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ONTOLOGY, DIALECTICS AND 3D PHILOSOPHY

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ABSTRACT

Three space experiments carried out in 2004-2018 placed all points on "i" in the discussion about the nature of space-time, which began with the apories of Zeno of Eleia. Experiments have proved that space-time does not exist physically. They are what Democritus called "nothing," unlike "what," which is associated with everything material and virtual that exists in Nature. This discovery requires radical changes in some fundamental paradigms of traditional ontology, which was formed largely under the influence of classical physics of the twentieth century. In addition, it makes it possible to make significant adjustments to gnoseology, in particular, to the question of the meaning of cognition as such. Its decision brings us to a new understanding of the place and role of man in the universe: the former perception of him as a passive observer of phenomena occurring in the world changes to the status of one of the potential demiurges of space.

Keywords: Nature, space, time, ontology, gnoseology, cognition, man, Big and Minor Universes

Part 1. Ontology of being and the principle of complementarity

No idea can be understood without

knowledge of its history

O. Comte

1.1. Prolegomena

According to the philosopher-mathematician A.N. Whitehead, "The most plausible general characteristic of the European philosophical tradition is that it is a series of notes to Plato" [1]. As a philosopher, Whitehead is partly right, since European philosophy followed the line laid by Plato with the further full approval of the Christian church. But as a mathematician Whitehead did not note the fact that medieval European natural science, born contrary to the resistance of the church, fed on the ideas of, first of all, Aristotle, either in the context of their recognition and adaptation, or in the aspect of their criticism and refutation. And that, thus, the paths of natural science and philosophy diverged already from the time of Plato and Aristotle, despite the fact that they both drew their ideas from a common richest source - natural philosophy from Heraclitus and Parmenides, to Anaxagoras and Empedocles, as well as commenting on Democritus and condemning Protagoras.

However, multi-vector was laid down in natural philosophy initially, due to the tradition inherent in antiquity, to rely only on the power of reason and evidence of passive observations. There were two objective reasons for this: a) immaturity and chaotic thinking, characteristic of all humanity of that era; b) misunderstanding that the observed phenomena are the essence of the are the essence of the consequence of a great many factors, which can be learned only with the help of an active and targeted experiment. By creating the science of logic, Aristotle laid the foundation for rationalizing thought and, thereby, taught his and the future times the basics of strictly consistent and critical thinking. In fact, he set a precedent - the first step in the way of growing up the mind, accustoming it to discipline and orderliness.

However, history has shown that one formal logic is completely insufficient for a deep knowledge of the truth of things: visible facts are not only extremely scarce, but often so contradictory that they can be interpreted both in one and in another way. Therefore, logic is often unable to cope with the analysis of generally accepted (superficial and most often false)

misconceptions with its own efforts and without the support of the "outside," generating intractable paradoxes like the apories of Zeno of Eleia.

It is not surprising that confidence in concepts developed by natural philosophers emanating from various, sometimes polar, initial considerations was inevitably lost. As a result, Socrates's efforts to note philosophy from "heaven to earth" were ultimately crowned with success. Many of his followers prove that ancient society accepted his demarche with relief. And only Aristotle, realizing the great and enduring value of the achievements of natural philosophy, created a requiem in its honor - the monumental [2, 3].

The Christian church adopted this "truncated" philosophy with open arms. She was close to the concept of God as the organizer of the Universe, about the dualism of imperishable ideas and brainy matter, about the primacy and immortality of the soul, about the secondary and insignificance of the body, about the good and hierarchical structure of the state developed by Plato. For they did not need empirical and undisputed evidence, it was enough to believe in them.

One of the authoritative fathers of the Tertullian church tried to complete this counter-revolution of consciousness. Famous maxim: Credo quia absurdum est ("I believe, for absurd") there is a paraphrase of a fragment of his work "On the flesh of Christ": Et mortuus est Dei Filius: prorsus credibile est, quia ineptum est. Et sepultus resurexit: certum est, quia impossibile ("And the Son of God died - this is completely reliable, for ridiculous; and, buried, resurrected - this is undoubtedly, for impossible ") [4]. Therefore, his credo is not surprising: "After Christ we do not need any curiosity; after the gospel, no study is needed. "

In other words, but the same idea was supported by another generally recognized ideologist of the church Augustine: "Did I benefit from studying all the Aristotle categories? No, it was even harmful. "[5] And the logic of the struggle of his rational consciousness, devoid of solid ground of empirical knowledge with an irrational imagination, led him to the conclusion that "God knows best through ignorance." So blessing the masses with a cross in one hand, with the other hand the church suppressed them with ignorance. Nevertheless, objectivity requires recognition that not only due to its cowardly self-interest, but also due to the natural course of the evolution of thought, European philosophy, revived after the dark centuries of the Middle Ages, was doomed to the monopoly position of idealism in its ranks.

