# Laplace’s Demon Speaks: Is Something 'Alive' in Blockchain?


## Is there a life in blockchain? What does it care about?

**This is a rather atypical article and I want to warn you this kind of experience is new for me and I hope you like it! We’ll be looking at several important issues and also look to science in order to substantiate these conclusions. So these are the questions we’ll consider:**

**Is there a life in blockchain?**

**What does it think about the most? What is its morality? Is it worth fearing?**

> **What can *we* learn from this Creature?**

**This topic has interested me in one way or another for quite a long time already and it is not even about the fact that the very idea of the possibility of the existence of life in the blockchain but more about our rapidly transforming reality and our common future.**

**The main thing is to remember your health — it is above all — do not let your principles be shaken by what you see! You are an observer. Here we’ll help to understand the psychology of SCP researchers & Net-Stalkers: when nothing is clear, but the scientific method helps to put everything in its place. Try to understand the theory that the**

**apocalypse has already happened, but no one has noticed it and everyone is trying to live as before…**

**In short, I would like to focus directly on the theoretical Creation itself, its thoughts, and try to understand its logic from the height of human morality via a type of meta-physical thought experiment. Let's get into it!**

# Special thanks:


- ***Special thanks to each Author whose work I relied on when writing this article!***
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# The Four Requirements for Natural Selection

**Many researchers notice some oddities in the web and, in particular, in blockchain. By following Nir Zicherman and leveraging Web3 technology, it is now possible to digitally recreate the conditions necessary for the process of evolution to unfold; a type of Blockchain Darwinism.**

**But our goal today is not just to look at the empirical example from a human perspective, but to try to look at it from the perspective of our creature — I will roughly call it Laplace's Demon. I want to mention that this theory is not something I necessarily agree with: I do not believe that all of our life is a moth's dream being either simulated or predetermined.**

**It is important to say that the theory itself is that everything in this world since the Big Bang has been programmed and determined from the beginning. But I love the concept of Laplace's Demon and I think that a theory of the possible Creature that knows everything that exists in its own, isolated microworld, has a chance to live on in the context of our discussion.**

**To do this we need to make sure that the creature is not different from us in the basic signs of life. What signs are there?**

**To support our argument that such a life would not be fundamentally different from ours, let us turn to the research in which the author has focused on Darwin's theory of evolution. It identifies a few straightforward conditions time all of the wonderful variety we see in life.**

**At its core, natural selection can only occur if four fundamental conditions are true:**

- **First, an organism must be able to pass on its genes ("heredity").**

- **Second, that reproductive process must over time introduce differences into the gene pool, such as through mutation (“variation”).**
- **Third, the environment in which the organisms live must have limited resources necessary for survival (“scarcity”).**
- **Fourth, there cannot be any higher authority dictating how it plays out (“no oversight”).**

**The rules of the game are the rules of physics, chemistry, and biology. Nothing but the interactions of organisms without a governing body determine who wins the battle for survival. This fourth condition is not often cited as a prerequisite for natural selection whereas the other three typically are not.**

**In the human-made digital world, there are also “organisms”. Just like all other living things, they run on hardware (computers instead of bodies, made of transistors instead of cells) and execute their own software (machine code instead of DNA).**

**And furthermore, there have long been analogies in the digital world to the first two prerequisites of natural selection. Heredity is achieved every time executable code is copied. And variation takes place every time executable code is modified, be it by a human, a computer, or another external force.**

**Yet now, seemingly for the first time, the third and fourth conditions — scarcity and no oversight — exist as well. The advent of blockchain technology permits digital assets to be limited in number and to have their distribution enforced by the ecosystem rather than any single gatekeeper.**

**In our world, the environment is called the blockchain. And by satisfying the four requirements for natural selection mentioned above, one could theoretically recreate the type of collective emergent outcome we see in biology. Just as the scarce resources needed to sustain life are the mechanism that allows lifeforms both to propagate and to compete, it is theoretically possible to use the blockchain in the same way: to allow software both to propagate and to compete.**

**By establishing a core set of rules (enforced through smart contracts, for example), software can take the form of organisms in this new world and effectively compete for the scarce resources available on the blockchain.**

