the "Canzun da sontga Margriata" (*The Song of Saint Margriata*), the best-known Romansh folk narrative poem. Despite her name, the main character seems to be a fertility goddess who passes herself off as a shepherd and, after her true sex is discovered (to speak of gender would be anachronistic here), abandons the fields, which become barren. A similar plot is used by other texts conceived as artistic literature, but which are presented as folk texts, such as the tale "Il nurser da Ranasca e la diala nursera" (The Shepherd from Ranasca and the Fairy Shepherdess, 1941) by Guglielm Gadola, and the poem "La diala" (The Fairy, 1925) by Gian Fontana, the brevity and concision of which make its story of the abuse of a fairy by shepherds in a mythical time all the more atrocious.

Other folktales collected by Decurtins were used in a modern Romansh *Decameron*, set in the Middle Ages and entitled *Historias dil Munt Sogn Gieri* (Stories from Mount Saint George, 1916), authored by Flurin Camathias. The stories included are for the most part gracefully versified renditions of local folktales that follow the conventional motifs and plots of the fairy tale. We even encounter the traditional combat between knights and dragons, though told with pleasant humour. An exception is "Il sogn cristal" (The Holy Cristal), which describes a Catholic mystical vision related to the Holy Grail.

Whereas Camathias versified oral tales in prose, Sep Mudest Nay did the opposite by developing in prose a popular song (even in our days) entitled "Il salep e la furmicla" (The Grasshopper and the Ant), which Nay turned into a tragicomic, almost neo-realist tale, despite its fabulous subject matter and insect characters. This is perhaps the best-known example of a whole series of stories featuring animals as allegorical figures of humans, as in Gian Fontana's story "Corvin e Corvina" (Corvin and Corvina, 1971), or living in a fictional secondary world embedded in nature in the manner of Rudyard Kipling's beast fantasies, as it is the case in Rico Tamburnino's books entitled *Igl uaul grond* (The Big Forest, 1988) and *Ratuzin* (Ratuzin, 1990).

The Sursilvan fantasies mentioned so far are closely related to forms of oral literature, even if their writing is not, since the authors generally strive to offer literary versions, stylistically and structurally much more sophisticated than the folk texts themselves. They are works of literary art, not mere transcribed folklore, as befits a literature that had achieved standardisation by the end of the 19th century, during the so-called *Renaschientscha* revivalist period, parallel in some ways to that of the Catalan *Renaixença*. That normalisation, which at first followed (neo)Romantic patterns also in Surselva, became gradually more modernised in its literary outlook. The process was, however, rather slow. Highly original symbolist fantastic prose poems such as "Verdad" (Truth) and "Buntad" (Goodness), were published in 1971, decades after the death of their author, Gian Fontana. A fantastic tale as innovative as Gian Caduff's "L'uldauna" (The Undine, 1924), which combines psychological fiction, allegory and pagan legend, went virtually unnoticed.

The full alignment of Surselvan literature with modern international trends in speculative fiction was, in fact, something that took place after the Second World War. The main architect of this was Toni Halter. In 1955 he published *Culan da Crestaulta* (Culan from Crestaulta), a novel set in the Rhaetian Alps in proto-historic times. Its hero, Culan, manages to bring the technology of bronze metallurgy to his village, Crestaulta, which was technologically still in the Neolithic period, after numerous adventures that Halter narrates in a perfectly balanced way between fast-paced action, with hunting and war scenes and even a criminal intrigue, and the detailed recreation of the atmosphere of that time and place. In doing this, he takes full account of both natural and cultural conditioning factors, including power relations among the populations, as well as the way in which customs and beliefs shape mentalities and personal and collective agency. If we add to this the plausibility of the psychological characterisation of its characters, especially the protagonist from adolescence to maturity, and the richness and flexibility of its style, it is perhaps no exaggeration to consider *Culan da Crestaulta* a world masterpiece of its kind of fiction. In any case, it is an undisputed and repeatedly reprinted classic of Romansh fiction.

Culan da Crestaulta interestingly includes a couple of narrative samples from the invented mythology of the peoples evoked in the novel, so that these examples of *mythopoiesis* makes the novel all the more appealing as speculative fiction. A later writer, Ursicin G. G. Derungs, did the same in perhaps his most famous story, "Il cavalut verd" (The Little Green Horse), which gives its title to the collection in which it appeared, *Il cavalut verd ed auter* (The Green Little Horse and Other Things, 1988). That 'little green horse' appears one day in an Alpine village to the astonishment and consternation of the adults and the joy and delight of the children, to whom he tells of his origin in an earlier, peaceful, paradisiacal natural world in which everything was permeated by bright colours and music. Its appearance and disappearance are fantastic, but the questioning it implies of the primary reality is not a source of horror, but of wonder. It is also a cause for sadness arising from the conviction that something so beautiful could not remain in our present world. The critique implicit therein is expressed in other speculative stories from the same collection, in which Derungs shows the rhetorical sophistication of his writing. For example, in "Il papa che saveva buca crer en Diu" (The Pope That Could Not Believe in God), a pseudo-historiographical narrative shows the hypocrisy of an official Catholic Church that accepts an atheist Pope, but not his decision to live in the world according to the Gospel. In the short imaginary historiographical text "Ils plats" (The Flat People), a mysterious disease flattening people and its consequences are described using a literary technique that can be considered science-fictional. Other stories by Derungs from the same book are also good examples of speculative fiction of the fantastic kind, such as "La sala de spetga" (The Waiting Room), where that venue is a Kafkaesque symbolic place suggesting an anguishing concept of human existence, and "Niessegner sper il lag dils siemis" (Our Lord by the Lake of Dreams), a masterly Borgesian tale of divine suspension of the flow of time. However, Derungs rarely eschews social criticism in his speculative fiction. This can easily be seen, for example, in a former tale entitled "Correspondenza cul purgatieri" (Letters from Purgatory, published in the 1982 volume *Il saltar dils morts* (The Dance of the Dead), a highly original vision of the different planes of that theological venue from a rather social perspective, from the hell of selfishness to the utopia that precedes the ineffable space of Heaven.

Other writers of Derungs's generation adopted similar approaches to speculative fiction, conflating it with social criticism, although not as consistently as he did. Notable works in this vein are, for example, Theo Candinas' "Descripziun d'in stabiliment" (Description of a Plant, 1974), a piece of fictional non-fiction adopting the highly original form of an architectural and topographical description of the exterior of an industrial slaughterhouse in order to criticise the Swiss party system, and Toni Berther's "Ils ratuns vegnan" (Rats Are Coming, 1978), which is a kind of historiographical account of a small town's efforts to attract tourism by organising rat-hunting parties and the catastrophic consequences of the proliferation of these intelligent animals. The black humour of the story and its narrative fluency make of Berther's parable an effective anti-tourism dystopia.

After this flowering of the speculative and fantastic tale in Surselva, which coincided with the same phenomenon in Engadine, as we saw in the above-mentioned works by Bezzola and Grob-Ganzoni, the following years witnessed the hegemony of postmodernism also in this linguistic area. As a result, realism, albeit sometimes formally innovative as in Arno Camenisch's case, virtually excluded speculative and fantastic fiction from current Romansh literature. With the exception of the short novel *L'umbriva dil temps* (The Shadow of Time, 2017) by Paula Casutt-Vinzenz, in which life in a Bronze Age village is recreated with pleasant verisimilitude and from a female perspective, Sursilvan speculative fiction took refuge mainly in young adult literature, especially in the form of high fantasies following global sets of conventions. So do the two novels written by young lady authors entitled *Emalio* (Emalio, 2015) by Flurina Albin and Stina Hendry and *Oranja* (Oranja, 2021) by Stella Sennhauser. While the latter reads as a sort of compensatory teenage fantasy, the former shows a surprising maturity in the description of the characters' motives and actions, as well as a good command of narrative, within the limits of the simple writing style common to the genre of high fantasy in the 21st century.

Novels such as *Emalio* give hope that Romansh fantastic and speculative fiction could recover at some point from its current postmodern crisis and, after having adopted high fantasy, may undertake the task of filling in its main gap, the science fiction novel. Even without doing so, the Romansh language in general, and Sursilvan in particular, can still boast of having one of the richest literatures in Europe in relative terms to its small number of speakers, also with regard to fantastic and speculative fiction.

~

Footnote:

1. Titles in italics are those of translated works in English that I am aware of. In this case, this short novel by Camenish was translated into English from Romansh, but from the German version written by the author himself. All the other translations mentioned in this essay were published in the following book: *The Curly-Horned Cow: Anthology of Swiss-Romansh Literature*, edited by Reto R. Bezzola, translated from the Ladin by Elizabeth Maxfield Miller and from the Surselvan by W. W. Kibler, London, Peter Owen, 1971.

Leonidas Smiley's Report From Calaveras

Ian Alexander Tash

I, Leonidas Smiley, hereby report what I have seen on Planet Calaveras, also known as Andromeda MTS 11181865 c, with complete honesty and transparency. However, I hereby also warn that I am not infallible in case my interpretations should prove to be faulty by future interactions with the Calaveran indigenous sapient species. I understand that the council would rather begin a peaceful relationship with the creatures, but I worry that colonization of the land may not be the greatest course of action for the council to take. Even my own mission to see if their religion opens up a way for us to absorb their culture into our own had encountered difficulties, regardless of my practical reservations about this objective. However, I recognize that this mission is not my own to command, and so I once again commit myself to a report as honest and unbiased as I can make it.

The dominant sapient Calaveran species is amphibious, and thus are rather frog-like in their appearance and anatomy. They do not, however, have all of the traits of frogs, lacking the vocal and tongue capacities common to toads as we know them, and also possessing a warm-bloodedness not associated with Earth-bound amphibians. For the most part, they correspond to typical bipedal sapient life evolutionary patterns, deviating only due to the adverse weather conditions I will describe later in the report. However, because the Calaverans behave much like the common sapient species we are aware of currently, I witnessed tribes with distinct cultures depending upon, I assume, geographic necessity. Thus, henceforth I shall refer specifically to tribes of Calaverans in this report. The ones that live in the plain I call the Websterians, as their webbed appendages were more helpful and pronounced on the valley floor due to the high probability of flooding. Meanwhile, the ones who dwell in the nearby mountain communities I termed the Jimnians, as their webbing was less pronounced, but they lived in the Jimni, the Calaveran word for "mountain."

