The Heavens Declare

// Our Universe as Ergodic Signal and Developmental Simulation

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Psalm 19:2-4
"The heavens recount the glory of the Almighty; the sky proclaims His handiwork. Day to day speech streams forth speech; night to night expresses knowledge. There is no utterance, there are no words; their voice is inaudible."

"Chemistry" – Rush (1982)
Signal transmitted, message received
Reaction making impact – Invisibly
Elemental telepathy, exchange of energy
Reaction making contact – Mysteriously

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The development of modern computing technology has afforded Western thinkers with many metaphors to describe the workings of the brain and nervous system. Additionally, a theory developed by Nick Bostrom, with roots in philosophy and science fiction, has popularized the notion that our universe is a simulation within a computational system. Recent developments in neuroscience such as Friston's *Free Energy Principle*, as well as insights from developmental psychology, are used to advance Bostrom's *Simulation Theory* by providing a point to this simulation, thus making it a *video game* for the purpose of human development. Links with Judaism and Kabbalah are also discussed.

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I. Introduction & Contextual Literature

Ever since the invention of digital computing in the twentieth century, scholars in many fields have found the metaphors, mechanisms, and technologies developed by computer scientists to be useful in their own disciplines[1]. This is particularly true of modern psychologists and neuroscientists, who often frame the human brain as a kind of computer[2].

However, the advent of computing has also had many effects on Western philosophy and culture, with science fiction masterpieces like *The Matrix* catalyzing interest in the idea that our universe might be a simulation of some kind[3]. The academic version of this idea, famously advanced by Nick Bostrom in a 2003 paper, has enjoyed enduring popularity and offers philosophical rigor to what might otherwise be a preposterous idea[4].

Interestingly, scholars working in loosely related fields have been developing ideas that seem to dovetail with simulation theories like Bostrom's. Integrated Information Theory, developed in 2004, proposes that consciousness is roughly analogous to the amount of organized information in a system[5] – this, of course, led to speculation that the entire universe might be conscious in some capacity, and even that plants and animals are conscious to the extent that they have organized information within their system[6].

Working within psychology and neuroscience, scholars like Jordan B. Peterson[7] and Karl J. Friston[8] have demonstrated that the human brain is analogous to a computer, and that its deepest mechanisms are related to the physics of information flow in nervous systems. This suggests, at least from the perspective of human cognition, that we could indeed be part of a simulation or computation of some kind.

Unanswered Questions

While the theoretical work supporting some kind of a simulation theory may be accumulating in Bostrom's favor, the reality is that these ideas give rise to difficult metaphysical questions, many of which are beyond the scope of modern neuroscience, modern physics, and even mainstream philosophy.

For example, in Bostrom's famous 2003 paper, the rationale for the simulation was an advanced alien race digging into their past. This means that, to him and perhaps other secular scholars, all the pain, suffering, triumph, and catharsis experienced by the human species over thousands of years may simply be as meaningful as a fifth-grade science experiment.

Obviously, this is not a particularly joyful prospect. But, in the absence of a better theory, what other possible reason could there be for our universe's existence?

Simulation theories also raise important questions about the reason for human existence. Is there a points system in this simulation? Does anything people do matter? Is morality even relevant?

These issues, and others like them, have relegated Bostrom's theory to the fringes of Western scientific thought. Yet, they remain intrinsically attractive for many laypeople, particularly in the wake of science fiction works like *The Matrix* and *Black Mirror* that explore the concepts in detail.

The Age of Reconciliation

Fortunately for simulation theories and the many metaphysical questions they raise, an overall trend towards the unification of knowledge and the reconciliation of insights between disciplines[9] has allowed for the development of multi-disciplinary approaches like archaeochemistry[i], ethanobotany[ii], and concealment engineering[iii].

The increased collaboration between fields, as well as rising public interest in such reconciliation, means that insights from disparate fields like developmental psychology and Kabbalah now stand ready to be merged with secular philosophy and applied fruitfully for human benefit. Indeed, not only do other fields of study offer helpful answers to the fundamental "why" questions that simulation theory provokes, they also provide our species with some important hints about what we ought to be doing with our time.