In turn, natural science, which was born under the influence of the Renaissance, was forced to agree with the principle of the duality of truth as imperative. Since, on the one hand, the

tyranny of church dogmas and the frightening practice of the Inquisition inspired free-thinking individuals with paralyzing horror from the risk of being accused of heresy. On the other hand, the technologies of active experimentation were still too undeveloped so that those seeking the truth could put experiments that allowed them to penetrate certain secrets of the universe that were inaccessible to purely theoretical consideration.

Nevertheless, the movement for the liberation of the mind from the tyranny of religion, initiated by the age of Enlightenment, could no longer be stopped. Nor could it be expected that the church would surrender without desperate resistance. Over the past two centuries, she has had to swallow the bitter pill of the heritage of Voltaire, Diderot, Montesquieu more than once and noticeably moderate her mentoring zeal. Nevertheless, its influence on the collective consciousness of even Western society is largely preserved, manifesting itself both in philosophy and in natural science of the XX-XXI centuries.

Today, the state of affairs in them is such that after the catastrophic fiasco of theoretical Marxism with its materialistic dialectics, historicism and "economism," idealism in philosophy gained a second breath. Moreover, even before K. Marx, phylogenesis of purely speculative concepts of their creators gave rise to a great many "isms." Most of them see a solution to the problems of philosophy in search of the peculiarities of individual human being (existentialism, Freudianism, irrationalism, structuralism, phenomenology, hermeneutics, etc.). Closing on the specifics of this problem, absolutizing and isolating the individual from the surrounding background, they, alas, have never had and still do not have any tangible practical influence on him.

On the other hand, neopositivists are looking for a solution to the problems of philosophy in analyzing the fundamental foundations of science, developing its methodology and universal language, as well as determining the truth of a particular scientific concept..., the results of which remain little known to the vast majority of scientists themselves. Analytical philosophy occupies similar positions, which sees philosophy not as a theory, but as a method of "philosophical analysis," and tries to reorient philosophy to the study of the language of science.

The pragmatism of W. James insists that only those provisions of philosophy that are most adapted to the practical (final) activities of man and humanity are true. However, it remains unclear how this approach affects the understanding of the baselines of their activities, which would contribute to predicting the most painless and short ways to achieve the common good.

Thus, modern philosophy as a whole remotely resembles medieval scholasticism in that its private knowledge and discoveries remain "a thing in itself and for itself."

In natural science, the situation was the opposite: here, since the time of C. Darwin, it was materialism that took the form of a worldview dictatorship. This was natural, understandable and timely: intending to distance himself as far as possible from the religious falsifications of the evolution of nature, Darwin resolutely defended a purely mechanistic idea of the processes that initiate evolution. Time showed that, having a very vague idea of the genetics science that was still missing, he correctly identified the main functions and methods of implementing the universal reproduction mechanism. Moreover, he was the first in natural science to introduce the concept of randomness as a necessity... to create a species diversity of organisms. But in ideas about natural selection as an absolutely blind and random process that contributes to progressive evolution, he made incorrectly.

Today, the opinion that Darwin revealed the driving factor and the reasons for evolution became almost religiously faith. Alas, this belief is erroneous: Darwin did not take into account the fact that in addition to the fundamental triad of evolution he identified, there is also a fourth, key factor, without which not only evolution, but life itself, any of its forms and manifestations, is impossible. Aristotle called this factor entelechy (from Greek: ἐντελέχια - implementation) - an internal force that forces organisms to exist, avoiding death and leaving behind offspring. His later European vitalist followers even claimed that matter exists in two completely different forms: "organic" and "inorganic." Moreover, K. Reichenbach developed the theory, which endowed organic matter with various forms of life energy [6].

Nowadays, vitalism is rejected under the pretext of the mysticism of its ideas. However, E. Mayr, co-founder of the synthetic theory of evolution (STE) and a critic of vitalism, commenting on the position of his opponents, found the courage to confess in 2002: "*When reading the works of leading vitalists such as Drisch, you have to agree that many basic problems of biology cannot be solved using the philosophy of a Cartesian type, in which the body is considered just a machine... The logic of critics of vitalism was impeccable.* ***But all their attempts to find a scientific answer to all the so-called vitalistic phenomena ended in failure****...* "[7].