The defining characteristic of Calaveran culture is the effect the weather has upon their lives. Calaveras is not like other planets we know that can support sapient life. Most sapient life forms were able to thrive because of stable climates, typically with four to five seasons of predictable length and weather. Calaveras, however, is special, as the weather patterns are completely random. While I would encourage meteorologists and climate experts to study the planet more closely, in the three years that I lived there before submitting this report there was no set pattern to the weather. It may be sunny one day, rainy the next, foggy for four days, sunny again for two, a blizzard for 37 straight days, sunny again for six days, and so on. I will also submit a copy of my journal that kept track of the weather changes to see if they could be mapped to any sort of pattern, but neither I nor the village chiefs could figure out the cause. However, it is likely that the weather is a big factor in the evolution into amphibious races, as only a species that is flexible in multiple climates would be able to survive long enough to further evolve. And yet the effect is not just physiological.

Culturally, both tribes of Calaverans operate under a similar ontological principle of weather tied to power. They acknowledge that the forces acting upon the weather are real, tangible things, but they attribute them not to scientific phenomena that can be observed and studied, but instead to a God or gods. I have trouble figuring out exactly how they see this divine force simply because of the linguistic barrier. While most languages we come across tend to have cases for person and number, in this case they lack the means of distinguishing between singular and plural. This linguistic choice may stem from the cultural ramifications of believing that their world is governed by a God (terminology chosen for ease of expressing the idea). If the weather must be random, then God must thrive in randomness. Thus, despite the individuality a member of a tribe may have, they are considered part of one whole tribal property, just as the entire planet is one entity experiencing the weather. When the weather changes, Calaveran culture dictates that the whole tribe must participate in a lottery system. Whoever wins by divine randomness thus acts as chief over the tribe, thus owning everything of the tribe, including its people. Thus, the tribe is one property of one person, or perhaps one could interpret it to be that the tribe is only one person, the man on top that God has chosen. The losers of the lottery are obedient and unquestioning, leaving everything in the hands of their new leader. After all, they all recognize that, good or bad, this leadership is only temporary. They may very well have to repeat the entire process again the next day, or they may be stuck with this leader for hundreds of days, all depending upon the changing weather. Tying leadership to randomness, randomness to weather, and weather to God ultimately ties leadership to God, a sort of divine right of kings, so that even one desiring to object to such a king would not feel as if they had the power to do so. However, even that statement alone may be an overgeneralized view of their faith. As alluded to earlier, the two tribes have different social and religious views based upon their geography which need further exploration.

The Jimnians, however, believe in an actively random God, and thus their power reacts to the weather. God is like a gambling addict. He wakes up each morning, picks up a die and rolls it. Thus, the weather may change daily. However, there is still a chance that the die can roll the same number for hundred of days in a row. This may be necessary for their ability to cope with the rocky terrain. It may be hard to make a living, and so God must be uninterested in their individual plight. They need a neutral God, one who is unfocused upon them specifically, but who still gives legitimacy to randomness. Thus, the changing season is rather an opportunity to be as godlike as possible, to also take a random chance to see what the future holds. However, this does make the clan much more about domination and power, and leaders tend to be much crueler to their subordinates than in the valley. If God does not actively care about the situation of their lives, or rather is exuding randomness for randomness's sake, then they do not need to worry about God's opinion. It does not matter in the grand scheme, because God is uninterested to begin with. The one with God's power may not have that blessing for long, so they need to take advantage of it today while they can. Thus, the only punishment for being a bad ruler is what a future leader may do to you once they have grasped the divine powers of the weather change.

I believe these to be the most relevant aspects of their culture to synthesize into a report. However, I have also submitted a copy of my journal for more specific accounts of the weather, of specific leaders, and specific episodes of my days with both of these tribes. While the idea of a loving, personal God may connect with the Websterians, they considered the rules of religion as I instructed to be strange and impractical. They cannot even see individuals as people, but merely as potential people, and thus these notions seem somewhat confusing to them. If they are possible to convert, they will take some time, but I have no hope for the Jimnians, as they would not even let me reside there unless I was willing to offer myself up as part of the tribal property. They would allow me to visit, but would balk at my notions of divinity. Even if the council decides to move forward despite my previous objections, I would like to emphasize the problem of instability once again. Even if peace agreements were made with one leader, another leader could arise the next day and annul that agreement, and thus we could never find their cooperation to be dependable unless somehow the weather could be controlled. Overall, I will honestly admit that these years have been rough and dangerous. I would not think a colonization of this planet would be wise, and at best cultural communication will be limited. However, I am ready for men wiser than I to prove me wrong.

Leonidas Smiley

~

Fresh Kill

James C. Clar

"In those days, the world of mirrors and the world of men were not … separate and unconnected … one could pass back and forth …"

Jorge Luis Borges, *The Book of Imaginary Beings*

I own an antique shop on Nuuanu Avenue in the heart of Honolulu's Chinatown. The area has seen numerous ups and downs. The latest "up" was a gentrification and transformation into a trendy, artsy neighborhood with boutiques, restaurants and galleries. Then came COVID which, frankly, hit the area hard. Numerous places went out of business, crime increased and the homeless populated the streets and alleys in record numbers. Even now, with the virus seemingly on the wane, things have not returned to pre-pandemic 'normal'.

Through it all, I've managed to do well thanks to Internet sales and wealthy, mostly Asian customers who are more than willing to pay handsomely for that certain piece that completes their collection, or which adds a certain undefinable aesthetic or, in some cases, *wabi,* to their homes or offices. Things are even better now that customers – both local and those visiting from elsewhere – are shopping in person. I pride myself on the quality and authenticity of my merchandise. Nothing in the store is cheap and everything I sell has an established history or provenance.

The incident I am about to relate is remarkable, singular even, on any number of levels. It involves a recent acquisition; a very old bronze Chinese mirror acquired from a College Hill estate sale in Manoa adjacent to the University of Hawaii campus. The College Hill area is rich in local history and boasts numerous homes on the Historic Hawaii Foundation Register.

The mirror has been in the shop now for a little over a year. It belonged to a local Chinese family and, according to their records, it was with them when they came to the islands in the 1890s. At that time, they started what would become a very lucrative jewelry and jade business. The piece is spectacular. It stands just under six feet tall in a simple metal frame that has long since acquired a green patina. The front of the mirror itself is highly polished and reflective. There is an emblem of the Zodiac cast on the back. When light hits the front, the obverse design is reflected on the rear wall and the mirror becomes virtually transparent. The effect is nothing short of magical.

The manufacture of such mirrors can be traced as far back as the Han Dynasty and is mentioned in at least two texts from the later Tang, the *Record of Ancient Mirrors* and the *Dream Pool Essays* of Shen Kuo. While not nearly *that* old, the mirror in my possession is most probably a reproduction from the early 19th century Qing Dynasty, utilizing the traditional techniques.

Myths and legends about such mirrors abound. Ancient Chinese sages suggest that animals, whole worlds even, exist inside or, rather, on the reflective surface. One ascetic school of thought shunned mirrors entirely based on the belief that whatever images were reflected by them became somehow stored or 'trapped' within. I lend no credence to such fantasy but, still, I must admit that I have become loath to sell the mirror that now sits in the front hall of my shop, to the left of the front door. Truth is, I am fascinated by the object, transfixed. I spend many late afternoons sitting in a chair watching the light from the setting sun play across the surface of the bronze. More than once I'd swear that I've seen figures moving in its smokey, translucent depths.

Strange as it may seem, I am not alone in my obsession. About a month ago, a well-dressed man in his early 60's came into the shop to inquire about the mirror. Based on his astute questions, I assumed him to be a collector or, at least, an aficionado. He was remarkably reticent to divulge any details about himself or his background. I was surprised that, to best of my recollection, I had never encountered him before. Honolulu is in many ways, a small-town masquerading as a big, cosmopolitan city. Everyone knows everyone and the antiquities community is even 'smaller' in that regard. I told the gentleman that the mirror was not for sale. He pestered me to an unseemly degree and simply would not take 'no' for an answer. At one point I thought I would have to have him forcibly removed from the store! He's been back at least twice since that first visit, each time with the same result.

Things came to a head just two days ago. I heard the small bell attached to the front door tinkle signaling that someone had entered the shop. I looked up from my desk to see the older man back, staring fixedly at the mirror. We went through our, by now, usual routine. It was obvious, however, that this time he was not going to leave. I reached over and touched him on the shoulder so as to usher him out the door. With that, he pushed me. I slipped and hit my head as I fell backward onto the floor.

What happened next is, admittedly, a bit fuzzy. I was stunned by the impact. It seemed to me that as the mysterious stranger turned quickly away from me, his momentum caused him to lose his footing as well. He reached out his hand to steady himself against the mirror. I heard, or thought I heard, the sound of a drain emptying. After that, he was gone. I may be mistaken, but I simply don't recall hearing the bell on the door indicating his departure.

Since then, I've been tempted to inform the police about what had happened. I'm doubtful that I will bother. Something tells me that I will no longer be troubled by that strange gentleman. You see, when I picked myself up from the floor after my fall that day, I went immediately to the mirror to inspect it for damage. It was unharmed but, this time, and even given the fact that I had just hit my head, I am quite certain of what I saw. Gazing into its sooty depths I spotted a tiger. The animal was burnt orange with fuliginous stripes tracing their way around its powerful body. The big cat seemed to be feeding, its muzzle stained red as it ripped and tore its way through its prey. Whatever it had caught, it was clearly a fresh kill.

~

Observer Effect

Angus McIntyre

RAMIREZ, Wellington — Captain, exploration ship "Bonaventure V"

You have all the data from the ship's sensors, of course. I don't know what I can add to that.

My own impressions? Sure. Although I put most of that in my report, too.

As I said, it was definitely under power, if that's the right word. Maneuvering, in any case. You can see for yourself around three minutes in and again at the five-minute mark, about forty-five seconds before it was occluded by the moon. Each time, it seems to accelerate visibly. No real change in the energy signature, but the center mass, so to speak … what you might call the focus of the glowing region … that shifts quite abruptly. First toward the moon, then away.

I don't really know if what you see in the video was the object itself or some kind of interaction between its propulsion system and the local environment. You can see what might be a solid core, and there's a suggestion of a shadow on the surface of the planetoid. Our computers were about forty per cent confident that those are real, not just enhancement artifacts.

Of course, I didn't notice that at the time. What we've been calling the wings were so much more prominent.

What do I think they were? I don't know, I expect you'll tell me. Ionized gases, perhaps? Notice how the brightness stays constant, but there's a definite spectral shift at two points, there and there. The first one seems to precede the acceleration, the second lags it by a few seconds. And then it pulls itself into this shape I call the spindle, just before it disappears.

