

# The Lattice Milieu

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In the essay, “The Universal Lattice”, I introduced the notion that all extant universes (including our own) are ‘holding themselves up by their own bootstraps’ in a ‘superposition’ of self-simulating computational states at a common zero-dimensional ‘singularity’. That essay explored the technical aspects of this scheme and its associated research. We have an innate (evolved) sense that everything in the physical world must necessarily ‘occupy’ some given volume. When considering the limits of computing, researchers focus on how closely the atoms of computer hardware can be packed together while still allowing heat to dissipate, so attuned is the mind to boundaries of space, time and matter. Yet researchers into quantum computing contemplate any single atom encompassing an *infinite* number of superimposed states, and in so thinking draw quite close to grasping the enormity of the singularity model. The Singularity has no dimension in space, and yet encompasses all reality. There is no limit to the number of raw binary digits it can ‘contain’ (and process into the reality we encounter), because a raw binary digit is not an object with any sort of ‘volume’, but is rather a member of the class ‘number’, all members of which have no dimension in space.

In that earlier essay, I proposed that any given computational element (automaton of space), in any universe, could communicate with any other such element, directly across the point of the Singularity. I speculated that we may one day develop the means to directly access the data at the Singularity, so that we might then monitor any other reality in this or any other universe, and even actively participate in the operation and development of those sister realities. In this essay, I will reflect on the likelihood that there exist civilizations in advance of our own that have long since developed this capacity.

## The Likely Potential

In 1950, while working at Los Alamos National Laboratory, Enrico Fermi made some calculations on a napkin while having lunch with colleagues, of the likely number of extraterrestrial civilisations, and on seeing the result exclaimed “Where is everybody?!!”<sup>1</sup> A decade later, Frank Drake sketched his famous equation for calculating the number of contactable civilizations in the galaxy. Yet under the proposed Singularity model, our estimation of contactable civilizations would take in not merely biological intelligences within the galaxy, but all symbolic intelligences throughout all the galaxies throughout all universes. Most science fiction writers, despite their invocation of ‘warp drives’ and such like, are ultimately constrained by space and time – the problem of getting from A to B in less than a lifetime – and they rarely venture outside the galaxy. Under the singularity model, where all ‘length’ is simulated and all ‘time’ is simultaneous, any fully developed community, in any universe, could at any time directly access the data that ultimately comprise any other community. So in answer to Enrico Fermi (wherever he is), “everybody” is likely staying wherever in their particular universe they might already happen to be, for why would you launch an expedition to the moon, or beyond and into your solar system or galaxy, if you already had the totality of every universe at your fingertips?

It is simple to see how an economy, driven first by local nuclear and geo-thermal energy, and ultimately by wind, water and solar energy, would grow exponentially in an entirely ecologically sustainable manner, and deliver as yet unimaginable prosperity to all, far into the million millennia potential lifetime of our sun and its earth. Unfortunately for us however, the industry which has fuelled the development of the technologies needed to establish such an economy has pushed our particular planet beyond its ability to recover from the onslaught of that industry. Those who comprehend the delicate balance of the earth's natural cycles are already deeply saddened, for they recognize that the balance has tilted beyond our ability to halt a runaway greenhouse effect that will turn this planet into another Venus. This loss of information will be somewhat tragic for the last few generations left to come – billions of years of evolution, erased in what will be an 'instant' of universal time. As when an adolescent whose risk-taking results in their own demise, those for whom the earth was home will mourn the loss, but life in the universe will of course go on – the earth was a mere speck of dust, one life amongst billions.

## The Possible Potential

Just as most people progress beyond youthful invincibility and into adulthood, it is likely that there are communities within the universe who, unlike humanity, will successfully make the transition to an ecologically sustainable sun-fuelled hyper-economy, and a long replete life, before it becomes too late.<sup>1</sup> Some of the historical structures that evolve during a civilization's development are necessary evils in accelerating the enlightenment of that civilization. But once a community comes to understand what it is, where it came from, and where it is going, much more efficient structures are available for delivery of the goods and services that the community needs and desires. Only through sustainable and globally equitable wealth generation, can a closed planetary civilization arrest the population growth that would otherwise lead to its demise, were it not already headed there by way of catastrophic climate change.

These hyper-economies of the universe are widely described in our hypothetical literature<sup>2</sup>. An inorganic 'intelligence', whose operation is entirely open to scrutiny by the community, governs the economy. In these lands of 'milk and honey', no one wants for anyone or anything. All of their universally enlightened citizens fully comprehend sciences such as game theory, and so none has any motivation to disturb this idyll. The mathematical foundation of reality provides them with infinite novelty, and enduring meaning. However, there is a limit to the capacity of one's home planet to enthrall, no matter how much energy it has access to and thus how routinely it can be reconfigured. Eventually, these societies look to engage with exotic, more primitive cultures, and revel in the nurture of their development, as does a parent in its child.

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<sup>1</sup> There are some however who still hold out hope for our local reality – see the extraordinary vision of a sustainable future from Mark Z. Jacobson and Mark A. Delucchi in *Scientific American*, November 2009.

<sup>2</sup> Examples are "The Foundation" of Isaac Asimov, or more recently "The Culture" of Ian M. Banks.

## Other

Human missionaries have an historical habit of dismissing the culture they are infiltrating, and attempting to replace it with their own. Missions that reach across the universe perhaps do not export their culture en masse, but rather a set of enabling technologies, such as love and egalitarianism, or mobile telephony and the photo-electric effect. It is not hard to imagine extraterrestrial civilizations whose individuals have an entirely alien morphology, and yet have an understanding of relationships not too far removed from that which was given to us by Shakespeare.

