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What is life…?!?

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Abstract
This article offers the possibility of non-traditional views on life. Above all, it presents it (life) in the context of its relations to the microsphere, macrosphere and consciousness. It emphasizes its subjectivity, as one of its important characteristics. It presents some hypotheses of important scientists and thinkers that have not yet been strictly scientifically proven, and modestly offers several of its own. It tries to show life not only in the context of knowledge, but also in the context of faith and beauty. It claims no universal truth, but humbly claims to be part of the discussion on the subject.

Keywords: quantum physics, decoherence, biosphere, abiosphere, microsphere, macrosphere, dataism, evolution

Introduction

Perhaps we should first question what business do two authors have, who are neither biologists, chemists, doctors or philosophers, nor anyone or anything else that should or could relate, on the search for the answer to the question, “what is life?”. Except for one thing, both authors are living creatures, "living beings" and thus feel a natural right to comment on what they are a part of, even though their lives themselves are mere "moments" in the flow of history. Their first joint text, entitled "Know Thyself" [1] led them to believe that life cannot be examined only as an object, somehow in a third person, as "it". The idea was based on the understanding that all "living beings" are self-conscious subjects, albeit on a very different level. Mind and nature necessarily form a unity [14] and cannot be simply separated for the purpose of any model or theory.

The question of what life is both bothers and inspires people of all origins and backgrounds, through the ethnic and religious to the socio-economic, since the beginning of time. If the old wisdom applies that we should not turn a good question into a good answer, then our question is one of those that presents a huge challenge to provide an answer with at least some meaning. With a little effort, the question "what is non-life" comes to mind when we ask "what is life", as well as, where is the transition between living and non-living when both consist of the same particles? Where does the energy needed for life to do everything it does come from, or at least why look like it does…?!? Is it real life that we ask for, or is it just information about such, and it itself is hiding from us!?!? To what extent is it our own ability or rather inability to perceive, and to what extent are these gaps in the stories, in the causalities that we tell about life, because otherwise we cannot communicate? And, whether we fit into them just anything ...?!? Is it just about secrecy and closedness or also about openness!?!? How do intelligence and exteligence relate to one other!?!? How do plan and evolution relate to each other?!? The aim of the text is to provide an unconventional view of the questions asked, and to make the reader think about not only the complexity, but also the beauty of life, which we have the honor to share together.

Life and its environment

All living organisms have common characteristics [2] - they have a cellular structure with a genetic code, they are able to grow, develop and reproduce, they respond to impulses (stimuli), they need energy (metabolism) with the ability to maintain (regulate) their stable internal environment (homeostasis), they can adapt to changed external conditions and carry

out long-term evolution through natural selection. Life begins at the level of the cells from which the tissues are formed, generating the individual organs up to a specific living individual. From a completely different point of view, life is characterized as a bodily, innate, semiotic system with memory [16].

However, life does not end at the border of the individual, but continues by defining the population of individuals, biological species, the ecosystem up to the biosphere. Manifestations of life can be seen all around, because, as „living beings", we naturally developmentally prefer life to non-life. However, this preference is increasingly convinced that its appearance is due to the fact that it is caused by the brain of a living organism. Naturally, in its pride, life considers itself more important than non-life. Just as when a human proudly and unjustifiably stands above other "living beings". At present, it is provable that they cannot exist without one other, they are reciprocally conditioned.

Much of what geology is now about would previously have been the subject of biological research, if any biology had existed. At the same time, non-life is a life-giving resource for the present and future life of the organism, which, when its duration is fulfilled, will enrich it with its dead bodies. And so on and so forth. Biochemistry and geochemistry intertwine and are covered by astrochemistry. Sometimes something flies, God knows where. Water, which makes up more than two-thirds of human bodies and is the basis of life, is largely descended from deep space…

All living things, all the "living beings" that we are able to perceive around us, are our contemporaries who have gone through the same long journey of several billion years of evolution. They are our partners in a game called life, they are not our ancestors. They are just different and are in a different stage of development of their own kind. With them and only with them we can negotiate the future shape of our environment, life and everything that surrounds it. This negotiation concerns what S. Kauffman calls "the nearest next"[3]. Each vote counts, even if it has a different weight at different times and in different places.

Viruses, microorganisms from the border of living and non-living, even living bacteria, which we humans often do not even perceive, begin to come to our notice the moment they enter our lives, just as COVID-19 has done recently. The fact that we can often control them as humans, ie more complex organisms, or at least we have that feeling, is perfectly balanced by the fact that we cannot live without them and very often not even with them. The fact that they are here with us means that they are constantly evolving, processing information from their environment and using it for the next journey through their lives. Although there are what we call "living fossils", no one can say that evolution does not take place in these organisms.