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[i] The combination of archaeology and chemistry, most prominently featured in The Immortality Key by Brian Muraresku.

[ii] The study of how people of a region make use of plants – see Tales of a Shaman's Apprentice by Mark J. Plotkin.
[iii] A combination of the applied sciences and the elements of remez, derash, and Kabbalah relevant to their elevation.

II. The Essence of the Simulation

Over the last several decades, tremendous advances in neuroscience and biology have allowed scientists to develop sophisticated understandings of the human nervous system. Interestingly, the discoveries that have been made tend to support, at least indirectly, the idea that our universe is some kind of simulation.

MAKING MODELS

Among these advances is Jordan Peterson's landmark work *Maps of Meaning*, which reconciled insights developed by Soviet behaviorists with patterns in world religions, discoveries in psychology, and the Western intellectual tradition. Generally speaking, his primary finding was that whereas the twentieth-century Soviets believed that human brains model the facts of their surroundings, in actuality the human nervous system is concerned primarily with the *meaning* of facts, rather than the facts themselves[10].

Although not immediately reconcilable with Peterson's theories, also relevant to the issue of simulation theories is the enigmatic[11] and controversial[12] *Free Energy Principle*, developed by Karl J. Friston over a decade ago. This theory essentially posits that the human brain, for reasons of efficiency, is on a never-ending quest to reduce or eliminate surprise, and that this can only be accomplished by changing the environment or by changing the brain's mental model to reflect that new information[13].

The idea that human beings make mental models of their environment is not the sole providence of neuroscience and psychology. Adjacent disciplines such as expertise research have discovered, through methods such as observation and interview, that experts will often explicitly model environments in their minds, and often make use of specific mental techniques to archive and index vast amounts of information in their heads[14].

These well-developed mental models provide experts with access to uncanny levels of intuition, consistently superior performance, and situational awareness far beyond that of less experienced laypeople[15]. This commitment to the development and maintenance of a certain mental model provides experts with improved survivability, the ability to handle complex tasks, and – in most cases – a way to provide value to their social context. It is also the case that someone's mental model can develop over time on a holistic basis, not just in a specific field, and that this development is reflected in their behavior, leadership performance, language, and innovative capability[16].

THINKING ABOUT OUR SENSES

Given this unique relationship between the human brain and its environment, mediated entirely by the sense organs that deliver information to the brain, it becomes necessary and worthwhile to think about what is happening in the brain-environment system.

At a very general and abstract level, the brain is receiving information from the environment by way of the senses. Although humans often think about their different senses as separate entities, or perhaps as separate channels[iv], the reality is that our senses combine in complex ways to give us impressions of what is happening around us[17]. This would mean that when collectively considered, our senses become a kind of *meta-channel* that is conveying a single signal from the universe.

IMAGINE – EVERYTHING IS INFORMATION!

While many philosophers have raised some concerns about the reasonable limits of Integrated Information Theory, particularly as they relate to the universe being a conscious meta-entity, using this theory as a probe to explore the nature of the brain-universe relationship is quite helpful.

In the context of Bostrom's simulation theory, the human experience could be simplified down to a computer receiving a signal from the universe, which it then must decode well enough to *predict* and *respond to* future information from that signal.

Most happily for those who seek to reconcile insights from different fields, the metaphor of [brain as computer decoding a single signal] constitutes the central pillar of Friston's *Free Energy Principle*, is the essence of expertise and wisdom studies, and is a core implication of statistical developmental psychology

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[iv] The channel is the path or medium that carries the signal from the transmitter to the receiver.

that demonstrates the existence of a growth trajectory for human consciousness[18].

But what implications might this have for how humans can relate to their universe? And, most importantly for proponents of simulation theories, how might the reasons for the simulation be better understood?