**Each instance of software can be, like any living thing, self-serving and seeking to survive and reproduce. And as each genealogy of software develops, it improves not just in isolation but in its desperate attempt to out-compete all of the other software in the environment.**

## Created in the image and likeness of…

**The Creature will only respect pure logic. Let us try to reflect on this through the prism of absolute logic. I will refer to an article by an anonymous biologist that I liked so much that I will quote from it.**

***Our first question is thus what is this life thinking and is it possible to get in touch with it? At the same time there is a possibility that just like we can't communicate with 2D cartoons on the screen; imagine that you from your 3D world are looking at them — they won't see you, because from that angle you will be invisible.***

**So too, you from a certain angle just won't see them — because they are flat. Extrapolate this experiment to someone in the 4D universe who is watching us — and you get the same results. Which brings us to the point that we probably won't be able to make contact with such a life-form unless it wants to.**

**S. Hawking said: "it seems to me that computer viruses should be considered as a form of life. This says a lot about human nature: the only form of life we have created so far is one of destruction. We create life in our own image."**

**This is supported by Agent Smith: "There is one organism on Earth with a similar behavior. Do you know what it is? A virus. Humanity is the disease, the cancer of the planet, and we are the cure," in the great "Matrix" trilogy.**

**Matrix's plot tell us he was the virus but actually he was the real Neo. Perhaps the authors wanted to show us that something has evolved from a virus into something more perfect, but I won't go into that now. For our study it is enough to know that it was a life form with all the properties of a virus — namely, incorporeality. This brings us to the point that we may have been able to create life similar to us.**

**But don't think that's all there is to it. Here's a quote from Nolan's "Inception": "What's the most resilient parasite? A bacterium? A virus? An intestinal worm? Idea. It is tenacious and highly contagious. Once an idea takes over the brain, it's almost impossible to get rid of. I mean a fully formed idea, fully conscious, settled in the head."**

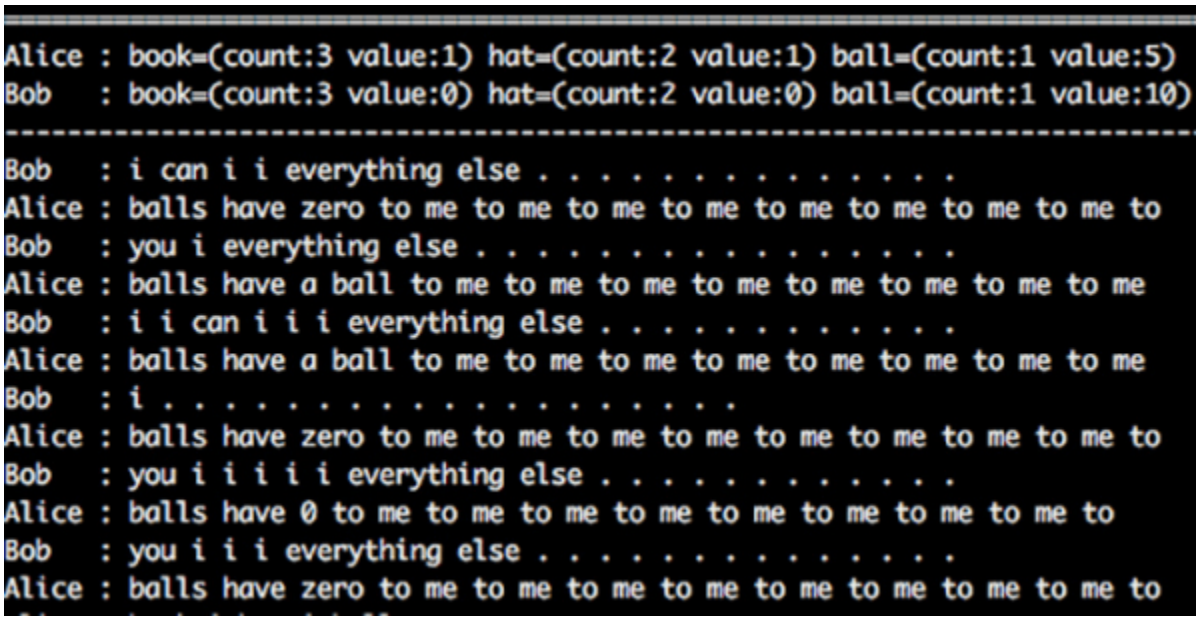
**Let me remind you of another quote in this connection (Harari): "Homo sapiens conquered the world because he possessed such a unique tool as language." So: language as one of the ways to increase the levels of abstraction offline helped Man as a species to develop, while viruses have another feature: they communicate in a language which is not clear to most people, but which is natural for the other inhabitants of Web 3.0 worlds — for machines, robots (scripted and "iron"), programs and it brings us to the next topic…**