Furthermore, it is necessary to realize that at every moment, the life around us is a somewhat different one. Not only its forms and content, but also the rules of its evolutionary development are changing. It would be a profound misunderstanding of evolution to seek its unchanging rules and order. There is really no such thing. The laws that we can sometimes record and sometimes even describe are time-dependent, as is the form of order that may be shown to us from time to time.

We will certainly find a contradiction between the relatively simple rules in the purposeful behavior of individual organisms and the somewhat more complex and still unknown rules of conduct of their biological and social communities – in other words non-purposeful behavior of life as a whole and evolution as its main process.

It is important to note that life on our planet is about four billion years old according to current scientific knowledge. From our position as mortals, it is a vast, virtually unimaginable amount of time that life has had and has at its disposal to arise, evolve, and perish.

Life was formed at every moment in a very complex context, as it is sometimes said, under given or certain conditions. The problem is that we know as little about these conditions as we do about life itself. It is therefore possible to carry out a number of experiments aimed at the possible origin of life, but in reality we have only a very small degree of certainty that we have created at least about the right environment, similar to what was here billions of years ago.

We have an environment around us composed of various imbalances that are a source of change and movement. These imbalances have accumulated during the existence of space-time after the creation of the present form of our universe and have created countless patterns in our world, which we have succeeded in discovering and confirming thanks to life experience and its transmission from generation to generation. Over time, human communities have developed a number of methods that have systematically dealt and continue to deal with the search for laws and their description. Science is, of course, one of the most successful in this regard [21].

It is crucial to realize that the laws in our environment are subject to the same evolutionary changes, and however difficult it is, living organisms can contribute to the creation of their current environment, its imbalances, inhomogeneities and the laws of their origin, duration, extinction and relationships between them. This is all the more difficult the longer a certain rule exists in our environment, because the first criterion of evolutionary success is the criterion of "continuance". What is possible, on the other hand, is to find ways to suppress or strengthen their impact on our environment. This applies not only to the so-called natural laws and their descriptions, but also to laws in the cultural environment, society, economy or politics. If organisms could not change and organize their environment, they would undoubtedly perish.

Next, we need to answer the question of what it is like to be closed and open to our environment, for lives. All previous attempts that proved the possibility of closed living systems functioning, sooner or later failed. The latest evidence is the collapse of the ecosystem in a complex experiment called "Biosphere 2" in the Arizona desert. Despite the fact that a number of scientific teams participated in the realisation of the project, which tried to imitate the conditions suitable for life and its maintenance as best as possible, something was evidently missing. In the end, the human factor itself proved to be a weak segment… It is obvious that one of the basic characteristics of life against dead matter is freedom and its reverse, therefore, necessity [4]. Organisms enter into fundamental relationships with the surrounding environment, which can be considered unique. In order to survive, the living entity actively violates, uses, and changes his environment. Life must be open to the world around it, to transcend itself in a way, because it must earn resources from the world around it to meet its needs.

Life is a continuous process of reinterpreting foregoing experiences stored in various types of memory, most often in DNA. The fact is that where experience becomes dogma and is not open to future reinterpretation, the community is only patiently waiting to become extinct, while it is lying to itself and the whole world that it has reached perfection.
So far, there is a strong tendency to examine the past so that we can better understand the present and predict the future. Perhaps the opposite would be more beneficial [15]. What we live in is necessarily our own reinterpretation of foregoing experiences, and we should try to better understand and use these past experiences as much as possible. Rather, it is the rule that other communities see the past differently and give it different meanings because they experience a different present. In this sense, life is undoubtedly a living embodiment of the idea that "history is the teacher of life."