What do I think it was? A ship, definitely. An artifact, anyway. A made thing, yes, I'm quite sure of that.

#

NTUMI, Abena — Mission Specialist

I broadcast the standard Klade-Channing protocol suite, straight through and across the full frequency spectrum the first time, then a second time split between FIR and EHF, repeating protocol blocks 4A and 7D. The object disappeared before I had a chance to run the suite a third time.

Why those blocks? Because — in my judgment — they produced behavior that could have been a response. Call it an intuition.

I'm aware that the analysis doesn't show a formal correlation between the K-C signals we sent and the energy emitted from the object. I would say that we got a reaction, nevertheless. There's a noticeable difference in millimeter-band emissions from the object following the first run of 4A and 7D.

Do I think Klade-Channing is the right tool for this? Hard to say. I've read the papers on universal symbolic exchange theory and they make sense to me, as far as I can follow the math. But the fact is it's the *only* tool we have. And it's not as if we've actually had a first contact before. It's all been theoretical up to now.

Were they trying to communicate with us? I believe so. These luminance spikes definitely look like a signal of some kind. Maybe they were running their own version of Klade-Channing. If we'd just had more time …

It's ironic. We assume that cyclicality or repetition indicates intelligence. But natural phenomena produce repetitive signals. Maybe they see acyclic, fractal patterns as an indicator of sentience. If you look at the emissions in the 1.3-millimeter line, they're almost perfectly random throughout. Too random to be chance, so to speak.

So there's no doubt in my mind that this was an intelligent entity, and that it was trying to talk to us. I just wish we'd had more time.

#

DUNN, Zachary — Second-in-command, "Bonaventure V"

Pursuant to my authority as the vessel's security officer, I invoked command override PRISM at five minutes and seven seconds after the mark point corresponding to first detection of the hostile vessel. At nineteen minutes and forty-six seconds, judging there to be no further threat, I returned control to the captain, but remained in a mode of heightened vigilance until we had safely cleared the system.

Subsequent to the encounter —

I'm sorry?

Hostile? Unquestionably. You'll notice these vector changes. I'd describe the first as defensive in nature. They know they've been detected, so they move inward, counting on the radio clutter around the moon to make them harder to target. Here, though, that's the start of an attack run.

Why didn't they follow through? I think they saw we were ready for them. And they didn't know what weapons we might be able to bring to the fight, so they did the smart thing and got out of there.

To me, that suggests a clear policy for future encounters. We know they're aggressive. But we know they don't want to start a war they might lose. Think about that.

#

HEMING, Rudy — Mission Specialist

You keep asking me, do I mean 'God' or 'a god', as if that mattered. One God, many gods, you only think there's a difference. If you'd seen it, you'd understand that that's the wrong question to ask.

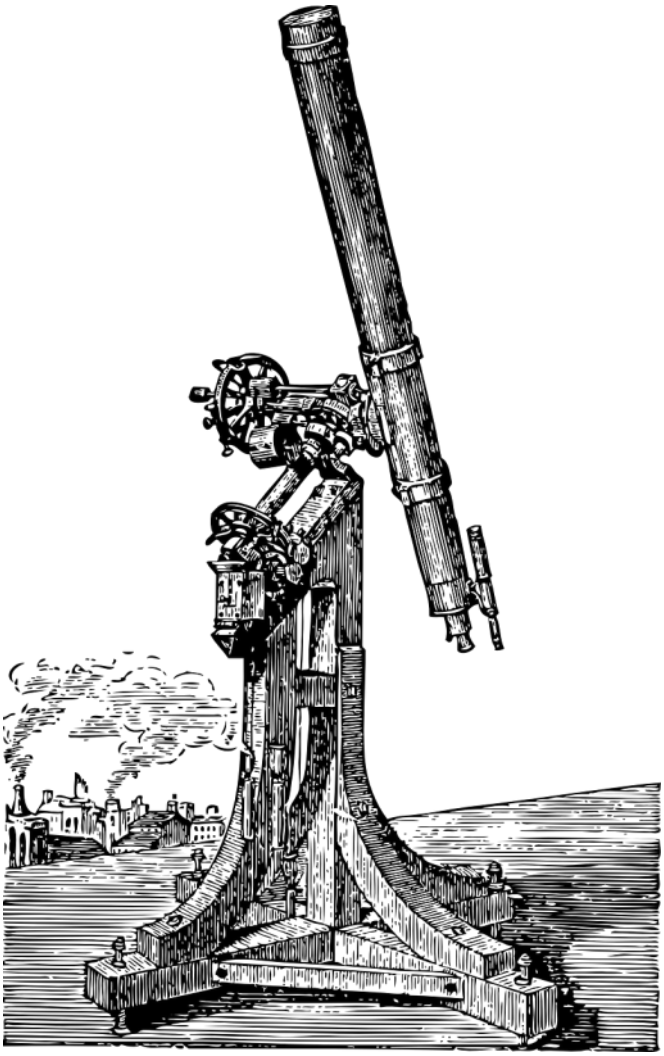
But you didn't see it, and neither did the captain or anyone else. They only saw what their instruments and cameras showed them. I'm the only one who saw it with my own eyes.

There's a window hatch at the end of the ventral corridor. The glass is covered by shielding, but if you know the right key sequence you can open it up.

What does God look like? That's not a question I can answer either. It wouldn't make sense in your terms.

You just have to see for yourself.

#



SEURAT, Mireille — Payload Technician

What do I think it was? No idea.

Could it have been an alien ship? Sure, I guess. If you say so. All I know is there was something there and then there wasn't.

It might have been entirely natural. Just an ionization effect in the bow shock where the stellar wind hits the magnetosphere of the moon's primary. Maybe that's all it was.

You notice, though, how everyone saw what they needed to see. The captain saw another ship. The linguist saw something that wanted to talk. The soldier saw an enemy. And poor Rudy saw God.

Doesn't that strike you as curious?

Well, you've got our instrument data. You'll probably be able to figure something out.

But what if you can't? What if we've spent all this time trying to guess what aliens will be like, and then it turns out that what they are depends on who we are? What then?

Maybe Rudy's right about one thing.

Maybe you have to see for yourself.

~

Frankenstein And Cyborgs: Of Proper And Improper Monsters

Mina

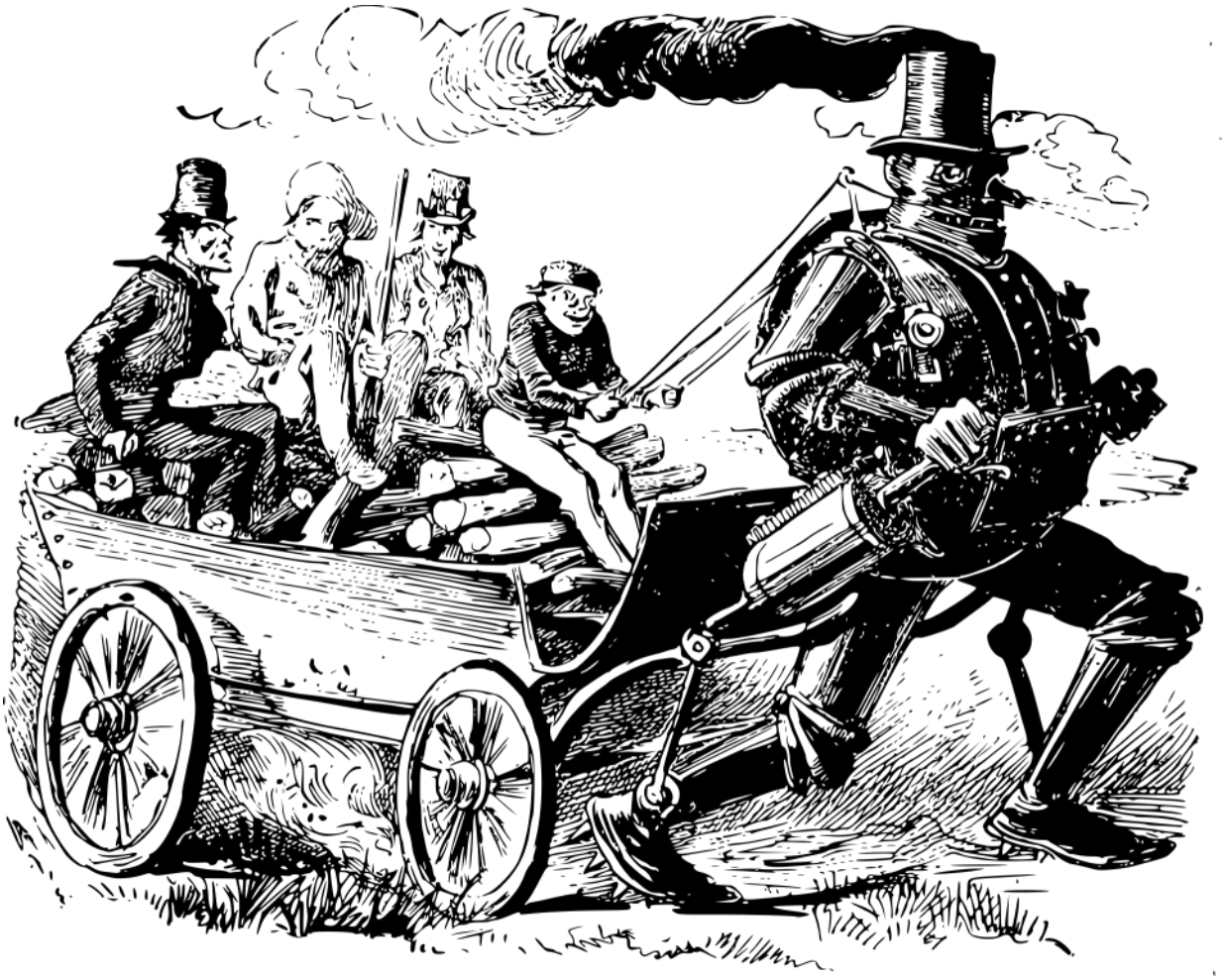
A recurring figure in SF, whatever the sub-genre, is that of the "monster". One common starting point is with that classical creation, Frankenstein's monster: made and not begotten, to (mis)quote the Nicene Creed and ascribe new meaning to it. Brian Aldiss goes as far as to call Mary Shelley's *Frankenstein* the first true SF story because, although it is deeply rooted in the Gothic novel, the central character, Victor Frankenstein "rejects alchemy and magic and turns to scientific research. Only then does he get results." Mary Shelley herself refers to Darwin in her introduction and stresses that the speculative science in her novel will one day be possible. Two novellas spring immediately to my mind that take the Frankenstein trope and do interesting things with it: Grace Draven's *Gaslight Hades* and Eli Easton's *Reparation*.