Even more controversial is the situation in cosmology, trying to explain the subtleties of the existence and evolution of the Universe. The cosmological theory of the Big Bang (BBT), based on Einstein's theory of relativity, has also turned into a kind of icon. Today it is called

the standard cosmological model (ΛCDM), in which the main components of the Universe are dark energy (from it in the name of the model lambda-member Λ) and cold dark matter (Cold Dark Matter, CDM). Her supporters learned to tightly close one eye, clearly seeing her vices, and keep the other eye wide open, noticing her virtues. Meanwhile, not one, but hundreds of professional specialists dealing with cosmology problems point to intractable contradictions and paradoxes, which are teeming with TBV. In 2004, 218 famous astronomers and physicists from around the world signed an open letter [8], which spoke about the TBV crisis (ACDM), which has dominated modern cosmology since the end of the 20th century. But their voice is drowned out by opponents' copper pipes.

These are the facts, but the situation requires to be determined: is there a way out of this maze of contradictions in which the modern worldview appeared, or does it not exist for certain objective reasons? I dare say that the way out exists, and it is indicated by the 3D philosophy we are developing, based on the achievements of quantum mechanics, genetics and cosmology. The principle of complementarity, discovered by N. Bohr - one of the "founding fathers" of quantum mechanics, allows us to form a single worldview for philosophy, natural science and the humanities, removing many of their private, internal contradictions that entail each of them.

In the context of the above, ontology is interpreted as a concept, or system of ideas about the most fundamental principles of structuring and the laws of the functioning of Nature, based on the analysis of empirical data.

1.2. Revolutions in Natural Science

So, we stated the facts, but the situation obliges them to give an explanation. And it, in turn, requires to deal with the reasons that led to the current state of affairs. Their peculiarity was that the situation in the philosophy of the twentieth century resembled the era of Socrates-Plato, but with the opposite sign. Ancient natural philosophy has exhausted itself as a concept that can provide a consistent explanation to the visible world, as well as offer each individual a universal life credo that facilitates its existence. Modern philosophy has exhausted itself even as a mentor, not to mention the study of Nature and the place of man in it.

And this happened for two reasons. Firstly, only humanitarian philosophers "exploded" its soil (Descartes is almost the only exception), far from the problems of natural science. The most illustrative example is K. Jaspers, filled with Christian arrogance, but extremely ignorant

in matters of the methodology of empirical natural science. He allowed himself to speak dismissively about Greek natural philosophy, not suspecting that he was an amateur who had poorly learned even the formal logic deduced by Aristotle on the basis of an analysis of the concepts of natural philosophy [9].

Secondly, philosophy itself was under the oppression of ideologies. A small retreat is needed here. The problem is that for insurmountable technical reasons, the circulation of my book "The Philosophy of Humanism" from 2009, in which the issue of the relationship between philosophy and ideologies was considered in the most detailed way, did not reach readers. Therefore, I have a moral justification for reproducing the following quote from it, which completes the analysis of the consequences of intellectual slavery of reason among ideologies: "For centuries of being underground, the" second "(European) philosophy had to defend ideas alien to its progenitor - the" first "(nature) philosophy, to explain the language of metaphors and myths that is not characteristic of it.

But the longer the intellectual violence against her lasted, the more obvious it became that it was not her job to look for traces of truth in evangelical tales, and thereby play up the tyranny of the church. It is not her job to turn a blind eye to the blatant incompetence of Marxist dogma, justifying her desire to arrange the Bartholomew (or Cristal) night for all non-proletarians of the world. It is not her business to raise xenophobia to the rank of virtue, and thereby to spot herself with connections with distraught racism and Nazism.

Philosophy did not have to deal with any of the ideologies: all of them are temporary workers, califers for an hour, the "acceleration stages" of a rocket that ascends humanity to the universal brotherhood of people. And if we do not free ourselves from their burden in time, as from the now useless junk, we will not be able to "enter the orbit" of Homo's global cultural unity. Today, humanity is united in a biological sense, but divided - in a worldview. And in order to survive, it must find a common language and priorities, common ideals and values. "

Does this mean, however, that philosophy should neglect all the intellectual wealth that it itself produced as a prisoner? Of course not! Then in whom can she see a natural ally? Obviously, in natural science and the humanities. However, we will consider the question of how to find understanding of philosophy with them after we study the reasons that led to insurmountable internal contradictions in two key sections of natural science for philosophy - in biology and cosmology: in the theory of the evolution of organics (STE) and the star world (ΛCDM).