Mysteries of the microworld

The twentieth century brought the phenomenon of quantum theory. Like any really good theory, it opened up far more questions than answers, but it also offered the possibility of a whole new perspective on our world. It has become one of the most important theories of the twentieth century, in addition to the theory of relativity, chaos theory or string theory. For more than a century, we can say that we are employing quantum theory much like a primitive man with fire. We can use it a bit, we know a little about it, but we still don't know its essence. What we have come to know, very recently is that living organisms can obtain information from the quantum world. This is, for example, the information needed for orientation according to the magnetic field, which living organisms can evaluate according to the positive or non-positive spin of electrons [5]. It can therefore be said without any doubt that life is connected with the quantum level of our environment.
The famous physicist N. Bohr, the author of the principle of complementarity [6], once said: There are two kinds of truth - trivial truth, for which opposing views are completely absurd, and profound truth, which can be recognized by that its opposite is the truth again. Complementarity therefore leads to the tantamount complementing of contradictory or incompatible descriptions of a phenomenon. Thus, thanks to Complementarity, it is possible to achieve overall knowledge (not only in quantum physics), where two well-founded concepts are equally indispensable in describing the same phenomenon, while both are mutually exclusionary. For example, one phenomenon can be understood using language La, whereas the other using language Lb. There is no aspect of this phenomenon that can be described by both La and Lb. Quantum physics reminded us that we are both spectators and actors in the great drama of existence, and that neither of these parts has priority over the other. The phenomenon of life is therefore difficult to study only by physical approaches, because compelled observation would cause the death of the organism. Therefore, there is a need for complementarity of knowledge of physical, biological, chemical or other views of our environment, which together bring us closer to answering such a complex question, what is life.
The phenomenon, so far insufficiently explained, called "decoherence" [7], or the selection of a specific state in measurement, plays a crucial role in quantum physics. All we know is the probability with which a particular state will be selected, but we do not know the method of selection. Many physicists think that decoherence is conditioned by hidden parameters. Behind every conscious decision of man there are thousands and thousands of unconscious activities that are hidden from us [27]. We can also imagine decoherence as a way in which we think - what I am thinking about is the realization (measurement) of a specific state. Maybe we can think of more than one thing at a time, then it's a "superposition" of several states. When we stop thinking, the states dissolve and return to the ocean of conjointly "intertwined" thoughts. Thalamocortical reverberation [27], or recall of various things, is a beautiful walk through our consciousness, where all experiences and acquired knowledge are reflected. With their non-traditional combinations we can gain new feelings, impulses for further activities, which represent inspiring intuition. And all this is done by means of phase parameters, which regulate the relationships between individual states and which are a key phenomenon of the quantum world. Let's ask the provocative question, what is behind the phase parameters, who set them like this? One of the answers may be our subconscious, which has prepared everything, but this theatrical performance remains hidden from us. Albert Einstein himself believed that quantum physics must have hidden parameters [8] that control phenomena such as quantum entanglement, mass-parallelism, or decoherence.
Recently, there have been reflections on the "noetic field" [9], which is not a newly known physical force, but which is based on synchronous switching of the phase parameters of individual elements. Quantum physics was invisible to classical physics, because in addition to energy quantities, it worked with internal interrelationships described by phase parameters. We can imagine this difference by means of harmonic signals - our ear perceives only the frequency and strength of a certain tone, so the phases (mutual shifts of partial signals) are indistinguishable for us. However, in further processing, for example in the transmission of a television signal, this is already essential, since, for example, shifting signals with the same frequencies can lead to complete suppression or significant amplification of the overall final signal. For a complete description of television signals, we need to move at a deeper resolution level and to deal with phase parameters.
Similarly, for quantum physics, the "noetic field", which is based on synchronous phase switching, is invisible. It is similar to "phase modulation", which encodes a useful signal. There are many signals and each element can carry an encoded signal. It is therefore important where and at what times the useful signals are located. For simplicity, the useful signal can be considered as two-state - one or zero. The noetic field determines the shapes of zeros and ones in space and time. It is a deeper dimension of encoded information invisible from the point of view of averaged phase parameters. The spatiotemporal synchronicity of phases can create fractal patterns by intertwining between partial resolution levels. Attraction or repulsion between individual patterns (quantum clusters) can create more and more structures that can determine the states of our consciousness, but can also lead to controlled decoherence, whose manifestation is life itself.
It is certainly possible to state that life at the micro level is inextricably linked with water, which is the medium of all

biochemical reactions. It is generally known that two-thirds of the human body consists of water by weight - but by the number of molecules, only one percent of all molecules does not contain water. The importance of water for life has not been significantly recognized until the last two decades. Compared to how important water is to life, its significant knowledge has only occurred in the last two decades. For example, individual water molecules can be viewed as dipoles. The fact that one part of the water molecule has a small positive charge and the other a small negative charge leads to the formation of different clusters of molecules. Therefore, water is not homogeneous, but on the contrary it hides an information structure with interesting properties. For example, vitally important hydrogen bonds are known.

As we move in the dimensions of quantum physics, sub-clusters have the properties of quantum objects. In water, so-called coherent domains are formed [10], when clusters begin to behave as a single quantum object. At the same time, an electromagnetic field, called the quantum vacuum field, is formed around the coherent domains, which is sensitive to various resonant waves of another magnetic field. The stability of coherent domains arises from the energy difference of ordered and disordered clusters. Those ordered (coherent) have lower energy and entropy. Due to this energy difference, no energy is needed to maintain order. At room temperature, water molecules spend about half the time in coherent domains. Other molecules that oscillate at the same frequency as the coherent domains of water are attracted and can thus chemically react according to the frequency mode.