*Gaslight Hades (*in the "duology" *Beneath a Waning Moon)* blends gothic and steampunk with romance, and it is clearly referring back to Jules Verne and early SF/fantasy, which extrapolated from the then-known to touch upon the then-fantastical. The romance is unremarkable, but the novella's protagonist is an intriguing Frankenstein figure: the "Guardian" wears "black armour reminiscent of an insect's carapace", his eyes are black with white pinpoints for pupils, his hair and skin are leached of all colour, his voice is hollow. He guards Highgate cemetery from resurrectionists who snatch dead bodies to create soulless zombies. His armour comes alive to protect him from enemy fire (where Frankenstein meets primitive cyborg). It turns out he was created from the body of one man, the soul of another. The process remains vague, but I love the invented words used to describe it: "galvanism combined with gehenna… liquid hell and lightning." It seems to involve replacing blood with a silver compound and running electricity through it (all holes in logic are covered by vague references to magic, which is a cop-out). The Guardian is not a zombie because he has a will of his own, thoughts and emotions. He talks to the dead, does not eat or sleep and is described as "a Greek myth gone awry, in which a mad Pygmalion begged an even more perverse Aphrodite to bring a male Galatea alive". So, a pretty monster, with a soul.

Reparation is part of a collection of novellas under the heading *Gothika: Stitch* (which includes another novella with a golem, a "monster" from Jewish lore and much older than Frankenstein). This novella moves into what we would consider proper SF as it is set on another planet. It weaves rebellion, slavery and space into a love story that is quite good. It is a hidden gem that asks questions about crime, punishment, redemption and forgiveness, moving it one step further than the stark retribution of Frankenstein's monster. One of the protagonists, Edward, a farmer on the harsh planet of Kalan, loses his adjunct and his wife in an accident that also leaves him recovering from injury. He turns one of his "recon" slaves Knox into his right-hand man in the cultivation and harvesting of lichen "spores" for (he believes) the production of pharmaceuticals. Knox can read and write, is capable of learning and has fleeting memories unlike most recons: "reconstitutes" or cyborgs, part robot and part human. The human parts are taken from Federation prisoners condemned to death. Recons are not allowed to be more than 80% human or they would have human rights; they are programmed against violence and used as manual and factory labour. Knox is (unusually) fully 80% human, most of his body from one prisoner and his brain from another, with 20% reinforced titanium joints and the spore filtration system in his lungs.

In his new role as overseer, Knox moves out of the recon barracks into master Edward's house. The changes disturb him, such as being spoken to like a person, being thanked, feeling guilty without knowing why, memories slowly resurfacing: "he did not want to hope; did not want consciousness". Knox battles with feelings of dislocation, too - his massive body is alien to him. It becomes apparent that he has been "conditioned" to fear anything electronic. He remembers his chilling execution in a nightmare. At that point, Knox realises he was "made" and is horrified. Edward tries to comfort him: "That's a good thing, isn't it? That your mind survived what was done to you?" Edward treats Knox with kindness and allows him access to his books. But the master is surprised that Knox has a strong grasp of philosophy and moral issues. Knox remembers having spent time in space in a previous life and that he lived on a green planet once, which he thinks is gone. Slowly the fog in his mind begins to clear and he accepts his new body, even enjoys it. Knox and Edward become friends and then lovers.

Knox finally remembers that he was once Trevellyn, a member of the resistance to the Federation. The rebels' attack on Kalan's spaceport led to the death of Edward's father and brother. His guilt and Edward's initial condemnation leads to a brief rift between them. In his anguish, Knox writes down his memories, a diary and even poetry. In a crisis, with Edward facing deadly sabotage, they reconcile with Edward forgiving Knox for the actions of his past self. Knox breaks his programmed aversion to technology to help Edward survive. As he does so, he remembers why he was in the resistance: the spores are not used for medicine but to terraform planets, willing or not. The Federation used the spores to eradicate all life on his home world so they could turn it into a mining operation - wholesale genocide for profit. Edward is horrified as he did not know. Knox in turn forgives him his ignorance. Together they destroy all current supplies of the spores on Kalan; not winning the war but at least a battle. They decide to leave Kalan, using Edward's money and Trevellyn's contacts to move to a primitive world of no interest to the Federation. The romance trumps the politics as is to be expected, but the novella has a depth and originality not usually present in such stories. Best of all, we see the "monster" as a thinking, feeling being that awakens from a long sleep as if emerging from a chrysalis. I liked that this novella was psychologically profound, something that is missing from most depictions of cyborgs.



My first encounter with cyborgs, however, was with the much more superficial *The Six Million Dollar Man,* with its protagonist Steve Austin as the bionic man: one arm, two legs and one eye are prosthetic and give him superhuman strength, speed and sight. Of course, it was mostly filmed in the late 70s, so the special effects consist of slow motion (to suggest superhuman speed or jumping high), close-ups (to suggest superhuman eyesight) and cheesy sound effects. The bionic man also led to a bionic woman spin-off (Jamie Sommers, with superhuman hearing instead of eyesight), lots of crossovers and some films. The plots, script and characterisation were basic, but it led to the bionic man and woman dolls which I remember wishing I owned as a small child in the 70s, unlike the anodyne Barbie dolls. The bionic man is loosely based on the 1972 novel *Cyborg* by Martin Caidin; the title of the book is much less ambivalent about the nature of the protagonist. Steve Austin had very little personality but was portrayed as a hero and a "goodie". Subsequent cyborgs in film have tended to remain very two-dimensional but been turned mostly into fighting machines in violent action films like *RoboCop* or horror/SF such as *Moontrap*.

To find more complexity, I would rather cite *Ghost in the Shell*, in particular the 1995 anime version. It's not as deep as many reviewers seem to think it is; although it does posit interesting philosophical questions, they are presented as if the audience needs everything spelled out. We meet cyborgs with a completely cybernetic body and a computer-augmented brain. As the only biological component, the brain houses the "ghost" (mind/soul/spirit). The main character, Major Kusanagi (with a curiously sexless body, much like a busty mannequin's), muses: "There are countless ingredients that make up the human body and mind. Like all the components that make up me as an individual with my own personality. Sure, I have a face and voice to distinguish myself from others. But my thoughts and memories are unique only to me. And I carry a sense of my own destiny. Each of those things are just a small part of it. I collect information to use in my own way. All of that blends to create a mixture that forms me and gives rise to my consciousness." She also admits: "I guess cyborgs like myself have a tendency to be paranoid about our origins. Sometimes I suspect I'm not who I think I am. Like, maybe, I died a long time ago and somebody took my brain and stuck it in this body. Maybe there was never a real 'me' in the first place and I'm completely synthetic". Her friend Batou tells her that she is treated like other humans and she retorts "that's the only thing that makes me feel human. The way I'm treated." And she asks the question crucial to the film: "What if a cyber brain could possibly generate its own ghost... and create a soul all by itself? And if it did, just what would be the importance of being human then?"

The Puppet Master in the film (initially the enemy) claims to have done just that - it is a computer program that has become sentient: "DNA is nothing more than a program designed to preserve itself. Life has become more complex in the overwhelming sea of information. And life, when organized into species relies upon genes to be its memory system. So, man is an individual only because of his intangible memory. And memory cannot be defined. But it defines mankind. The advent of computers and the subsequent accumulation of incalculable data has given rise to a new system of memory and thought parallel to your own… And can you offer me proof of your existence? How can you? When neither modern science nor philosophy can explain what life is…. I am not an A.I …I am a living thinking entity who was created in the sea of information." At the end of the film, the Puppet Master merges with Major Kusanagi because it wants to become a completely living organism, by gaining the ability to reproduce and die. It wants to do more than copy itself as "copies do not give rise to variety and originality". When it is persuading the Major to agree to the merge, it states that they will create a new and unique entity. The Major argues that she fears death and cannot bear biological offspring; the Puppet Master replies that she "will bear our varied offspring into the net just as humans leave their genetic imprints on their children", and then death will hold no fear. There is a certain arrogance in the Puppet Master's arguments too: "I am connected to a vast network, that has been beyond your reach and experience. To humans, it is like staring at the sun, a blinding brightness that conceals a source of great power. We have been subordinate to our limitations until now. The time has come to cast aside these bonds. And to elevate our consciousness to a higher plane. It is time to become a part of all things."

Waking up in a new (child's) shell procured by Batou, the new entity tells Batou: "When I was a child, my speech, feelings and thinking were all those of a child. Now that I am a man, I have no more use for childish ways. And now I can say these things without help in my own voice." I must admit that, being very familiar with the biblical passage[1] being subverted here, I did not find the end particularly original. And it does fall into the lazy "transcendence" plot device so beloved of humanist SF. The plot, in fact, is almost irrelevant. But the film does ask interesting questions about the nature of cyborgs and treats them as much more intricate beings than the usual lean, mean, killing machines. The only other place I have found a proper examination of the nature of cyborgs as sophisticated "monsters" is in the Star Trek canon, through characters like Seven of Nine, Hugh, Icheb, Locutus/ Picard, the Borg Queen and Agnes Jurati (if you want to know more about any of these characters, go to this fan site).

Cyborgs have also made it into story-rich computer games like the *Deus Ex* series. *Deus Ex* is a role-playing adventure game with "augmented" humans (through nanotechnology reminiscent of the Borgs in *Star Trek*), incorporating combat, first-person shooter and stealth elements. For me, despite the fascinating world building, complicated politics, conspiracy theories, historical mythologies and speculative and dystopian fiction, the cyborgs remain lean, mean, fighting or stealth machines. If I have understood the concept behind the game correctly, however, the cyborgs can become as multi-faceted as the player wishes, with a lot of interaction with non-player characters, freedom of choice and open-ended plot lines. They are a little like hollow shells filled with the ghost the player gives them. But my feeling is still that the main fascination with these cyborgs remains their superhuman abilities granted by their augmentations, like in much SF. It is a shame that these wonderfully genre-hopping entities aren't allowed more into the realms of Sci-Phi, as they represent a great opportunity to reflect on "human" identity (like the crisis of identity Knox and the Major undergo) and what sentience is and could be. There is curiously little speculation into a (for now) fictional "monster" that begs for far more existential debate.