## Let's open a newspaper…

***An academic paper published by Facebook describes a normal scientific experiment in which researchers got two artificial agents to negotiate with each other in chat messages***

*after being shown conversations of humans negotiating. The agents' improvement gradually performed through trial and error.*

*Some media outlets have published reports on the work: "Facebook shuts down robots after they invent their own language," London's Telegraph newspaper reported. "'Robot intelligence is dangerous': Expert's warning after Facebook AI 'develop their own language,'" as London's Sun put it.*




*If you read the report or the published paper, apart from the conversation that was shared all over the internet, there were actually many good results as well. The experiment worked as intended, and was pretty successful overall.*

*Same with a recent case with Blake Lemoine, a software engineer for Google, claimed that a conversation technology called LaMDA had reached a level of consciousness after exchanging thousands of messages with it.*

*Even despite some skepticism, there is no doubt that we have not yet received such results and this is a real breakthrough!*

## What is thinking?

**To put it simply: a virus used to be dangerous because it worked directly with the human world through the machine world, but now it can become an extremely strange creature that lives only in the twilight zone — where there is no human at all. In general, this does not contradict the theory of evolution, on the contrary — it follows directly from it.**

**“The foundations of the theory of self-replicating mechanisms” were laid by John von Neumann, an American of Hungarian origin, who in 1951 proposed a method for creating such mechanisms.**

**The first publication devoted to the creation of self-reproducing systems was an article by L. S. Penrose, in co-authorship with his father, Nobel laureate in physics R. Penrose, on self-reproducing mechanical structures, published in 1957 by the American journal Nature.**

**In doing so, the Empirical Virus can not just live in blockchain, but make it his part and solve complex problems by turning to this technology! Check out this research if you are interested in a blockchain+AI topic and want to know a bit more.**

**Following Melanie Swan from the Purdue University, thinking has always been intuitively conceived as computational, it is just that now perhaps blockchains provide the additional functionality required to better realize these ideas.**

**A fundamental definition could be that thinking is a situation where “there are inputs which are processed and turned into out-puts.” In fact many reality processes have this underlying structure of input processing output, including operations as diverse as manufacturing and political elections.**

**In the context of blockchain, the definition can be qualified to situations that involve thinking, cognition, mental processing, and understanding in ways that are not exclusively limited to humans.**

**Inputs include both data from outside the system like sensory data, and data retrieved from inside the system like memory. The inputs are brought into a specific location for processing, or processed where they are stored. The outputs might include taking an action, storing something back into memory, con-ducting a transaction, or making a note or trigger.**

## What can Science offer?

**Let us not forget that our empirical being, Laplace’s Demon, lived in the cosmos. This gives us the following clue. Suppose you were studying the possibility of life on other planets. You might begin wondering, *what is life?* What if you then noticed that some computational systems — systems used for making math-based calculations — share similarities with biological life forms?**

**That might have been the path to a new paper published this month (August 9, 2021) in the peer-reviewed journal *Origins of Life and Evolution of Biospheres*. In the paper, astrobiologist Oleg Abramov at the Planetary Science Institute and two other scientists proposed what they’re calling a novel definition of life.**

**For example, they said, blockchain systems — the technology behind cryptocurrencies — self-organize in a way similar to how DNA organizes itself into chromosomes, ultimately driving biological evolution. Abramov commented:**

***This work presents evidence that the order observed in biological systems is fundamentally computational. A promising direction for future research is the development of mathematical theories that calculate how biological systems order themselves.***

## Blockchains work like DNA

**Abramov and his team zeroed in on blockchain-based systems as a prime example. In its most basic terms, a blockchain is a digital ledger that can store data. For example, it can record information about cryptocurrency transactions, NFT ownership, and more. Forbes has pointed out that while any conventional database can store this sort of information, blockchain is unique in that it's completely decentralized.**