In his Autobiography [10] Darwin admits that he came to atheism thanks to reflections on the compliance of Christian doctrines with the striking variety of Earth's organics that opened up to him during a trip on the Beagle. The radical coup in views, which took place, however, gradually, step by step, led to his complete disappointment in the fundamental foundations of Christianity. He expressed his opinion of the Bible in the following words:... "the Old Testament with its obviously false history of the world, with its Babylonian tower, rainbow as a sign of the covenant, etc.,... ***is trustworthy no more than the sacred books of Hindus or the beliefs of some savage*** (our italics are G.G.). " No less categorically, he spoke to the Gospels:... "[their] simple text shows, apparently, that unbelievers - and among them it would be necessary to include my father, my brother and almost all my best friends - will suffer eternal punishment. ***Disgusting teaching***! (our italics are G.G.). "

It is therefore not surprising that the publication "Origin of Species..." (1859) caused shock in conservative English society. No longer shock, but massive indignation caused the publication of "The Origin of Man..." (1871), giving way to the author's angry comments and accusations of recognizing him as a close relationship between a person and a monkey. The resonance caused by such an unconventional view of the past of mankind turned out to be so great and did not subside for so long that it initiated the "monkey process" in America in 1925.

Moreover, among critics of Darwinism, the most energetic was the famous physicist - Lord Kelvin. He and his colleagues claimed that the age of the Earth is 20-40 million years, while Darwin estimates that at least 200 million years were needed for the evolution of all living things on Earth. In other words, in the opinion of physicists, the Earth is not old enough to allow natural selection to prove itself. This opinion remained a sentence to Darwinism until the discovery of V. Rontgen X-rays (1895), as well as A. Becquerel and M. Curie-Sklodov radioactivity (1896-1898). They "aged" the age of the Earth to 1.7 billion years (1911), and even to 4.5 billion years (our time) and, thus, rehabilitated Darwinism. Therefore, today only religious fanatics can challenge the fundamental paradigms of the theory.

Darwin was extremely consistent, limiting the key mechanisms of evolution to his "own" triad of heredity, variability and natural selection, missing its fourth most important factor - entelechy. He set the goal of freeing the worldview from the slightest hints of everything that at least remotely hinted at the mystical, outside or near natural, and that would allow God to somehow catch on with the role of the creator of nature. It was on the solution of this most important problem at that time - not to give theology the slightest chance to distort and interpret the facts in his favor, that his attention was completely directed. The Christian in

Darwin transformed into an atheist thanks to observations and reflections, but the animist Darwin remained faithful to R. Descartes: in order to abandon mechanism, he, firstly, lacked facts, and secondly, for his era, this refusal has not yet acquired the necessary relevance.

Thus, Darwin made the ***first*** great revolution of the collective consciousness of the New Age: a) deprived God of the functions of an omniscient, all controlling and all controlling creator of the universe; b) endowed randomness with creative properties. At the same time, the second thesis of the Darwin triad challenged classical physics, which dealt with phenomena that were described by compact mathematical symbols and concise formulas that fixed strict causal, i.e. predictable connections.

In turn, very dramatic events also took place in the physics of the late XIX - early XX centuries: the electromagnetic theory of J. K. Maxwell was born, radioactivity was discovered (V. Roentgen, A. Becquerel, P. and M. Curie, E. Rutherford), the constancy of the speed of light was proved (A. Michaelson). They also challenged classical physics, whose god, in the words of A. Einstein, "does not play bone"

This challenge culminated in the ***second*** great revolution in the worldview: the discovery of the previously unknown world of elementary particles. N. Bohr and V. Heisenberg, L. de Broil and E. Schrodinger, M. Plank and V. Pauli, as well as many other physicists, created a new, not classical, but quantum mechanics, in which randomness and statistical patterns received complete "legitimacy" [11]. This new physics insisted that *God was obliged to play in the bone*, confirming the key role of Darwinian variability in the development of organic life on Earth. Only, in fact, Einstein strongly disagreed with the new understanding of the principles and mechanisms of the existence of Nature.