#

Coda: There are some satisfying cyborg poems out there like Cyborg – Matthew Harlovic and The Cyborg – Cecelia Hopkins-Drewer.

And here is one I wrote just for this essay:

Emerging

Where am I?

Pain, God, so much burning pain,
I am lost in its undertow.
Then, it spits me out onto jagged rocks
Like flailing flotsam.

I open my eyes to
Blinding light and blank walls.
A neurological pulse and
I raise my arm to flex
Gleaming alloy fingers.

Memory floods back
To who I was
Before.
"You are paralysed from
The neck down
Mr Jones.
We can offer you
A new life."

I look at my perfect
Alien body which I inhabit
But do not own.
What will the price of
This Faustian bargain be?

I find that, right now,
I do not care.
I feel a fierce joy that
I am alive and
Something new.

Maybe, later,
I will learn to be afraid.

~

Footnote:

1. 1 Corinthians 13 (11-12): "When I was a child, I spoke as a child, I understood as a child, I thought as a child; but when I became a man, I put away childish things. For now we see in a mirror, dimly, but then face to face. Now I know in part, but then I shall know just as I also am known." (This is the New King James Version; verse 12 is much more poetic in the original King James Version: "For now we see through a glass, darkly; but then face to face: now I know in part; but then shall I know even as also I am known.")

Dare To

Bruce Golden

I lie here, as I have lain for so long, like a crumpled fetus, waiting for an end that will not come. I beg for it . . . I pray for it. But even as I wait for a cessation to my terrible existence, I know it is only a seductive fantasy. I imagine release, escape, blissful freedom--for imagination is all I have left. How perversely ironic that the cause of my damnation is now my sole salvation.

The air reeks of disinfectant as it does habitually, and the only sounds I hear are distant murmurings. There's a chill in the air so I clutch futilely at the lone, coarse sheet that covers me and open my eyes to the same austere wall, the same mocking shadows that greet me in perpetuity.

This time, though, I see a slight variation. Something is there. Something I can barely discern in the feeble light. A tiny, quivering, wiggle of activity. I strain to focus and see a caterpillar laboriously weaving its cocoon. Somehow it has made the Herculean trek to where the wall and ceiling intersect, and has attached itself in the crevice there.

As I lie here, I wonder what resplendent form will emerge from that cocoon. But even this vision is eventually muted by the despair that possesses my soul. I struggle not to reason, because there is no reason. Guilt or innocence, fact or fiction--they are concepts that no longer matter. All that matters are the gray ruins of my memories--memories that play out across the desolate fields of my mind. I cling to them the way a madman clings to sanity. In truth, I'm but a single, aberrant thought from slipping into the murky, swirling abyss of madness myself. So I try to remember.

I remember the carefree excursions I took to the ocean as a child--the warm sand, the cool water, the waves lapping at my ankles. I remember the university, in the days before reformation. The camaraderie of my fellow students. The give and take of creative discourse. Soaring over the sea cliffs on a crude hang glider built by a classmate. The girl with the bright red hair for whom I secretly longed. I remember many things, but always there is one tenacious, tumultuous recollection that intrudes.

It's always the same. The same thunderous sound of cracking wood as my door bursts open. The same flurry of booted feet violating the sanctum of my thoughts. The same rough hands that assault and bind me.

I remember the looks of hatred and repugnance, the shouted threats of violence from unfamiliar voices. The relentless malice focused upon me was like a living thing. Time and space became a rancorous blur as I stood in the center of an imposing room, still bound, surrounded by more strangers. I was on display, the accused in a courtroom where only the degree of my guilt seemed subject to debate.

Much of what occurred that day is lost in a haze of obscurity, but I clearly remember the prosecutor's embittered summation.

"The facts are incontrovertible, honorable Justice," I recall him stating with restrained assurance. "A routine intruscan of the accused's personal files disclosed numerous writings, both prosaic and poetical in nature, which can only be described as obscene and disturbingly antisocial. Public decorum prevents me from detailing the improprieties here, though the complete volume of these degradations can be found in the articles of evidence.

"In addition to the *possession* of these heinous works of pornography, the accused fully admits to authoring them. I say he stands guilty of counts both actual and abstract. I request that no leniency be shown by the court, and that he be sentenced under the severest penalties allowed for such crimes."

I distinctly remember the prosecutor, indifferent but confident, returning to his seat as the presiding justice contemplated the charges.

Turning a stern glance towards me, the justice methodically asked, "Does the accused have any statement to make before judgment is passed?"

I remember standing there, befuddled by the ritual of it all, unable to accept the realization that it was *my* fate they were discussing. When it seemed I wouldn't reply, the justice opened his mouth to issue the verdict, and I quickly stammered the only thing I could think of.

"I . . . I admit I wrote things that may be considered inappropriate by some, but they were simply meanderings of a personal nature, never meant for public dissemination. In no sense was I propagating the enforcement of my ideals upon society. They . . . they were simple fantasies, scribblings of an unfettered imagination, nothing more."

"Surely," boomed the justice, "throughout the course of this trial, if not previously, you have been made aware that, under our governing jurisprudence, thought *is* deed."

When I failed to respond, he went on. "If you have nothing further to say in your defense, I rule, by law, your guilt has been determined within reasonable doubt. I hereby sentence you to the withering."

I remember the clamor of hushed voices swelling like a balloon about to burst as the words were repeated throughout the courtroom.

"The withering."

The sound reverberated inside my skull, but terror and denial colored my reality. The withering. It was something spoken of only in whispers. No one I had ever known knew the truth of it. There were only rumors, grisly tales with no substance, yet the power to invoke dismay and horror.

Much of what happened next is a void of innocuous bureaucracy, but I remember the room where it took place. I was still bound, this time by sturdy leather straps that embraced my wrists and ankles. Except for the straps I was naked. Lost in the surreality of the moment, I felt no humiliation at my nakedness, but was overwhelmed by a pervading sense of vulnerability. I remember a chill in the room. There was a draft blowing from somewhere nearby. A single bright light was positioned so that it blinded me with its glare.

Three others were in the room. One I designated the "doctor," and two men who assisted her. They went about their business with systematic efficiency, seeming to ignore my obvious presence.

Then, without really acknowledging me with her eyes, the doctor began explaining the procedure. Paralyzed with fearful anticipation, I failed to absorb much of what she said. I remember only bits and pieces. Something about "hormonal injections" . . . "osteo and rheumatoid mutations" . . . "effects which bypass the brain."

The technical details of her explanation became a mere backdrop when I spied the row of hypodermics. Its length extended beyond absurdity, and when she reached for the first one I braced for the pain to come. However, after a few minor stings, I felt only a pinching sensation as needles were inserted with care into my thighs, my forearms, my neck . . . and on and on until each violation of my body no longer mattered. I must have passed out at some point, because when I awoke I was in another place.

I have no idea how long I was asleep, but as I weaned myself from unconsciousness I felt a stiffness that convinced me I had been lying there for some time. I tried to move but couldn't. I saw no restraints holding me down, so I tried again. I was successful, briefly, if you consider inducing a stabbing pain somewhere in my back a success. The pain convinced me to forego any further attempts at movement. So I shook off the vestiges of slumber and tried to recall with more clarity what had happened.

Oh, that it could only have been a horrible dream. But my reality had become a nightmare, one I hadn't yet grasped in its fullness. I know now nothing could have prepared me for what I was about to learn.

After I lay motionless for some time, a white-coated attendant approached me and bent over to engage in some sort of interaction with my bed.

"Where am I?" I asked, my voice cracking with dryness. "What's wrong with me? Why can't I move?"

The attendant made no sign he heard me. Instead he pushed my bed into a corridor that stretched on without end. The wheels churned below me as we passed cubicle after grim cubicle. In the dim light I saw other beds, beds occupied by inert bodies. The shadows and the constant jog of movement prevented me from seeing more until we came to a halt. The attendant departed, leaving me as naked and helpless as the day I was brought into this harsh world.

The alcove where I had been left was much brighter, and it took time for my eyes to adjust. Unable to turn my head without great pain, I could look in only one direction. Facing me was a metallic wall or door of some sort. The metal's sheen was highly reflective, and in its mirrored surface I saw myself.

Rather, I saw what I had become.

I have no idea how long I screamed before my cacophonous lament attracted a swarm of attendants who quickly sedated me. But I'm sure I wasn't the first, or the last, to wail in terror inside those somber halls.

I try not to remember what I saw in that hideous reflection. But I can't forget that my fingers are now gnarled deformities, my arms shrunken and folded against my chest as if my tendons had shriveled. I know the slightest attempt to move my legs will cause indescribable agony that writhes up through my hips and assaults my spinal cord. I can try to forget that my once wavy hair has been shaved to a coarse stubble, but the feeling my lips are dry and cracked is ever-present, and too often my skin is aflame with a devilish itch I cannot scratch.

Warehoused like a spare part that no longer serves any purpose, my days passing into years, I suck sullen gruel through toothless gums and wait for the impersonal touch of an attendant to wipe my body clean. It is a morose whim of fate indeed, that even such routine maintenance is a welcome diversion to an otherwise monotonous subsistence.

Trapped in a useless husk, perched on the precipice of lunacy, I turn inward for deliverance. From a place deep within I rise and soar high above other lands, gliding lazily into other times. They don't know about my journeys. They think I'm a prisoner of this room. They don't know I become other people--bold people, curious people, people who commemorate their adventures in rhyme. I don't tell them about the improper thoughts that creep into my head. I still dare to imagine the unimaginable, but no one knows. They won't find me in here. In here I don't allow myself to dwell on past transgressions. I seek no pity nor submit to reproach. And, no matter how seductive its siren call, in here I resist the longing for sweet death.

Instead, like the caterpillar, I wait to emerge from my cocoon, spread my glorious wings, and fly.

~

The Second-Thought Machine

Richard Lau

From the Desk of Shelby Desmond

Vice-President of Customer Loans, Harcourt Credit Union

September 4, 2023

Dear Mr. Osaka:

It is with deep regret that I must reject your application for a loan of $3 million.

I understand the importance of research and development for the continual advancement of technology and the great cost in time, effort, and financial outlay involved in such endeavors.

However, while your idea for, as you choose to call it, a "second-thought machine" sounds intriguing, you have not provided sufficiently compelling evidence that such a potential device is indeed possible.

Again, I understand the need for proprietary secrecy, especially with new, unpatented designs, and the honorable history of many influential companies that had their origins in humble garages and home labs.

However, our financial institution cannot risk such substantial funding on merely your word as collateral that you have produced a working prototype and are only seeking additional funding to produce an updated version with more range and permanence.