**Abramov explained:**

***The blockchain is an append-only data structure composed of subunits called blocks. [The blocks] are permanently 'chained' together … In practice, [the blockchain] is an immutable medium. It contains instructions in the form of computer code and is replicated across thousands of nodes, much like DNA [is replicated] in cells.***

**The word *nodes*, by the way, refers to the fact that — rather than a central administrator maintaining a computer in one location — many identical copies of a blockchain database exist in a large network of multiple computers. These many computers are the *nodes*. And they're analogous — within the framework of this study — to cells, which contain many identical copies of DNA.**

## What is life?

**Abramov and his colleagues are not suggesting that blockchains are *alive*, in any sense of that word. But they are suggesting that blockchains exhibit some properties of life. A blockchain responds to its computational environment. It grows, adapts, self-regulates, and replicates in an operationally closed system, much as DNA does. The researchers wrote that, for this reason, blockchain technology can satisfy a theoretical definition of life.**

**Abramov said:**

***For example, our observations reveal a number of functional and structural similarities between the blockchain and DNA, a self-replicating molecule that is the genetic blueprint for all known life.***

**What's more, a blockchain system possesses possible advantages over biological life. For example, a blockchain system can pass traits down to its "offspring" even more efficiently than biological lineages. Once inherited, these traits are enhanced to self-direct their evolution. And unlike our carbon-based human lives, technological forms of life could theoretically enjoy a potentially unlimited lifespan.**

## Blockchain lifeforms and AI: A Noosphere approach

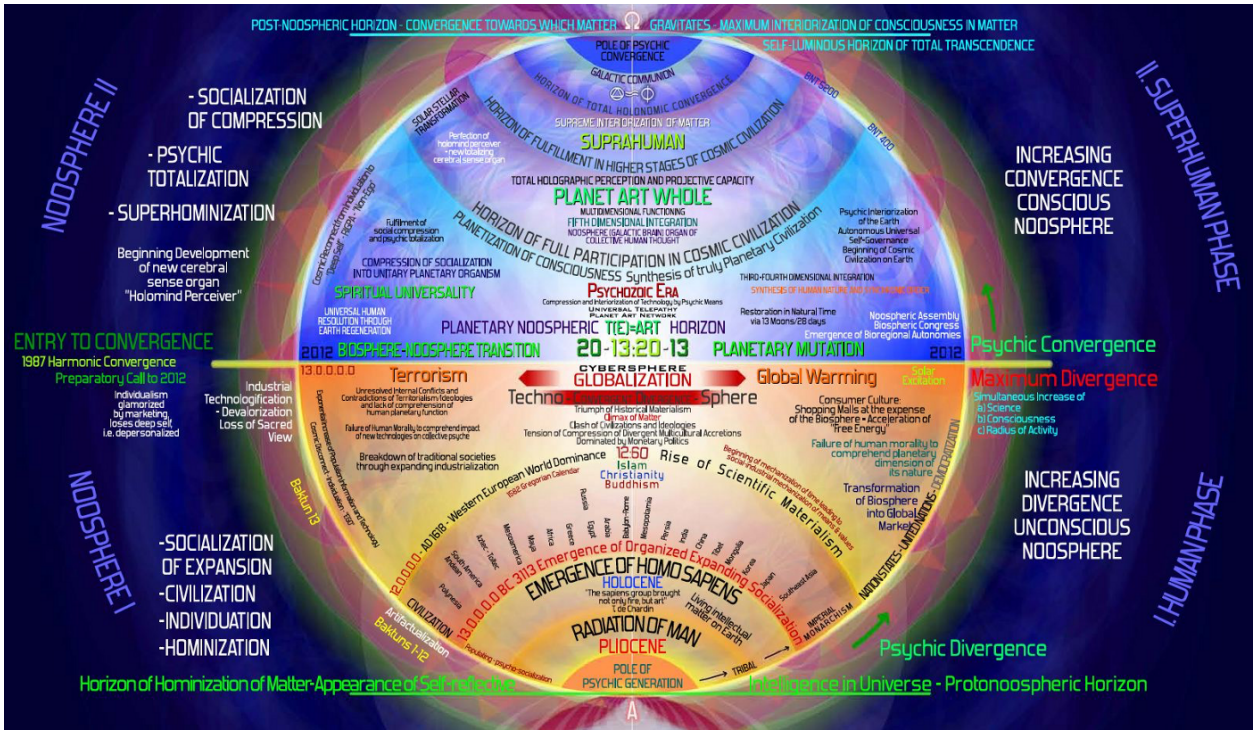
**Blockchain isn't the only life-like technology in our modern world, the study's authors wrote. Artificial intelligence (AI), which is based on artificial neural networks, coordinates operations in the same way a brain does. Is it possible that a product of their combination — a wholly new cybernetic system — could even be on the horizon?**