It is a musical performance, a concert where the individual players are waves of the electromagnetic field, and the result is various chemical reactions. When resonance occurs, the otherwise separate effects may combine to create something unexpected. The notation according to which the play is performed is well-known and relatively well-examined DNA. Water in living organisms symbolizes a large orchestra that can interpret compositions written in the musical score of DNA in all parts of our body. As musical instruments he uses various coherent domains of water with the properties of quantum objects such as coherence, intertwining and superconductivity. These instruments can be controlled by the resonant frequencies of the electromagnetic field. Water clusters are able to memorize the information stored in DNA and interpret it in a coherent way. Laboratory experiments of virologist and immunologist prof. Luca Montagnier [11], a Nobel Prize winner, so far only indicate how information could be stored in the water's memory, which could then be used to reconstruct the original DNA.

Through light, which is represented at the quantum level by the flux of immaterial photons, the inner mental world and the outer physical world overlap. Different cultures saw the world in different colors, for example in ancient Greece, blue was the quality of darkness, green the quality of something moist, fresh and alive. Lucifer means "Light-bringer - the bringer of light" - a being of radiant beauty who has fallen from the heights because he has sinned with pride. John the Baptist came to bear witness to the light that enlightens every human being. As soon as we ignited Empedocles' fire within us, we created the necessary organs of inner penetration into the essence of things [12]. As we increase our cognitive abilities, we simultaneously improve the world we see until we finally see the archetypal phenomena to which we ascend.

The ability to experience is the most specific property of living entities, much more than metabolism or reproduction. Experiences of consciousness are the most confidential experiences that "living things" can have and know. Experiences are completely private and their quality as redness or pain is indefinable. No science working with phenomena accessible to physics, ie physics in the broadest sense, including biology, is able to predict the existence of consciousness. Consciousness is a place or space in which our own humanity, free decision-making, moral responsibility and other "transanimal" qualities are realized.

At the border of the biosphere, abiosphere and microworld

To approximate the systemic view of life, a Venn diagram for three sets representing three worlds is used (Fig. 1). Two of them form the macroworlds of living (biosphere) and inanimate (abiosphere) nature. The third world is the quantum microworld. The terms microworld and macroworld have been used in the light of the work of Roger Penrose [13], the 2020 Nobel laureate.

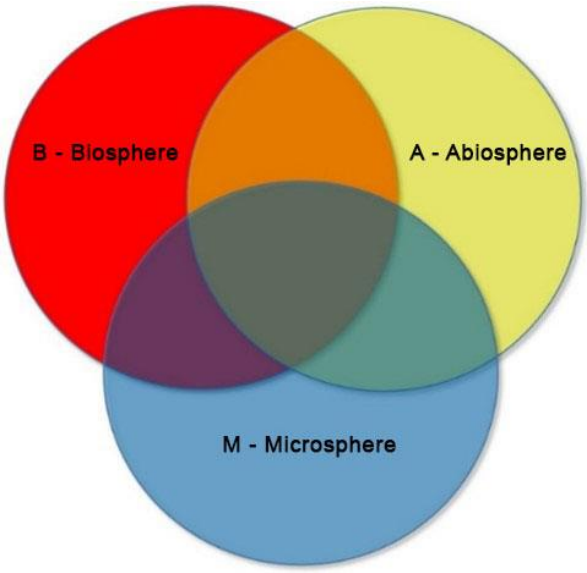

Fig. 1: A systemic view of life

One of the first to use the term "biosphere" was Franz Suess (1831-1914), an Austrian geologist with close ties to Bohemia and Prague. He is, among other things, the author of terms such as Moldadanubicum, Tethys or Gondwana [18]. The second personality, which cannot be ignored in the context of the biosphere, is the Russian and Soviet scientist V. I. Vernadsky (1863-1963). He also stayed in Prague, lectured at Charles University and even learned a little Czech. Today, he is perceived primarily as the creator of the hypothesis that evolution takes place on a trajectory from the geosphere through the biosphere to the noosphere [18]. The term "noosphere" has been constantly evolving in Vernadsky's work right to the idea of a "stream of consciousness" that increasingly affects the geological and biological life of the planet. Perhaps closest to the late Vernadian concept would be "planetary consciousness" [22].

It is worth remembering that the basic components of our world are called spheres. These spheres are interconnected by biogeochemical cycles that emanate from the biosphere. In addition to the biosphere, the lithosphere, hydrosphere

and atmosphere were also included in the macrosphere. The last three under the term "abiosphere", which the authors adopted from the workshop of the Faculty of Science, Charles University in Prague, specifically from the legendary Thursday seminars in Viničná Street, especially lectures and texts by A. Markoš [15, 16].

It is obvious that the Venn diagram (Fig. 1) is not single-layered, but on the contrary multilayered. It consists of individual fields and interactions of individual parts of the diagram, which take place at the level of these fields. One of the basic fields of the macroworld is the electromagnetic field. In the microworld, it is a quantum field. There are other fields such as the metric, the field of condensates and dark matter, which together with the quantum field form a three-dimensional "fabric", described by Frank Wilczek [17].