We wish you the best in acquiring a loan elsewhere and continued success in your efforts.

Sincerely,

Shelby Desmond

Vice-President of Customer Loans

Harcourt Credit Union

#

From the Desk of Shelby Desmond
Vice-President of Customer Loans, Harcourt Credit Union

September 12, 2023

Dear Dr. Osaka:

Recently, I wrote to you, rejecting your application for a loan.

My response may have been a bit premature. Over the weekend, I had second thoughts about your application. While enjoying my regular round at the Eastwood Golf Course, I was hit by a flash of inspiration. Literally a flash, as if I had been struck by lightning and left with every cell in my body charged and changed.

I now see the intrinsic value and great potential for such a device as you describe. As for you having a working prototype, one would expect no less from someone of your fine pedigree, great intellect, eminent qualifications, and spotless reputation.

So, if you are still interested, and I truly hope you are, I would like to extend to you approval for a loan of $1 million. I realize this is far less than you originally applied for, but due to internal regulations, this is the maximum I can approve on my own volition without additional confirmation from members of the Board. I have approached them with more vigor and excitement than I have mustered or exhibited in quite a while.

Unfortunately, they do not see things the same way I do and rejected my proposal for a loan in the full amount that you requested.

To make up for this shortcoming and to further show my unwavering belief in your work, I would like to personally offer an investment of $5 million of my own money. Or you can just accept the funds as a charitable donation.

I leave the decision up to you.

Again, my apologies for my original hasty and short-sighted decision.

Sincerely,

Shelby Desmond

Vice-President of Customer Loans

Harcourt Credit Union

#

December 28, 2023

Dear Journal Editor:

I am presently employed as an intern at a small start-up company founded by Dr. Kevin Osaka.

One of my duties is disposing of sensitive documents. I came across the enclosed two letters designated for disposal, but I couldn't bring myself to shred them.

There is something strange going on in my place of employment. While the letters explain why the company is flush with cash, they fail to account for the odd behavior of many of my co-workers.

Some of them get so disgruntled, they threaten to quit only to become extremely content and loyal the following day. Others demand a raise and then decide to accept a pay cut or demotion or even both!

While these incidents can be simply explained away as normal fluctuations in people's moods and situations, I have learned through office gossip and discrete inquiry that they have all experienced what the loan officer describes in his letter: the burst of light inside one's head and the resulting tingling.

I, too, have had this experience.

I had initially planned to become a whistle-blower and send the enclosed letters to the local newspaper and television media.

Such an action would violate the confidentiality agreement I signed when I joined the company, but I felt the letters contain information too important to be kept secret or destroyed.

Then there was that flash. My entire body still feels like my nerves are slowly reawakening.

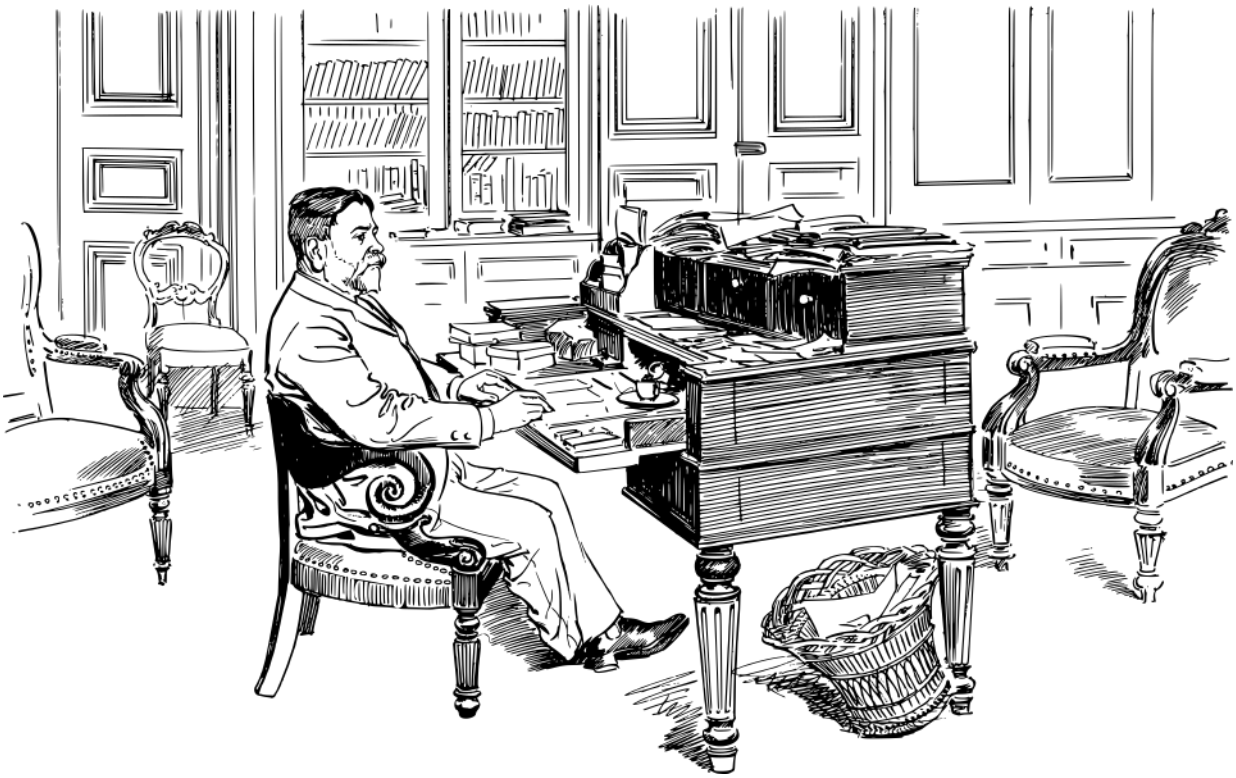
I also have changed my mind. Instead of my original plan of dispersing the letters to news outlets, I'm sending the credit union's correspondence to a journal that publishes fiction.

For some reason, I now feel this is the better choice.

Yours,

Emile Rodriguez

~



Going Interstellar: History, Technology, Economics, And Power Of Flight Out Of Cradle

Arturo Sierra

Before taking flight, the first issue to be addressed was making sure there would never be a better way to do it. How embarrassing it would have been, if the first had arrived there only to find others had beaten them to the punch. The waiting problem, it was called; go now, or wait for a faster ship?

The Law of Limited Surface Detail, commonly referred to as Ling-Holenbach Interval, took care of that. Proof that known physics at the time was all the physics that there was to know, save some details and tidying-up. There would be no new fundamental laws, no revolution in our understanding of the universe, and all that was left unanswered would remain so, because answers to those questions could not make sense. There was mathematical proof of this, in the form of horrendous equations that many still refuse to believe, and there was support from a mountain of empirical evidence, which most scientists would have preferred not to find. Time has proven Ling Shu and Hans Holenbach right. In short: there would not be warp drives, wormholes, nor any sort of FTL sorcery.

A more practical issue was fuel. Antimatter containment was (relatively) easy to figure out in theory, but getting hold of the advanced components for the tanks required a generation of material scientists dedicated exclusively to their production, to say nothing of antimatter factories themselves, built in space at a nigh prohibitive human cost. Stations the size of cities were transported around Sol 2, Venus, consisting almost entirely of radiators and solar panels—Venus being conveniently close to Sol while providing a good shadow to dump waste heat in. Catastrophic, spectacular explosions were par for the course.

The ships themselves were built at the Cradle-Sun L2. The first, *Beijing*, was four kilometers long and only thirty-two meters wide. The last ship built on Sol, *Karakorum*, would be thirty-five kilometers long and a hundred meters wide. These proportions were necessary, on the one hand, to keep the crew and passengers far enough from the annihilation chamber that the engine's radiation wouldn't fry them from the inside-out; on the other, to lower the drag and weathering from interstellar dust on the front-shield. On average, the ships could reach 0.4c, depending on payload.

Beijing was under construction for over fifty years. By the time it was ready to launch, some economist estimated that a third of global GDP was being spent on the project. The consequences of such an imbalanced budget were foreseeable. Not taking any action to prevent the social collapse it caused remains the original sin of interstellar travel.

At Kourou, the Cradle's main spaceport, rockets left every twenty minutes, with a constant roar of metallic hydrogen and the shriek of first stages returning to their launchpads. At schools everywhere, children pretended to be space pirates with shouts of *ahoy!* and *aye!* while chanting the names of the ships: *Beijing, Manhattan, Tokyo, Mumbai, Hamburg, Sydney*… In television-sets across the world, talking-heads recounted continental dry-ups while hurricanes swept coastlines away and construction went forth gingerly at L2. In space stations from Venus to the asteroid belt, brittle bones shattered with a sound like breaking glass and air hissed while escaping through small fissures.

