

The Origin of Life on Earth

Life on Earth have started approximately **3.5–4 billion years ago**, during the Archean Eon. The conditions on the early Earth provided the essential ingredients and energy sources for the formation of life. Multicellular organisms appear 1 billion years ago. Cells began to organize into multicellular structures, allowing for differentiation and specialization and that lead to Cambrian explosion later and the complex chain of events resulted to what we have today, intelligent living organisms that with mechanisms of error and trial and adaptive solving abilities like creating spear to hunt and survive easier.

As we saw, the adaptive solving ability allows homo sapien to find the missing pattern to expand their limits and as result they increase order of life complexity unlike any other living organism, because those organisms that we call animals, they only adapt what nature has to offer them or else they die. The miracle of existence in terms of entropy is that, single celled organisms, from eukaryotic protists to prokaryotic bacteria, divide (i.e. reproduce) via a process called binary fission, from simple order of atoms that barely could spread order to random objects, with enough evolutionary progress billion years to large scale global interconnected network of 21 century. Statistically on entropy such chain reaction of events to result to that complexity is practically a statistical anomaly of the universe, homo sapiens or even our ancestors are already anomaly, let alone the technological era of 21 century!. The fact we avoided with such precision a nuclear war that statistically should be high in 20 century since it could gone wrong in so many ways with their “ape mindset” at the time.

Complexity and order

Order is organized structure of interconnected web. Complexity describes the inner mechanisms of interconnected networks of order. That’s the explanation of what is order and complexity. We try to give as many versions of explanations of order as possible, another way to look at it is, order in case of entropy is when ordered atoms try to maintain itself rather than sharing the energy with surroundings and collapse and be a slave of entropy, that’s how you can describe life from physics and is possible there might be more creative ways to do it, but either way the meaning will be the same and the nature of life is universal, all are about perpetual order against collapse known as entropy, a unit of energy sharement. As we know, entropy itself is not unit of information and chaos, rather is a statistical result because nothing with order in the universe is known to maintain itself the atoms in ordered way by creating more order to maintain it longer. That’s the physics of life.

What about physics and life?.

Converting physics of life into everyday use case in human life. One notable vital step and example that is largely overlooked even when the science is here to achieve it, is called a objective universal meaning of life and physics of life can do it, but is not mainstream yet. Physics inevitably define reality and objectivity, is universal measure of objectivity. That's because just like a video game, physics shows how the mechanisms of reality how it works and they are not beliefs or perspectives, is not something to be reprogrammed or changed as far we know!. The logic of every action has reaction is the ultimate example of that because otherwise it would be logical fallacy. Denying physics is logical fallacy by default because they the cosmic rules of reality.

Erwin Schrödinger's work, "What Is Life?," and more recent publications like the National Library of Medicine's "On the Statistical Mechanics of Life: Schrödinger Revisited," help us understand that life itself is a form of entropy. Life, as we know it, represents an anti-entropic system—a state that resists the natural spread of energy toward a chaotic, disordered existence. Life saves energy to build further order, rather than dissipating it into random, chaotic states. This pattern-preserving quality of life is what earns it the label of an anti-entropical system.

The nature of survival from physics

The history of anti-entropical systems and the evolution of objective drive, was all about survival. Survival in physics means atoms that consume others atoms to save energy and release that motion in mechanical way maintain order instead of collapsing, that's one way to see it when we talk about the earliest forms of life known as the first living organisms on earth billions years ago. This survival mechanic reprogramming was all about consuming to save energy that keeps the order of atoms and that is the purest nature of life in physics. Anti-entropical systems are also entropy in different form, instead of releasing and adapting to nature to share energy, life as order is adapting and saving the energy. Atoms that save energy it doesn't mean we decreased entropy the rate of energy that is shared, it simply means we increase entropy with more complicated way of energy operations rather than equilibrium monotonous state, in which energy fluctuations are all equal as patterns, either way is the same result and from perspective of physics it doesn't matter if "saving" will maximize the energy sharement or "releasing" will maximize random energy sharement in the end, both are patterns of adapting in nature in terms of energy. In physics, efficiency of energy sharement can never achieve 100 percent efficiency, in other words the more energy self perpetuating atoms called life they get, they more order inevitably they increase and they will reach a limit where 100% of order cannot achieved, just like how 100% of chaos cannot achieved. Does that

mean life is destined to fail?, the answer is no since 1 unit of energy waste is basically recycled and wasted and as result the rest percentage of information that is left is practically becoming deterministic in theory as long as order is maximized within all available matter in the universe. Order reaching the limits of its nature is a specific topic that only a civilization type 4 could only achieve and that's a topic for different research area and here the research is about how the logic behind physics of life can applied to everyday life?, the most obvious would be the meaning of life.

Objective universal meaning of life.

The idea of meaning and ethics and values was always in the realm of philosophy, that's because philosophy is making us think for things that current science cannot answer yet. But overlooked science data will change that, it will transfer the meaning of life from philosophical realm to the scientific world for the first time history. Why it was never done like that?, that's because the physics of life were very recent and very neutral like the work of "what is life" from erwin schrödinger. Erwin schrödinger did his mission as it should to explain the nature of life, his paper helped to get the discovery of DNA, so even theoretical papers can help in unpredictable ways. His paper was created and it was just waiting for powerful experts to make conclusions based on the principles about life from physics called "bio-physics" but nobody could imagine a way to bridge a direct link of erwin schrödinger from physics of life to everyday life use case.