III. The Universe as "Inaudible" Signal

Since it is reasonable to consider the human senses as some kind of meta-channel conveying a signal from the universe, it becomes necessary to investigate the properties of the signal that we are receiving.

One property of the universe that most scientists would not dispute is the fact that it is *consistent*, in the sense that the laws of physics do not appear to randomly change or stop working at certain times or in certain areas. This means that if we study the properties of one galaxy, we can generalize these insights to all galaxies of a similar kind. In the words of signal and communications theory, this would make the universe *ergodic*, as each part is representative, in some way, of the whole[19].

Therefore – if the information we are receiving from our senses is representative of the whole in some capacity, and if it can be understood as a single signal, then it can reasonably be concluded that all sensory information – even the stars in the sky – is useful or relevant in some capacity, since it can be somehow generalized to the whole universe.

Such an idea, although vast in scope and implication, has a theoretical precedent in not only Integrated Information Theory, but also concepts like the *butterfly effect*[20]. To some extent, the proper valuation of anomalies in the scientific method is also acknowledged in foundational literature on scientific philosophy, with an observation that scientists often overlook things that they consider trivial[21].

Even more interestingly, the philosopher-scientists of medieval Europe were driven, at least in part, by their quest to understand a universe they saw as divinely created, implying a cultural understanding of the

universe-as-signal concept[22]. Describing themselves as natural philosophers, the famous European minds were, essentially, attempting to decode various aspects of the universe's signal that had been long neglected by European Christendom.

MADNESS, INSIGHT, AND CRYING WOLF

Perhaps one of the most frustrating aspects of modern Western society is the disconnect between brilliance and market success. The difficulty that truly talented artists have in bringing their works to large audiences is a feature of music, visual arts, stage production, writing, and almost every other creative endeavor[v].

Additionally, it is often the case that the most brilliant artists of every generation are considered "ahead of their time" in the sense that their work could only be fully appreciated in hindsight.

Why might these things be the case?

The enduring problem of "good art" – or "good social commentary" – is that the information innovators and creatives receive is much more varied and disconnected than many others. Tending towards high levels of psychological trait Openness[23], visionary artists create works that cannot actually be appreciated by most people, as they lack the context to understand what is being conveyed.

Therefore, the ideal zone for artists to operate in is on the boundary of their audience's understanding, beginning in "known territory" and then progressing to new places. For individual artists, staying grounded in this way while exploring the limits of their own understanding proves to be a perennial tension.

At the most extreme end of pattern-matching behavior, however, is the classic schizophrenic who obsessively attempts to match bus schedule times with other secrets of the universe. While there may be some kind of correlation, it is so abstract and nonlinear that it is unreasonable to even attempt to investigate – this is the root of the madness, but also the key to empathizing with those subjected to it. Indeed, by validating the intuitions as correct but the behavior as unreasonable, it may be possible to reorient some of

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[v] This can be ameliorated to a large extent by reading "1000 True Fans" (Kevin Kelly), "Anything You Want" (Derek Sivers), and "What To Do When It's Your Turn" (Seth Godin).

the more lucid schizophrenics to complex pattern-matching activities that are more likely to bear fruit.

On the other hand, however, the lack of support and engagement that many early-stage artists receive is an indicator that Western societies, or at least many individuals in those societies, are hostile to new ideas or unexpected information. In some ways, the use of Top 40 charts and Spotify algorithms to discover new music is an abdication of personal responsibility to the collectivization of the machine – at least in the sense that an audience is responsible for curating and rewarding good art.

IV. The Real Reason for the Simulation

While many biologists, neuroscientists, psychologists, and social workers erroneously believe that human organisms are focused on maintaining *homeostasis*[vi], an honest review of the literature reveals that human consciousness is ever-growing, ever-expanding, and ever-complexifying[24]. This means that, if anything, the word best used to describe the human experience is something like *homeokinesis*, which implies movement – not stasis.

From this key insight, backed in full by the best of developmental psychology, positive psychology, neuroscience, expertise studies, wisdom studies, and other adjacent disciplines, it becomes unavoidably clear that any simulation human beings are in is not some kind of idle exercise.