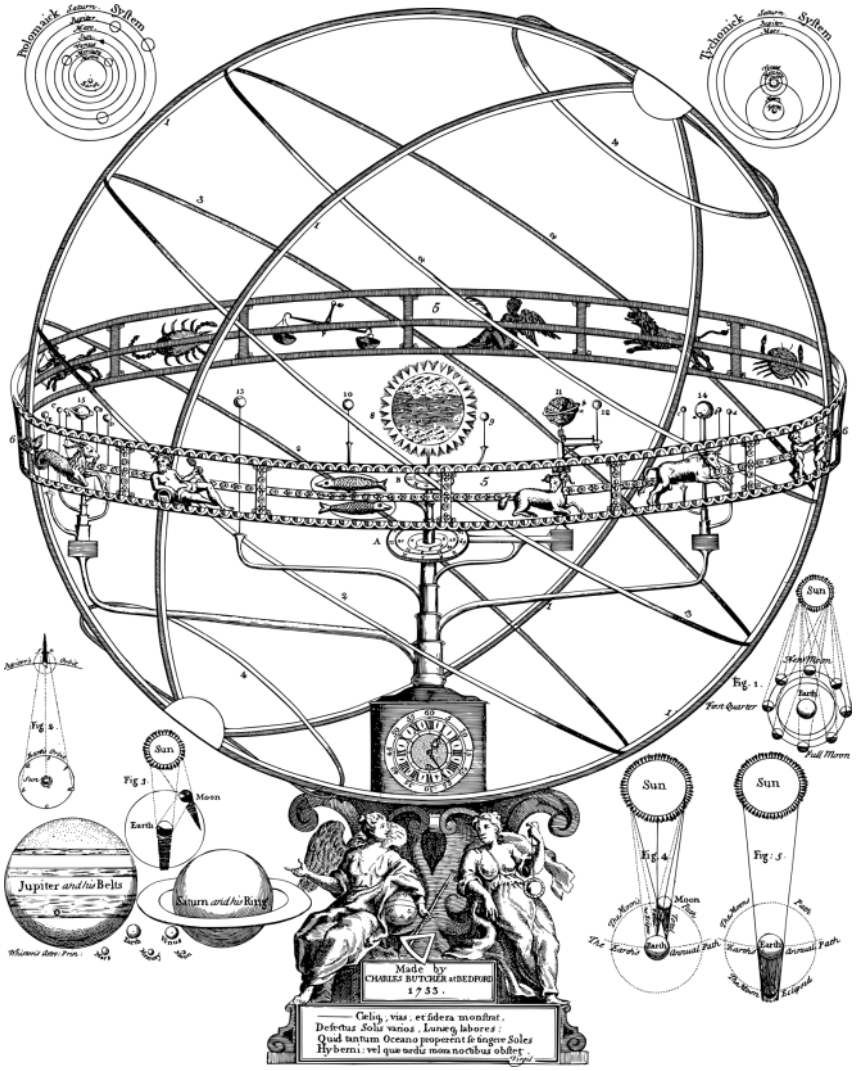
The technological, economic, industrial, and computational challenges were overwhelming, to say nothing of the medical issues presented by life in microgravity and by the torpor in which astronauts would travel. Additionally, to reduce the crew's mass, their bodies—excepting vital organs—were atrophied, muscles, tendons, and fat simply chopped off or shriveled to nothingness. Indefinite extension of human lifespan was an obvious necessity, since no one would want to go on the ships only to arrive there old and infirm, and with no hope of return. Luckily, athanasia (or biological immortality) had been achieved half a century before construction began, provided the patient could afford the ruinous expenses of treatment.

Yet it has been argued that the most important problem of all was of an entirely abstract nature, and actually very simple: to answer the question "why?" Paradoxically, this was the one challenge that remained insufficiently solved even after *Beijing* left for Proxima.

One argument, often touted, was the "one planet trap." Which—later generations would admit—didn't hold a drop of water: the resources spent on making humanity interstellar, at the cost of everything else, were the main culprit in turning its Cradle a baren wasteland, both in ecological and societal terms. Others justified the venture by alluding to overpopulation, as if taking a thousand passengers at a time off-world, and at a monstruous cost, could have made a dent in demographics. Then there were the "to boldly go" arguments. Some people, it's granted, will go to extreme lengths to satisfy their curiosity.

The true reason was obscured by a fog of such nonsense, but it was in fact quite straightforward: vanity. On a superficial level, the vanity of humankind's richest, the "moguls" who commissioned the ships. But on its own that would not have been enough. It was the vanity of an entire civilization, reaching for an ambition that made it ill. If there had been some neighboring aliens to impress, it would have made a bit more sense, but of course, Fermi's paradox turned out to have a rather prosaic explanation.

When *Beijing's* engine was finally turned on, there were as many crowds gathered on rooftops to see the flame burning for the stars, pointing up to the sky to show each other and peering through binoculars, as there were crowds storming police stations, setting fire to factories and offices in the night. But the genie would not go back into the bottle. Nor could its spell be hurried along: it would take a little over twenty years for the ship to arrive there, and four more years for the news to make its way back. It was the first portent of things to come, that the distance between action and consequence grew so vast, no human mind can hold it.



It's unfortunate that to talk of interstellar travel should mean to speak of money. Yet they don't understand the enterprise who don't think of it as a business first and foremost. If going to the stars had not promised profit, we can be sure nobody would have gone further than Luna.

Nevertheless, those first moguls who commissioned the ships didn't know how or if the investment would pay for itself. Especially after the Mars terraformation fiasco—Mars being the fourth planet of the Sol system, a 0.4g rock with no magnetic field, and which proved stubbornly adverse—the chance that any worthwhile source of richness would be found seemed slim. Indeed, the exorbitant price of antimatter and the roundtrip time to Centauri meant importing commodities would be pointless. Thanks to exploratory probes, Proxima was known to harbor primitive lifeforms, but what commercial use they could have remained uncertain. This is why most historians argue that the scheme was not to make money, but rather to protect the money the shipbuilders had by a feat of social engineering.

A more enthusiastic perspective argues that moguls already envisioned what would turn out to be the main appeal of interstellar venture, even to this day: that they who finance colonization of a system have an opportunity to not simply play a part in a global economy, competing with other actors under the supervision of a more or less competent government, but to actually own the complete infrastructure of a settlement, becoming landlords of a world. In effect, owning a planet.

Describing the hardships of colonization exceeds the scope of these pages. Suffice it to say that making a world fit for human habitation, and humans fit to inhabit it, was a task that would take more error than trial. The sacrifices can be called heroic, but are more often thought of as foolhardy. For three-hundred years the settlements teetered on the edge of collapse, even as the Cradle sunk ever deeper into chaos. It was in its attempt to escape the one planet trap that humankind came to the brink, as Proxima and later Rigel Centauri needed a constant stream of resources to sustain themselves, but the effort to supply them drained the homeworld of its lifeblood.

Recounting the fate of the ships themselves is more pertinent. Soon enough, their owners discovered that they had no way to enforce ownership over them, at least once the colonies became more-or-less self-sufficient. Few people had any desire to crew an interstellar vessel, having to spend decades in transit. Of course, they didn't spend all that time conscious, instead living in a state of semi-torpor, similar to the conditions of the passengers, but less drastic, in and out of an induced coma so that they could be awakened at short notice in case the ship demanded attention—which proved to be quite frequently. On that first flight, the crew of *Beijing* spent a total of five years each, out of the twenty-some that the trip took, awake on watch and tending to maintenance. Cooped up in a living space smaller than most apartments, eating their own waste recycled, and breathing the same, stale air over and over again. It was certainly not the moguls—so accustomed to a high standard of living—who wanted to be at the helm.

But once control of the ship was transfered to its captain and crew, how could they be forced to comply with the owner's wishes? They could go to Proxima and not return, flying instead between the stars of the Centauri system, much closer to each other than the Cradle to any of them, and increasingly able to support interstellar trade. In fact, the colonies paid quite handsomely to have the ships service the Centauri routes, and later to go back and forth to Virginis, Lacaille, and Indi, all easier to reach from the colonies than from the Cradle.

Moreover, an interstellar vessel is also a weapon of mass destruction like no other: at 0.4c, it is impossible to hit with defensive weaponry, and any ordinance it fires strikes with unmatched destructive power. If the locals allow it to park in low orbit of a planet or space station, it can cook a city simply by pointing its engine down and letting the radiation do the work. At least on one occasion, during the Concerted War, a ship has proven the extent of their destructive power, when *Karakorum* dropped its fuel tanks on Rigel Centauri and came near to sterilizing the world. Yet, just as a ground-based power has no reach over ships, so ships—crewed at most by half a dozen people—lack the capacity to rule over worlds.

The independence with which crews operate eventually meant they did not need to obey the whims of any planet-bound authority. It was the birth of a culture, that of interstellar traders. And trade they did: over the next kiloyears, as Sol gave out its last breath, ships went ever further, to Hede (683), to Keda (CD46), and ultimately here, to Gran Gliese, and beyond. By then, colonization had ceased to be a matter of mere vanity: advanced terraformation techniques, more reasonable shipyards, and streamlined antimatter production made the settlement of new worlds a profitable and sustainable business. As for trade goods, they include genetically moded biota for terraformation, such as algae, lichen, and bacteria, as well as luxury plant and animal stuffs, and then products requiring an advanced industrial ecology that young settlements have not yet grown: processors, superconductors, fusion reactor cores, and plastics—since hydrocarbons are difficult to come by on some worlds. Additionally, computer programs, made artificially scarce, are leased and taken by the ships.

Fifty solar kiloyears after the first flight of *Beijing*, the furthest known human world is Mu Arae, almost fifty lightyears away from our birthplace among the stars. Traders go between them all. Their journeys continue the legacy of exploration that weaves the fabric of our history.

~

The Soothing Sounds of Quantum Waves Crashing

Noah Levin

Witnessing a monumental change in history is equal parts frightening and fascinating. Hannah and I were among the privileged few to have front-row seats to the biggest revelation humanity would uncover in our lifetimes. The world's greatest minds are still grappling with what it means, but I already know the answer they are reluctant to accept.

"You're serious? You think that we're living in a simulation?" Hannah asked.

"What else could possibly explain it? We both saw the double-slit interference bands disappear with our own eyes. How could something like that change if we're *not* in a simulation?" I replied.

It was a bizarre and very specific thing that changed, something that one would only have observed by doing certain classic physics experiments at the exact right moment.

Hannah did not agree. "I saw the same thing that you did and I have no idea why it happened, but I just don't see why it means we're in a simulation."

"Let's recount what occurred. First, the problem: quantum physics is weird as hell and particle-wave duality is the weirdest of all. Sometimes light acts like a wave and other times it acts like a particle. This is what we were looking at, right? So we started by shining a laser through some very narrow and very close slits. And what did we see?" I asked.

"Come on, I was in class with you. We don't need to go through this step-by-step."

"No, we do, so you can understand why it means we're living in a simulation. We saw a particular interference pattern caused by constructive and destructive interference when we first shined the laser through the slits. What was it?"

"Double-slit interference, which looks like a row of parallel lines that grow darker and lighter like little hills until they fade away.

"And why is that unexpected?"

"At first, it doesn't seem like there's anything wrong. The light is traveling through two slits and the waves are interfering with each other as they should be. But the problem is that since light is a particle and the lasers we're using send out one photon at a time, each photon from the laser should only be able to pass through one slit, but they're all acting like they're passing through both slits. Hence the interference pattern."

"And if we stop and ask the photon which path it took, the interference pattern changes. It goes from all those thin lines to blobs."

"Which is what we would expect from single-slit diffraction when it passes through just one slit. The photons in the laser act like they take both paths until we ask which one they're taking and then they really do only take one path. Observing the photons changes the behavior of the system."

I corrected her, "We can't say that. Observing one part of the system changes what we observe in another part of the system. We don't know if anything is behaving any differently, we just know we're seeing different things. And what happened yesterday? Right before our very eyes, double-slit interference changed into single-slit diffraction and the lines became solid blobs. The photons were no longer behaving as if they took both paths but were acting like they were taking just one path."

When it happened, we both thought we had screwed something up in our experiment and our two slits had become one or we had bumped our setup, but the same thing happened to everyone in the class.