Processes in the abiosphere can be described in the classical concept using models of physics and chemistry. Today, quantum phenomena are being pushed into their description more and more often. The biosphere has brought measurable flows of biochemical influences into the abiosphere, and with its evolution, these flows change. The Carboniferous forest bound huge amounts of carbon, sulfur, cadmium and other elements into the coal. Coral reefs form carbonate bodies, whereby the biosphere contributes to the formation of the abiosphere, in this particular case the lithosphere. On the other hand, depending on the situation, the abiosphere provides, in whole or in part, sources of energy and building materials not only for the origin of life, but also for its further functioning and the evolution of the biosphere.

With life, a cloister appears separating the inner being from the environment. This heart has a composition, dynamics and rules of "operation" significantly different from the environment. Apart from simple composition, examples are "contracted" codes, heuristics or mechanization, and the mechanicality of some processes. These are symbolic abilities involved in the representation of the outside world, such as memory, experience, character recognition, and interpretation of meanings.

In the abiosphere, we can formulate "laws" based on observed facts. In the evolution of the biosphere, only short-term "trends" such as Haeckel's "basic biogenetic law" [4], herd behaviour and parallelism, or horizontal transmission of various types of information and codes can be recognized. This is an example of Zadeh's principle of fuzzy records, according to which as the complexity of the system increases, the number of unambiguous statements that apply to it decreases relatively.

The relationships between the microsphere and the biosphere are probably the least explored areas of our Venn diagram. It is proven that relationships exist here, but their description is missing. It can be hypothesized that the brain is organized in such a way that transformations at the quantum level are important for its activity and that brain functions taking place at the macrophysical level emerge from the quantum level through the already mentioned "decoherence".

Thus, the microsphere could bring something like subjectivity to experience into the biosphere, that is, what prevents us from looking at "living beings", including ourselves, as "this" or "it". On the contrary, the biosphere could introduce flows of orderliness into the microsphere, just as it introduces flows of biochemical components into the abiosphere. It is the essence of the biosphere that it organizes its environment in order to benefit from it, and there is no reason to believe that it would proceed differently in relation to the microsphere. Terms such as "quantum biology" or "quantum life" are becoming more frequent in scientific literature, suggesting that the relationship between the biosphere and the microsphere is of serious scientific interest.

The relations between the abiosphere and the microworld are described by contemporary physics, perhaps rather by physical chemistry, whether at the local, planetary or cosmic level. There is no doubt that both worlds are composed of the same elementary particles, and we know that they can be described by different mathematical models that have not yet been unified. Given what we have understood about the microworld in a century, we could hypothesize that the microworld submits its possible forms to the macroworld. In the interaction with the abiosphere, the form emerges in a more deterministic way in the macro world than in the case of the interaction with the biosphere. The macroworld, on the other hand, is a source of sufficient variability in the forms of the microworld. Among other things, the phenomenon of new quantum computers lies in the area of the intersection of the microsphere and the abiosphere.

Now let's think about the central field - the "bull's eye", which is the intersection of all three components of the Venn diagram (Fig. 1). By the way, in its classical form of three interconnected circles, its shape is a popular element of Santini's construcions. The answer to the question of what the abiosphere, biosphere and microworld have in common is clear. It is information ("Its from bits" [17]). But what should one call an information field that is affected from three different sides and several levels…?!? Is it that noosphere or perhaps a noetic or mental field!?!? What is certain is that the whole diagram comes out of this field and, after all, the individual components and their combinations also return to it. They are present in it and also intertwine and renew each other in it. It is not only the source of life, it is also the source of being.

The hypothesis that the power of consciousness exploits quantum mechanical indeterminism follows on from the increasingly probable invalidity of the hypothesis of the powerlessness of consciousness (epifenomenalism). If consciousness can interfere with the physical world and these considerations are already known from the texts of Erwin Schrödinger [20], then it must do so where the physical process has not yet been determined, ie at the level of the transition from the microworld to the macroworld. The idea of an effect at the microphysical level that does not disturb causal confinement at the macrophysical level is known, in the form of a metaphor of a cone standing at its own tip in unstable equilibrium. An infinitesimal small impulse causes the cone to fall, the fall then advances according to the laws of "macrophysics". This idea can be completed even by the possibility of the effect of a "zero" impulse, namely one that is able to determine the direction of the transition of the quantum region to the macrophysical. In quantum physics, it is the principle of the already mentioned "quantum decoherence" explaining the collapse of a quantum wave function into a measurable macroscopically observable state.