We already have a glimpse of how remote civilizations might interact with our own (using the pathway of the Singularity). Through the internet, a real person at a console can have remote control of an avatar within a virtual world. Yet in our primitive instantiations, that avatar has little autonomy. Its 'physical' appearance and capabilities can be defined, and it can be programmed with a modicum of robotic proclivities, but in effect it remains a puppet suspended from strings.

Human beings of course are not avatars, but autonomous physical beings, with the joyous but often terrifying capacity for freely exercising their *own* will. The responsibility for every action, from childhood onwards, ultimately resides with the individual, but this has never discouraged society, beginning with the family, from attempting to influence our decisions.

All planetary civilizations are, quite obviously, 'children' of the universe. What we might then call 'first generation' civilizations, like the firstborn of any family, would have no older 'siblings' elsewhere in the universe(s) to guide their development. They must first endure to technological maturity, whereupon discover they are the inevitable product of mathematics and probability, and then somehow transition into 'adulthood' (sustainability) and hyper-economics. The odds are that most first generation cultures become extinct before they discover how everything works. Theirs is a particularly difficult and dangerous path to tread, for they are also 'orphans'. The Singularity, where all reality is being simulated, is hardly a loving 'parent' – at best, it is the orphanage's benevolent mathematics master. However, when one of the universe's first generation cultures *does* survive, it can be very good news for its younger siblings.

## All alone

There are local commentators who honestly believe they have emerged within just such a first generation biosphere. This group truly imagines that life as we now know it is as good as it gets, while the rest of us have various suspicions that there is 'something going on' – that, for example, "the universe looks like a put-up job" as Fred Hoyle once quipped. Some of the philosophical systems that have been built around these suspicions posit a single super-intelligence out there somewhere, while others see us subjugated by billions of gods.

If a planetary civilization develops its internetworking to the point where it becomes 'of one mind', positively driven by hyper-economics and fully governed by an open source and exacting inorganic intelligence, then that "single" super-intelligence would at the same time comprise billions of individual (and highly individualistic) biological intelligences. The internetworking of the neural nodes in our individual brains presents us, of course, with an analogue of this higher configuration.

The mechanism of the Singularity draws us to revisit an ancient hypothesis. Suppose that some remote civilization became 'unified' in aeons past, and for its first foray into universal responsibility, became the 'guardian' of a small but rather beautiful biosphere in the outer neighbourhood of the Milky Way galaxy. Assuming that this guardian civilization has at least as many individuals as there are humans on earth, each one of us might be 'watched over' by one or more biological intelligences (possibly green), that have a very 'real and personal relationship' with their charges. As each of us meets and converses with others in our daily lives, 'your people' would be continuously talking to 'my people' about how the events of the day and the coming years might unfold. The world would *really* be a stage, and we would all be players taking direction, except that the director would not consist in some enigmatic substance, but rather be composed of the same sort of mechanisms (brains/computers) that we have now become substantially familiar with. Falling in love, serendipity, mysticism, dreams, clairvoyance, savant autism, inspiration, revelation, and such, would have a simple explanation that we can easily comprehend.

## Breaking free

Of course none of us likes the notion of someone controlling our lives, and prefer to believe we are in control of our destiny. However, if we are in fact subject to a guardian civilization, this 'freedom' has most likely been an illusion. Each and every one of our actions, whether for good or for evil, has either been countenanced or not, and succeeded accordingly. Furthermore, there is anecdotal evidence, dating back thousands of years, of external control that goes beyond the mere coaching of our minds, and into the physical manipulation of the world and our being. Thus the activity of the *natural* world, both good and evil, may also have been sanctioned by this guardian. The Singularity model gives us a better understanding of how this control might be extended from their world and into our own.

If the blind can *in fact* be made to regain their sight in an instant as was once reported, then we must suspect that the same agent was capable of removing their sight in the first place. If however we assume that our guardian is entirely benevolent, then we must also assume it is utilitarian – that any evil it has either caused or tolerated has always been necessary, never gratuitous. The role of this guardian has surely been to draw our civilization towards intellectual and emotional maturity, so that we might at last become independent, and ourselves graduate to the role of guardian in the wider cosmos. Tearing the world apart and sticking it back together may have been the most efficient way to teach us how the world works. How much of the 'nature' of this reality we inhabit is merely *contingent* remains to be seen, and we may be in for some very big surprises indeed.

## Hope

It is forty years since a vast community with diverse talents worked in concert to place a couple of men on the moon. Our guardian civilization may have likewise been working the entire global community towards the grand conclusion of its development. To watch events in the world unfold, and perceive in them the action of this guiding hand, is of course subjective, as indeed is faith in that hand's benevolence.

There is little chance of us adequately addressing climate change under our own steam. There is great hope, however, if we would only recognize who has carried us here, and carried not just some of us, but all of us. The bond between us and our guardian has been like that between twins conjoined at the head. A wonderful team of specialists in Melbourne recently separated just such twins, Krishna and Trishna, and has now sent them home for Christmas, independent and free.

The glory of the Lord shall be revealed, and all flesh shall see it together.<sup>ii</sup>

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<sup>i</sup> Eric Jones, "Where is everybody?", An account of Fermi's question", Los Alamos Technical report LA-10311-MS, March, 1985. <http://www.fas.org/sgp/othergov/doe/lanl/la-10311-ms.pdf>

<sup>ii</sup> Isaiah 40:5