Life allowed order to gain more order in perpetual way, so is statistical outcome of where atoms are adapting and mechanically becoming more ordered to shield itself from collapse, keeping this perpetual nature. This miracle cannot applied everywhere, is just statistical chance where the atoms of life will adapt in the right place, in theory the unlocked maximized adaption pattern is practically a entire universe becoming self aware as giant universe brain and it requires the right timings to go gradually to that state to unlock that state by consuming all the energy of the universe, life on earth is equally lucky to be that way as currently is today. It might sound weird for so separate things to become unified cosmic intelligent of order by just saving energy, but lets not forget life from single organism lead to creation of animals and humans with trillions of cells and all those cells working separately just to allow the creation of thoughts and consciousness as united brain. The separation is illusion at this point when many local scale order are communicating in ordered way in terms of information, it means ordered information is crucial to make separation gap solved just like our cells do, in theory it could work with the entire matter of the universe are interconnect as intelligent web. Humans achieved a version of survival reprogramming and is called mental survival, mental survival connects dots of experiences to predict the next move that promotes consumption of biological matter to keep your order and that's how religion of god was born later,

is not just detecting bio-matter to hunt it and consume but it predicts what to do before any action.

Religion is basically creative prediction as mental image of maximized survival and that mental image is a all powerful leader that helps the group to get easy reward sounds great to be true, so humans trusted the very own mechanism of nature and that's how god as ultimate leader was created known as the ultimate survival objective. That version as simplified form of objective survival was not wrong by its core, a all powerful leader is basically a state where life achieved absolute control of everything and that's atoms predicting the limits of whats in terms of order possible in poor quality view based on limited experiences. Later, the person called Darwin changed everything about human objective and that was disaster, for the first time in history a mental virus about self destruction was created and that is statistically inevitable outcome of entropy for high level of order to get corrupted compared to simple level of order, even some cells can self destruct but is unlikely nature statistically speaking.

The information about origin of life destroys the poor quality predictions of ultimate survival known as god, so removing the idea of ultimate survival and replace it with neutral reprogramming with previous version of survival reprogramming that was "mere survival" that is all about to consume but it has nothing to do with order, it basically shows survival is nothing special and it is the same with all animals as equals in terms of objective and the universe about the nature of life doesn't care about absolute order like a god, a god that can do everything it means intelligent and absolute intelligent means absolute order, but Darwin destroyed that objective from the information network of human brains and that's how we have today the chaotic mental virus of self destructive reprogramming called "pure nihilism."

This social evolution was naturally a self destructive mental virus and pure logical creatures would not survive due that fact before the digital era or mid 20 century at least, thankfully statistically humans were highly emotional and impulsive creatures and they embraced the idea of living like animals and they continue to reproduce, while religion was falling. Humans thought biology can determine the nature of life objectively and universally, but that was wrong thanks to more advancements that are made for survival patterns and that made us to understand the rules of reality better and that lead to know the rules of life from matter itself instead of details of life like biology and Darwinism.

This is what I mean to get information in the right time and place, Erwin with the book that created "what is life" basically finally debunks the reprogramming that is all about consumption to maintain order but not caring about increasing order like animals do by predicting nexts moves for more efficient energy savement and faster.

You can see the patterns here that the more energy we get, the more patterns we can unlock about survival.

The Laws Governing Anti-Entropic Systems, lets establish the laws that govern anti-entropic systems, which are derived from the observable behavior of life and energy systems: [1] Anti-entropic systems consist of ordered or complex matter and are characterized by the ability to absorb more energy than they release. This surplus energy is used to build and maintain the system's order. [2] Anti-entropic systems possess self-repair mechanisms that allow them to restore any lost order and maintain their structural integrity. This capacity for self-repair is essential for their continued resistance to entropy. [3] Increased complexity leads to further complexity. The more ordered a system becomes, the more it is capable of further increasing its order. This positive feedback loop allows anti-entropic systems to continually save information, predict patterns in their environment, and use those patterns to further enhance their complexity. By following these laws, anti-entropic systems can grow increasingly ordered, perpetuating their existence while countering the effects of entropy.

Conclusion :

This leads us to conclusion that the ultimate meaning of life based on all this explanations that we covered up, that the universal meaning of life immune to subjectivity and perspectives since the cosmic laws of life are now clear, the meaning of life is to achieve absolute order in physically and mentally. If life achieve absolute order, then we achieved a anti-entropical universe and were civilization type 4 that can even resurrect the dead from the dust no matter when and where. Why absolute order mentally instead of just physical?, that's because the nature of life is meant to win challenges and the idea that challenges do not exist, makes no sense for life nature no matter if is simple or complex brain, is meant to fight and try new things to unlock new patterns that often bring order. This is why humans dream to become reality warping gods with unlimited options to fight eternal boredom in case of immortality if is achieved, life just want to save information since its own nature like that and create more patterns, it do not want to left anything. Negative and positive patterns are crucial for predictions of survival, that's why humans love creative plots of drama even it has little utopian set. But brains hate extreme patterns like absolute chaos because predictions meet a end and absolute utopia also meets a end in predictions to promote more survival supposedly based on our reprogramming and that makes no sense for any advanced brain, were created to fight for ever and that's mental survival is crucial and not just physical. Mental

survival is basically the same of what animals do, but in our case is advanced that allows self-perpetual patterns to increase more energy savement.

This research is meant to be a baseline for future work to expand beyond just meaning of life, it will help to get objective values and ethics and that's why is important for AI alignment like we mention in our previous papers "Science of resurrecting the dead is engineering problem and not impossible 2024." and "What it means a resurrection for intelligent life based on current understanding of life and entropy?. Continuation of the explanation expanding it in more detailed way and how afterlife looks like." This science article about meaning of life allows experts to translate and convert any subjective information into objective information, since physics of life are based on physics known as "anti-entropical laws."