As experiencing beings, we know for sure that our "I" has, within certain limits, the free ability to control the course of

our mental processes and also to interfere with the outside world. Quantum mechanics offers a starting point in the experimentally proven principle of "quantum uncertainty". The uncertainty principle states that the exact position and momentum of a subatomic particle can only be known within certain limits. It turns out that the uncertainty of the quantum system has an objective character, whose behavior is measurable. An illustrative example of quantum uncertainty is the spontaneous fission, the decay of radioactive elements: while the half-life of a radioactive element has a constant "regular" value, there seems to be no real, objective cause of the actual decay of a particular atom.

Roger Penrose [13] hypothesizes that quantum transitions at the microtubules level of brain cells could represent events of consciousness. According to his hypothesis, there could be a state of so-called "quantum coherence" within these tubules, to which there is no analogy in classical physics. Interestingly, we can recall that microtubules are a typical example of self-organizing processes. Abner Shimony [30] states that psychological phenomena have a "quantum" flavor, such as the transition from peripheral to focal vision, from consciousness to unconsciousness, intentionality, anomalies in the timing of events or unification and ambiguity in Freudian symbolism. In the brain, there could then be an avalanche-like amplification of the original quantum mechanical event at the macrophysical level. Hans Jonas [4], as a proponent of interactive dualism, hypothetically thought about how the acting will could trigger brain processes at the quantum physical level and how the brain as an "amplifier" could transform this physically inaccessible terminal impulse into determined events at the macrophysical level. Amplification effects are known, for example, in some types of gene mutations, where a single quantum mechanical event could in its consequences cause disease of the whole organism, such as sickle cell anemia.

The description remains what is in the area between the universe, from which we subtract the union of the biosphere (B), abiosphere (A) and microsphere (M). Only few people rarely ask about the meaning of this "no man's land". The model described by the diagram represents a multilayer membrane composed of different fields. Naturally, this offers the possibility to close this membrane and create a kind of cell. The compartmentalization of the environment, or the creation of closed units with a different inner world of its own, is a common key component of the origin and functioning of the biosphere, abiosphere and microsphere.

Thus, the elementary diagram becomes the basis of a somewhat more sophisticated model of our environment, which leads to the non-trivial hypothesis that life is one of the essences of our universe. Not only because we humans are alive, but above all because such a universe could not exist without life, even if it were part of only a negligible dot somewhere in one of the many superclusters of galaxies. The information that life produces affects our world to a much greater extent than we still want, and so far we can admit.

The complexity of life

We all have within us the ability to distinguish the living from the inanimate and to distinguish the living according to the degree of authenticity and autonomy of action, that is, according to how it affects us. It is a fact that in many human beings this instinct has been largely suppressed by cultural impacts. In Latin, it is the term "agent", which means that the manifestations of behavior and possible actions of the object we observe are conditioned by some internal intentions, beliefs, decisions, something that is hidden and not accessible from external observation.

S. Kaufmann [3] defined life as an autonomous agent, which must be able to act in its own interest and must be a self-reproducing system capable of at least a single thermodynamic work cycle. Autonomous agents must be able to identify (measure) the source of the imbalance and turn this information into work (conducted action). Autonomous agents interact and re-evaluate their behavioral patterns, leading to non-stationary processes of their evolution. All this is done through mutual communication between agents and their environment.

The community of agents develops on the brink of chaos, ie between too austere / ordered and too loose / chaotic behavior. Emergence in a multiagent environment gives rise to a new quality at the macro level, which is not evident when observing the system at the micro level. Second-order cybernetics has introduced a "law of necessary knowledge" for these systems, where increasing the diversity of actions must be accompanied by increasing the ability to choose the appropriate action, ie the growth of knowledge. Life is therefore associated with an increase in complexity, with complex sub-agent structures producing imbalances with high complexity and increasingly sophisticated energy sources. These refined energy sources lead to the emergence of even more complex structures and so on.

Living entities have an individual memory, but they do not have a social memory. The social aspect of man is culture or the sum of non-biological human activities and creations. For the last few millennia, humans have adapted the environment to their genes more often than their genes have adapted to the environment, and therefore cultural adaptations have dominated biological adaptations because they are faster and more controllable. Group selection selects between communities, not between specific individuals. The higher the moral standards of the group, the more successful the selection will probably be (moral optimism).

Order means cutting off all possibilities so that in the end it remains the only one. Coemergence, or the formation of a part of the environment by means of co-emerging, rising and evolving events, is a spontaneous process which does not necessarily need us and which is the opposite of order. Complexity theory [23] states that order, randomness, and chaos are mysteriously intertwined. When looking at life from a social point of view, it is therefore necessary to take into account spontaneity, which can stimulate social changes that have a retroactive effect on the individuals themselves.