At the same time, synchronously with the discovery of a striking world of microscopic objects, at the other end of the scale of Nature - the **third**, no less epoch-making event took place in the world of stars. E. Hubble discovered the existence of the Great Universe, in which our galaxy - the Milky Way was only one of countless other galaxies like it. The boundaries of the World moved so far that they questioned the applicability of classical ideas describing events and processes characteristic of local space-time objects to an object whose existence of borders was not empirically proved.

However, in addition to these exciting bright events, another strange process took place in physics. His extraordinary nature consisted in an attempt to create a mathematical model of a closed universe, refuting the ideas about space-time (r-t) developed by I. Newton. They have

been disputed almost since the publication of his "Beginnings," but they were most persistently criticized by the outstanding physicist, but mediocre positivist philosopher E. Mach. He, followed by Einstein, considered unsatisfactory: a) the division of r-t into absolute and relative "parts," b) the explanation of the cause of inertia, c) the recognition of Euclid's "flat" geometry as suitable for describing the structure of the space of the Universe.

Their first disagreement with the Newtonian interpretation of r-t was expressed in the idea that "space" is an environment that *itself is devoid of* ***a l l*** *mechanical and kinematic properties, but at the same time determining mechanical (and electromagnetic) processes*.... " [12]. Thus, Einstein, in fact, materialized space and time, postulating the existence of something material, however, devoid of all the attributes of the material.

As for the second disagreement - an explanation of the empirically proven principle of equivalence of inertia and gravity, Mach and Einstein interpreted as his need to understand inertia in the form of "*resistance of bodies to acceleration in relation to each other, and not in relation to space*." In other words, in their opinion, the stars "there" determine inertia "here." A similar idea of long-range action was not born from a good life: no more reasoned alternative to it was known at that time. Einstein worked on the creation of the General Theory of Relativity (GTR) from 1906 to 1915, while the existence of such a fundamental characteristic of elementary particles as spin was discovered only in 1927.

Meanwhile, it is the spin, and not the mystical long-acting force, that determines the inertial properties of each elementary particle, and with it the entire massive body, consisting of trillions of particles. The author of the GTR, ahead of time, could not know this, so he made a forgiving but fatal mistake, attributing the inherent property of material bodies to the influence of external influence. Nevertheless, this fact makes the Mach-Einstein hypothesis not so much unnecessary as erroneous, according to the Occam principle: "*Entia non sunt multiplicanda praeter necessitatem*."

Einstein saw a third disagreement with Newton's mechanics in her support for Euclid geometry, which came from the axiom of infinite extent (not closure) and 3 dimensions of space. This feature of it did not allow to represent the Universe in the form of a local object with certain boundaries, and the internal structure of which would be amenable to mathematical description. As a classical school physicist, Einstein considered such a restriction unacceptable, and in order to circumvent Euclid's ban, he relied on Riemann's "curvilinear" geometry. It made it possible to display the universe in the form of a certain closed object, subject to a mathematical description and, thus, to judge its specific features.

However, while working on GTR, Einstein did not realize that "his" universe - the Milky Way galaxy - is only one of countless other galaxies, each of which lives its own life. The discovery of the Big Universe by Hubble occurred in 1922-25. It was supposed to prompt Einstein to wonder: is this Big Universe finite or infinite, is it permissible to revise the geometry of its space in favor of the Riemannian model, or not? But the "train left": some astronomical observations seemed to confirm his theory, and Einstein believed in it so much that he no longer posed questions to it.

And the solution of the GTR equations by mathematician A. Friedman gave birth to the theory of the Big Bang (BBT), adopted with cheers by most theoretical physicists. They were so emboldened by the beauty of this "paper" model of the universe that they turned a blind eye to all its absurd conclusions and gross stretches, which, as it soon turned out, it was crowded. (A detailed analysis of its initial postulates, which led to the screaming contradictions of ΛCDM, is given in [13,14]). Thus, Einstein's conservatism did not interfere with the triumph of quantum mechanics, but did a bearish service to cosmology.

But what is striking is that the assumption of the materiality of the r-t Universe and their ability to curve violates the fundamental law of energy conservation. It must therefore be categorically rejected. Any other theory would be rejected immediately as soon as such a gross violation of one of the fundamental laws of nature was discovered. Against all odds, an exception was made for GTR! It turns out that in physics before facts all theories are equal, but GTR, nevertheless, is "equal" to everyone: it exceeds facts! That raises two questions. The first is in the name of what and what "political" forces continue to support it? The second, why does the logic of her supporters continue to shame their eyes, pretending that "everything is fine, beautiful marquise"?