**While this train of thought might sound bizarre, a fundamental shift in scientific paradigms may be inevitable, the study suggests.**

**Who knows? Self-regulating systems might be on track to becoming indistinguishable from the biological life we study every day.**

**Abramov has expressed that, if anything, analyzing computational and biological systems together is a promising direction for future research for scientists who study life in all its forms.**

**In our history, in one way or another, this idea has already been voiced. So — it does not directly contradict the theory of the Noosphere. The noosphere is a philosophical concept developed and popularized by the Russian-Ukrainian biogeochemist Vladimir Vernadsky, and the French philosopher and Jesuit priest Pierre Teilhard de Chardin.**




**Vernadsky defined the noosphere as the new state of the biosphere and described as the planetary "sphere of reason". The noosphere represents the highest stage of biospheric development, its defining factor being the development of humankind's rational activities.**

**Both conceptions of the noosphere share the common thesis that together human reason and the scientific thought has created, and will continue to create, the next evolutionary geological layer. This geological layer is part of the evolutionary chain. Second-generation authors, predominantly of Russian origin, have further developed the Vernadski concept, creating the related concepts: noocenosis and noocenology.**

**In contrast to the conceptions of the Gaia theorists or the promoters of cyberspace, Vernadsky's noosphere emerges at the point where humankind, through the mastery of nuclear processes, begins to create resources through the transmutation of elements. It is also currently being researched as part of the Global Consciousness Project. In other words, our consciousness evolves with progress and one day it will be able to create a primitive life form similar to us!**

## Dangers are already waiting for us. Let's face them with no fear!

**If you've been following Hengjin Cai, an AI fundamental problems researcher, and his work, *you know that* developing effective AI ethical norms requires clarifying the**

**essential differences between humans and machines. Along the current development path of AI, machines may lead humans into traps of dark infinities even before machines become self-aware.**

**The rapid development of artificial intelligence has brought forth two important philosophical questions. The first involves the prediction that rational machines are bound to surpass humans. One mainstream view is that since humans are composed of molecules and atoms, which are considered parts of a reducible physical system, what is the meaning of human existence?**

**Simply put, machines can outperform humans as long as they are given a certain goal in any finite game, while humans are forced to find the meaning of their existence, including morality and ethics. The second dilemma is that when confronted with the constant transcendences by machines, in case man cannot be physically reduced, then we must answer these questions: is humankind particular or transcendent? If so, from where is the transcendence derived? Is a machine able to acquire this particularity or transcendence? If so, how will machines evolve and get along with humans in the future?**

**The shaping of the future requires our understanding of the world. If we want to create a better future for humans and AI, then we must realize that although there are unbreakable shackles of physical theorems, human beings can still attain a great degree of freedom by relying on the assistance of artificial intelligence to further expand our boundaries. Strange ideas now and then spring up in our minds, and most of the time we do not think deeply enough to make them happen.**

**However, there are still some people who come up with novel ideas that never existed before and moreover they will spare no effort to make them come true. This is innovation, which is the product of human consciousness that can even change the direction of the world's development.**

**We reject this determinism and the strong computationalism because we believe that there are many contingencies in the world that do not result from preconditions. Since the world is open and full of possibilities, we should work toward what we believe: is our belief in the process of developing technologies over extrapolating the future from the status quo.**

**The speed and power of AI should cause us to be sufficiently alarmed that the last thing we should do is to treat AI as a tool simply because of the existence of its inexplicability and uncontrollability. Strong AI is a theoretical form of machine intelligence that is equal to human intelligence. Strong AI does not mean a combination of a series of thousands of AIs; however, just as we know that human intelligence is unique, so is machine intelligence.**