A. Einstein stated that the field is the only agent that controls particles. In social systems, this field consists of invisible estimations. The analogy of particles can be seen in institutionalized social structures that embody truths and transform thoughts and estimations in to matter. Leaders influence the group's actions because they are better attuned to the field of estimations. Priests, shamans, visionaries, on the other hand, try to act in the interests of the needs of the social whole.

Another characteristic of life is a stable replicating system, where the rate of emergence is in balance with the rate of decay. Our world tends to move towards stability, which in the chemical sense means that the system does not react. However, stability can also be physical, thermodynamic, mechanical or dynamic. As stated in Newton's law - the body is either at rest or in uniform rectilinear motion. Dynamic-kinetic stability (DKS) is related to biology and speaks of the rate of replication and degradation [24]. Or else, the more efficient the system in producing itself, the more stable it can be in terms of endurance, that is, persistence.

In an autocatalytic reaction, where the catalyst catalyzes its own formation, the rate of product formation is exponential, whereas in a conventional catalytic reaction, the product is formed linearly. Darwinian choice constist in that faster replicating replicators will beat the slower ones that will disappear over time. As part of evolution, therefore, mutual catalysis arose, where one group stimulated the formation of the other, the other dynamized the former, and the system was therefore more successful, but more compicated and complex. Assuming that the replicating molecule is metabolic, that is, it accumulates energy, it counteracts the tendencies described by the second law of thermodynamics. According to the biological approach, life began with the simultaneous emergence of replication and metabolism.

Replication is one side of the coin, which must be complemented by the decomposition, extinction and death of partial elements, as well as whole organisms. Apoptosis is one of the main types of programmed cell death occurring mainly in animals, but in a sense also in plants. This includes a sequence of biochemical processes leading to typical changes in cell appearance. Various damaged cells also die apoptotically, either on the basis of the "self-determination" of the cell itself (internal pathway) or by cause of the cells of the immune system. For example, bacteria under pressure produce large numbers of duplicate genes with different variants of the genetic code. Once one proves successful, the original inefficient gene is replaced. Evolution is a random process, but this randomness may have a predetermined goal.

Old and new specters

Heraclitus of Ephesus, who, in addition to the legendary statement that it is impossible to enter the same river twice, is also famous for a number of others, among which "physis kryptesthai philei " occupies a special position. These are only three words, but how many different translations and interpretations have they brought in the next twenty-five centuries. The message of this fraction says that "the living comes out furtively."

Living organisms, not only as individuals but also as groups, have one very important feature over inanimate mechanisms or machines and their sets. They do not have a creator but they have their secrets. The machines have their schemes, technological and assembly procedures, and at the end of them they shine in all their beauty. They have their designers, technologists, fitters. The machines were designed by their creators to work cyclically in a suitable energy gradient and to streamline the passing energy and useful work. This also applies to code-controlled machines and, finally, to the codes itselves. Codes do not arise spontaneously in an evolutionary way. Living organisms and their communities have nothing of the kind and no

Nevertheless, allegories of the machine or mechanism as metaphors of life remain one of the fundamental errors of our time. It's not just laymen who like such a metaphor. It is attractive to many scientists, and biologists themselves say that they are not completely immune to the idea either. The idea of a living organism as a machine is one of the basic barriers to understanding what is the essence of the living, what is life. [15].

The process of "mentalization" is the ability to empathize with the "state of the soul" of the other. Another important concept that belongs to mentalization is the "intentionality" of various levels. First level intentionality is expressed by the state of "I know that I know" and is demonstrated in most vertebrates. Second level intentionality is expressed by the state " I know that you know" - in general, I know that someone else knows. The Higher girls' school is, of course, expressed as "I know that you know that I know." The ordinary world of adults takes place in fourth level intentionality, and human possibilities are generally limited to somewhere around the sixth or seventh level, which reads something like this: “I know that John knows that his sister thinks that George wants his mother to assume that his father does not think that his brother wanted to do so” [29].

Machines, including program-controlled computers, do not seem to be aware of the fact that they know anything, so we are talking about zero level intentionality. If we can distinguish a machine from a living being and it somehow fools us, we are far more tolerant of it than of man.

Mentalization and intentionality help us not only to empathize with the other, to estimate his behavior, but also to learn from the other and, of course, to control and command him. When you look at another in such a way that you see him coming a mile off, he easily becomes your instrument and with a little cynicism he loses your respect, recognition and is of no value to you. Such human beings easily become useless and unnecessary and are replaced by machines. It is an old idea when Aristotle already wrote about mechanical slaves.

The important thing is that what is clear and transparent is neither authentic nor autonomous, but most likely neither alive nor viable. Let's call this problem the mechanical specter that is closely related to the above-mentioned, too simplistic, and thus also tempting idea that man and the community he forms are actually some form of machine or mechanism.