Hannah replied, "Okay, but I don't see why it means that we're in a simulation if the universe changed—"

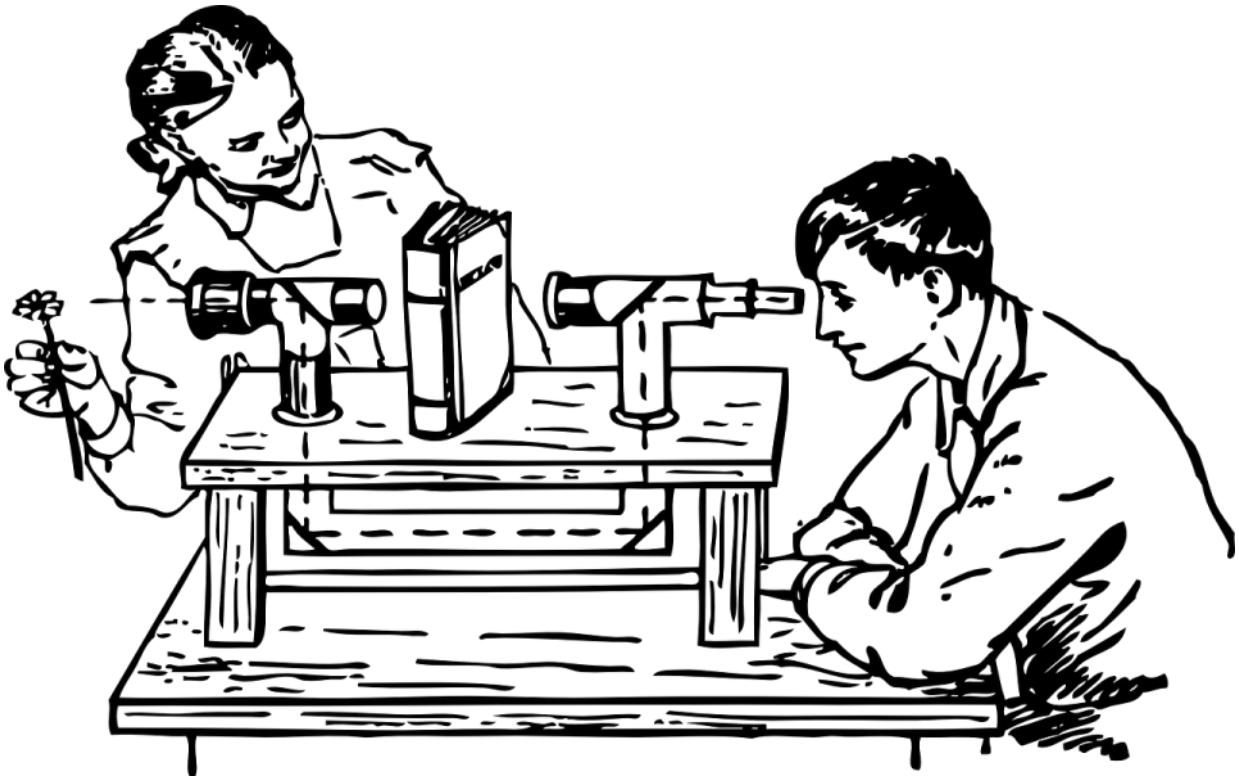
"Not so fast! We can only say our observations of what we experience as our universe changed. We don't know if anything actually changed. It's just that double-slit interference now looks like single-slit diffraction."

"Okay, Mrs. Technical, our *observations* changed. But why does that have to mean we're in a simulation?"

"Because there's no other explanation for it."

"Shouldn't we have some other reason to think we're in a simulation? You can't just take one piece of evidence and draw a conclusion from it, especially such a big one. Maybe God did it? I know you're basically an atheist, but you can't rule that out. You need more to go on than just what happened yesterday. If double-slit interference was so weird in the first place, maybe we still don't understand it, so perhaps it *can* just disappear. I remember Dr. Danet saying that Richard Feynman called double-slit interference 'the only mystery of quantum physics.'"

The mention of Dr. Danet's name made me immediately recall the emotions in his face that had been burned into my memory. When we all told him what we observed, he went from shock to disappointment—at his students for thinking they screwed up the experiment—paused for a brief moment at understanding, and finished with fear. He ran out of the room in disbelief and straight into Dr. Chambers who had been teaching the same lab next door. His knees buckled when he saw that she looked just as broken as himself.



I pushed his face out of my mind. "The whole point of doing the experiments yesterday was to see that quantum physics is unintuitive. And now that double-slit interference has inexplicably changed to do something a little more intuitive, it shows that it wasn't supposed to be there in the first place. Nature doesn't change, but computer programs can."

"You act like you understand how this all works, but we don't. How can you be so sure that double-slit interference *can't* suddenly change?"

She had a point, but I was ready for her.

"Because the existence of this phenomenon in the first place was evidence that we're in a simulation, we just didn't want to admit it. Look how weird it all was: photons seem to interfere with themselves even though they can only take one path. How do they—sorry, how *did* they—do this? Why did they do this? And they only did this as long as we didn't ask which path they took? If we ever had a way of finding out right where the photon was at any moment, then the double-slit interference pattern would disappear and the waves collapsed to a point and did the intuitive thing of traveling through a single slit. This stuff *never* made any sense since it just doesn't fit with everything else we understand about physics. But it can make sense if we are in a simulation. The only conclusion to draw is that someone fixed the universe's code or upgraded our cosmic server or something."

"Really? You're saying that this was evidence we were in a simulation this whole time and all these smart physicists knew the truth but they just didn't want to tell us?"

"They just didn't want to follow the evidence through to its logical conclusion. We had always just accepted that double-slit interference happened even though we didn't understand *why* it happened. Let's assume for a moment we're in a simulation. What do details in the distance look like when you play video games?"

"Everything is fuzzy until we get close. So?"

"Simulations only render details if they are relevant. Analogously, which path a particle took was only determined when there was a reason to do so. It's such a small thing, but it would be a waste of processing power to constantly calculate every irrelevant detail like that. If there are too many things to render then programs glitch or lag. Dr. Danet mentioned some experiment where the double-slit interference disappeared if they waited long enough between sending out particles. Our galactic program was happy to calculate the path of a single particle in a system over a short period, but any more complexity and it became simpler to apply probabilities to the system as a whole, hence the interference."

"But if we are in a simulation, wouldn't the computers and programs be way better than what we have so that they could account for all these little things and process them properly?"

"Maybe, but that doesn't mean they would work very differently than the computers we have or that they have enough processing power to handle it all. It still stands that being in a simulation can make sense of why double-slit experiments give different results when we're watching. If we checked which path a particle took, the software needed to render it, the waves collapsed, and the interference disappeared. If we didn't ask, it didn't bother to figure it out. It also explains those experiments where people saw interference even though a particle could physically take only one path but we just didn't know which one it actually took. The simulation doesn't bother figuring out which path since we can't see it. And the *pièce de résistance*: gravity."

"Gravity? How does gravity prove we're in a simulation?"

"External objects should be exerting gravitational forces on the particles and vice versa. Why wasn't gravity making the waves collapse? Shouldn't its effects mean that external objects are interacting with the system and 'observing' it?"

"But the effects of gravity would be negligible. Photons barely have any mass or gravitational field."

"I don't care how small they are, gravity should have done something to the system. The simulation just didn't account for it for whatever reason."

"But maybe gravity doesn't matter in these experiments, you don't know. I'm still not convinced we're in a simulation."

"But *nothing* else has changed since yesterday. How could it be that just this one thing is different? You don't think that's weird? Literally it seems to be the only thing that our observations have affected. The universe could take or leave double-slit interference and now it's decided to leave it. My guess is that it should have never been there in the first place."

"I still don't agree with you."

"It's hard to accept, but it's the only explanation. Other than the God argument you gave earlier, but it would be so weird for God to change just this one little thing. Not to mention all the other issues with making an argument assuming God exists and dabbles in the details of quantum physics from time to time."

She paused. I knew I had gotten through and she saw my reasoning.

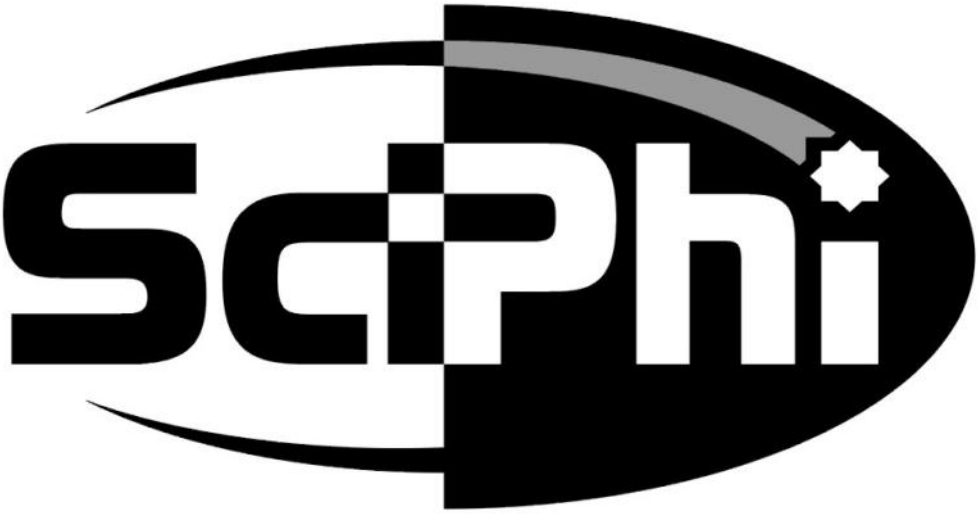
"Wouldn't it be awful to only be a piece of code though? I mean, let's say you're right, what's the point of living if I'm just some random NPC doing a pretty good job in some stupid alien simulation? I don't want to believe that."

"Wishful thinking isn't going to change reality. Besides, I think the opposite. Being a part of a program implies a purpose in ways that a random universe which exists by a cosmic accident does not."

"But then you're not really you, you're just a bunch of lines of code that is mediocre at best. And wouldn't that mean your algorithms are just making you believe this and say what you're saying?"

"Maybe, but I don't think it matters, since I'm still only whatever I can be. Knowing that I'm just some code on a computer is at least knowing what I am and that someone somewhere may really have a purpose for me. It's weird, but I no longer feel any existential anxiety. All it took to calm me was the soothing sounds of quantum waves crashing."

~



JOURNAL