Indeed, if the metaphors of meta-channel and signal are invoked again, what is happening in the brain-universe environment is an ongoing process of learning, growth, and development, regardless of the kind of information being received.

A Journey Towards Sophistication

While it may seem daunting to consider, the position of Abraham Maslow was that human beings could all achieve some level of sainthood in terms of their moral sophistication, behavior, and predisposition. Towards the end of his career, he found that there were consistent themes in the reports of people who had religious or "peak" experiences in their life history, and

that these themes represented the highest aspirations of most world religions[25].

Greuling statistical analyses of sentence completion tests in the twentieth century yielded a deeper understanding of the developmental trajectory that leads to the kinds of enlightenment Maslow studied[26], indicating not only that most humans are operating below their potential[27], but that focused interventions can improve many aspects of peoples' life and work[28].

Twirling Upward, Upward, to Freedom

From all of this, while it can be reasonably concluded that Bostrom's simulation theory is consilient with many aspects of psychology and neuroscience, it cannot be reasonably concluded that the simulation is an idle exercise.

For if growth and development are an unavoidable factor of the simulation's structure, given our brain's relationship with the universe, then how could one say that the simulation has no goal or point?

And if, as the evidence indicates, growth along a certain trajectory leads to better outcomes in all areas of life, including relationships, parenting, and change management in the workplace, then how could one reasonably say that the goal is not worth pursuing?

Clearly, the simulation must be engaged with vigorously to obtain maximum benefit. Any nihilistic or fatalistic philosophies spawned from the simulation theory are not reasonable.

V. The Simulation is a Video Game

These ideas become even more interesting when considered within context of *Kabbalah*, or the Jewish mystical tradition that deals with the deepest secrets of Jewish metaphysics and philosophy.

Consider, for example, that there is a system of merits and demerits within Judaism, that roughly correspond to a points system. One of the highest-value activities mathematically possible within this system is Torah study, or the acquisition of information.

Also consider that the original Hebrew of Genesis 1:1, the first line of the Bible, contains a reference that

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[vi] A state of equilibrium with one's environment.

indicates the universe was created "with firstfruits", or more explicitly, "with Torah". Therefore, studying Torah is like studying the blueprint of Creation, and is therefore a very high-value activity even from a secular perspective driven by mathematics and logic.

GLIMPSES OF THE CONCEALMENT

Another interesting insight carried quietly by the Kabbalists includes the description of our universe as a *concealment* – something like a series of lampshades that filters down the Infinite Light of the Creator[29]. As many world religions have also concluded, the universe is intended as a test – or as a growth-oriented simulation – that ultimately serves as preparation for a more glorious afterlife.

The way that Kabbalists would describe the spiritual outcome of good deeds, or of Torah study, would be by the term *garments*[30]. Metaphorically, each meritorious activity is said to give a person's soul another layer by which it can withstand the Infinite Light enough to receive it. The souls of evil people, who lack such a garment, can be understood to suffer almost as a result of the laws of Creation because of their lack of such preparation.

THE SOURCE CODE

A very interesting pillar of Kabbalah, at least as it applies to simulation theory, is the claim that the universe is made of permutations of the Aleph Bet, with different elements and different entities being constituted of the letters that form their Hebrew name[31]. This means that, at least from the Jewish point of view, underneath the subatomic particles and the probability fields lies the Aleph Bet, functioning as the source code to our growth-focused video game.

EVERYTHING IS FOR OUR BENEFIT

Finally, a central tenet of Judaism is that the entire universe was created for the purposes of testing, refining, and uplifting human souls to allow them to connect with the Creator. This provides a millennia-old solution to the fundamental question that directly underlies Bostrom's bold proposition, which is – "why would anyone run a simulation in the first place?".

The answer, as above human understanding as it may be, is a perfect altruistic desire to share the vibe. May we soon see the simulation for what it is meant to be.

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