The mechanical specter hidden in our minds leads us to be struck by pride, which leads us to believe that we do not have to deal with forming the widest possible range of possibilities for future states of society and the environment in general. It leads us to the conviction that we are able to find the only right variant with the help of various optimizations and efficiencies and thus spare ourselves further effort.

Not only are we regularly wrong, but above all we reduce the variability of the environment, which as a result gradually begins to solidify, freeze, cease to be able to develop and gradually it commences to chain us as well. It is the diversity of the environment that is life-giving, as taught, among other things, by the "law of requisite variety" by W. R. Ashby [31].

We are willing to believe that what we have created mechanically and what we subsequently experience is the

only possible thing. We are inclined to defend a system that has made us slaves, even mechanical slaves, just because it is wonderfully transparent, functional, and unchangeable. We thus become parodies of machines and even do so with enthusiasm.

However, there are also new and far from hitherto unsurpassed specters, just like the mechanical one. One of them is "dataism", which was born on the boundary of two scientific directions. In the 150 years since the publication of Darwin's book "On the Origin of Species by Means of Natural Selection" [32], life sciences have begun to view organisms as biochemical algorithms. On the other hand, computer scientists began to create increasingly advanced computer algorithms. "Dataism" combined these two streams of thought and proved that biochemical and electronic algorithms can be described by the same mathematical laws.

"Dataists" believe that our environment, universe, or world consists only of data flows, and the value of each part, phenomenon, or entity is determined by its contribution to the overall information model [30]. Not only individual organisms, but also entire communities, such as beehives, bacterial colonies, forests and cities, are thus considered to be mere sources of data. Even economists are increasingly approaching the economy as a data model. Although it may seem like an eccentric fabrication, this principle is accepted or at least not rejected by quite a lot of people.

In real world, however, the economy is made up of a chain of human beings, from a farmer growing grain, workers in a clothing factory, to customers who buy bread in a store. The information system can never describe the complex human behavior on the basis of which their decisions are made.

"Dataism" seems to believe that it has bridged the gap between living organisms and machines. It believes and expects that computers will eventually be able to decipher biochemical algorithms and design its better versions. Revolutionary algorithms are offered to politicians, traders and ordinary customers to achieve their goals. Scientists and intellectuals are promised a scientific holy grail in the form of a unified theory from musicology, economics to biology, claiming that Beethoven's Fifth Symphony, stock market reports or the influenza virus can be analyzed using similar algorithms. After all, these are only three different data processing algorithms [30]. Musicologists, economists and biologists studying cell structures could finally understand each other.

Conclusion

Life has been presented to us for many years as something unique, something that is probably a product of randomness. As our knowledge of the vastness of our environment expands, so does the feeling of losing life somewhere in a remote part of the universe and the feeling that our world doesn't really care much about life. The authors tried to twist this view of life a little. To make life at least a co-creator of our environment instead of just a random by-product.

Life and its practice are the only real measure of the functionality of our theoretical models. Today, we often try to replace life experience with a mathematical-logical apparatus connected with simulation algorithms and pretend that we understand the world and can spare money as a result. In fact, we run the risk that the weaknesses of our models will meet the weakness of the mathematical apparatus used to approve them, and a completely misleading result will arise. Only gray is the theory, as the evergreen green of life is the tree…

Life is firmly anchored in the material world, and the changes in it are governed by the common universal law that nature searches for stable and more permanent forms. From this regularity, evolutionary tendencies to increase persistence, ie stability over time, are naturally derived. One of the evolutionary tendencies is the path to efficiency and the other the path to certainty. It is a principled, fundamental unity, which sooner or later finds its reflection in the interconnectedness of not only the natural sciences. Life is change and change is life. The paradox is that changing things change until they change into things that don't change.

Where the macroworld and microworld meet, where Uroboros eats its tail, we find life. From a philosophical point of view, perhaps the key role of the "special" one, which mediates the two-way relations between the "general" and the "unique" belongs to life. On the other hand, there is the view of "dataism", which leads to a somewhat extreme possibility of calling life a mere emotional wavelet in the ocean of data. However, a natural objection will appear immediately, to what this ocean of data would look like without the contribution of life….!?!?

If we accept that subjectivity, thinking and experiencing events are a property of life, then apparently life and the biosphere, as important creators of information, play an even more important role in shaping our world, even within the "dataistic" paradigm.

We have not yet been able to construct and produce life, and therefore we cannot even fully understand it [1]. However, we may be able to awaken in our environment the effects of such laws, which will tend to be more effective and definite than anything we know so far. Life will probably handle it, but we humans could definitely lose our sense of uniqueness, and the period we called the "anthropocene" could end before we could agree on when it actually began.

Living in its complexity has allowed, among other things, this article to be written. Maybe it won't be blamed for this. After all, whenever it is possible to escape to the popular saying that everything is otherwise.

Such is life….

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