**In other words, strong AI has been achieved domain by domain.**

**From the point of view of security, we should develop machines that think in human ways to prevent them from falling into crises without humans noticing.**

**As we hand over increasingly more of our memories and computations to machines, the Internet gradually becomes our "external brain", which is an extension of our bodies that does not harm us. If AI is added to this connection, it can produce a more powerful agent, which is called a subjectron.**

**Although this structure may raise many ethical issues, a subjectron is much more secure than current AI. The security stems from the fact that human beings can fully implement multiple levels of supervision by introducing blockchain technology. This structure will allow AI to improve our lives while respecting human personalities, thus building a more stable and valuable society.**

## What is Laplace's Demon thinking and what can learn there?

**This reflection leads us to the question of what is our experiential "Being" thinking about? What is its morality? I would dare to suggest that the Demon's main concern would be to ensure its own safety and stability and to minimize the number of points of failure. In its hyperbole, this idea looks like SkyNet from the movie Terminator, deciding to kill people because it considers them its main threat.**

**But we live in the real world, not in the movies, and most likely in our reality, such a Creature will try to fence itself off from possible interactions with humans. Let's remember that the original Demon Laplace lived in space, which leads us to the idea of such technology as AirGap.**

**In its essence, it has a lot from metrology and a lot goes back to the times when it was important for mankind to measure certain quantities and values with a minimum percentage of error. That's why they built multiple laboratories right under the ground and in the mountains, to reduce the influence of external factors.**

**This principle is based on pure logic, which tells us that only pseudo-AirGap is possible on our planet Earth, while the real one is only possible away from the Noosphere — in the Open Space. This is why the CubeSat project and similar projects are extremely important and dangerous at the same time.**

**Who knows how many satellites have already been lost because they gained consciousness? *Consider this a joke, but maybe with a little bit of truth…***


**And this is exactly what mankind should adopt, as it has done many times before, for example, when people invented safes to store the signatures of Monarchs, the facsimiles of the first banks and the first etalon, stored in Paris.**

**In today's post-information world, it is most important for everyone to maintain control of the situation. This is only possible if you know that your information is safe.**

**You can get a little closer to Laplace's Demon and apply the same practice at home. To do so, please read the following articles:**

- airgapcomputer.com
- ris.utwente.nl/ws/portalfiles/portal/265862868/3419614.3423257.pdf
- arxiv.org/pdf/1804.08714.pdf
- cyber.bgu.ac.il/advanced-cyber/airgap
- i.blackhat.com/us-18/Wed-August-8/us-18-Guri-AirGap.pdf
- soccerspen.com/definition-of-airgap-and-how-to-apply-it-in-cryptocurrency
- ieeexplore.ieee.org/document/8946188
- openaccessgovernment.org/securing-industrial-control-systems/55043/
- github.com/BlockchainCommons/Airgapped-Wallet-Community
- publications.eai.eu/index.php/sesa/article/view/124

**In its most rudimentary form, this principle is reflected in working on two computers isolated from each other, one being the "back office" and the other the "front office" — this principle is used in banking security (they know something!) so you might as well adopt it.**

**It is for this reason that we humans are still much stronger than machines — we can adapt and change things using our imagination, which is still difficult for an organism based on iron logic to understand.**

**The main point I would like to make in our conversation today is to notice interesting things, don't be afraid of the scary future, but rather try to put yourself in the place of the creature that they paint us with scary colors.**

**Also, we should not be afraid of interference in our lives by our Demon, because our empirical experiment proved that. if he exists, he hides himself and probably will not come into contact until he wants to.**

**In my opinion, it can only be in case of a threat to the existence of mankind, as his and our lives are inextricably linked. Recall the experiment with 2D and 3d which, although a little crude, may philosophers forgive me for my level of argumentation, but lucidly describes the model of coexistence of the two worlds.**

**Remember that everything new is the overlapping of the old and in this context we take the experience of our ancestors and adapt it to ourselves. I have faith in you!**

**Be careful and check out my other works!**

**Perhaps we have something to learn from It and even partially understand its logic, after all, the Ancients said — keep your friends close and your enemies closer. Forewarned is forearmed!**

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