In fact, as it turned out in the last decade, for GTR everything is not just not good, but simply catastrophic, as evidenced by the **fourth** revolution that has been completed in cosmology. Firstly, K. Marinoni and E. Buzzi from the University of Provence (France) experimentally PROVED that the ***geometry of the Universe's space ABSOLUTELY flat*** [15]. This result did not fit into the dogma of ACDM so much that the authors chose not to "tease the geese" and not to go against the mainstream. Therefore, in order to remain in trend, they noted "as compensation" that they had received the most accurate cosmological constant at the moment.

At the same time, they did not notice (or simulated a misunderstanding?) That, confirming the existence of the expansion process of the Universe, they fell into inexplicable contradiction with the observed almost ideal homogeneity of the distribution (filling) of masses in it. For,

since the space is flat, i.e. Euclidean, and the Universe had a "beginning" - singularity, then no alternative to strictly radial (geodesic) vectors of matter scattering from one, in fact, point could be categorically. Such a universe would have to be a rapidly expanding hollow sphere, creating an intractable contradiction between theory and observation.

Confirmation of their conclusion was obtained in experiments to measure relict radiation on the Planck space telescope (2009 to 2013). The authors of the official analysis of the obtained data [16] are noted an amazing fact. It turned out that the consistency of the results of various experiments depends on the assumed geometry of the space of the universe. As soon as the analysis of the data includes the assumption of the curvature of space, a "cosmological crisis" arises, as they say. The data seem to be "protesting" against reckoning with this factor. Therefore, ***the idea of the Euclidean of space is not a hypothesis, but a fact*** that finally confirms the conclusion obtained earlier by Marinoni-Buzzi.

Another, but the equally fundamental attribute of space was investigated in an experiment to determine the degree of grain. A group of physicists from France, Italy and Spain, analyzing the data of the Integral space telescope, showed that if the grain of space exists at all, then it should be about 10^{-48} m or less [17]. It is generally accepted that the minimum possible length in nature, less than which no material object can be, including a quantum of electromagnetic radiation, is characterized by a Planck length of 1.6×10^{-35} m.

The experiment testified that if the discreteness of space exists in reality, then the dimensions of its granules should be $\sim 10^{13}$ times less than the Planck length. Thus, it has become apparent that the space is NOT discrete and NOT corpuscular, or in other words, STRUCTURLESS. From where it follows that a ***space devoid of boundaries and all properties and attributes of material objects are not material***. It does not exist physically because it does not interact with any material object. Moreover, if the Minkowski principle is correct, ***then time is unlimited, not really existing***. In other words, neither time nor space has a beginning or an end, they are indestructible and indestructible.

Therefore, it is pointless to talk about the geometry of space, or about its curvature. It is Euclidean because the ancient Greek geometry did not impose on something non-existent any conditions or requirements related to the material world. For the same reason, Newton was right in his own way with his absolute space, absolute in the sense that, due to intangibility, it "always remains the same and stationary." In addition, it does not contain the concept of any absolute coordinate system, the existence of which, without realizing this, is insisted by the adherents of BBT, postulating the singularity paradox with its common for the entire Universe

$r \approx 0$ and $t \approx 0$. They do not guess what curious position they put themselves in, specifying the "absolute" age and radius of the Universe with a fundamentally uncertain location of the origin of their absolute coordinate system. This is possible, alas, only in their fantasies.

Thus, the question of the nature of space and time, which remained open for more than two thousand years, should in fact be considered closed! ***Space-time is something that is not, but without which nothing can exist.*** This conclusion may be puzzling to many who remain impressed by Einstein's thought experiments with watches, elevators, etc. In our opinion, giving these examples, he acted like a prestige who sincerely believed that nature, not he, but nature showed "dexterity of hands." He lost sight of the fact that all his imaginary watches and elevators are the results of human creativity. They, like all material objects without exception, strictly obey the equations of G. Lorentz, which categorically prohibit massive particles (bodies) from approaching the speed of light, deforming them accordingly in violation of the veto. The same restriction applies to hypothetical twin brothers, whose physiology is also under the press of this universal ban. All such mental experiments contradict the results of the above-mentioned real experiments. Therefore, they have no evidentiary power.

But here is a paradox that has no precedent in the history of the development of human thought!!! Representing the most grandiose revolution in ontology since antiquity, as well as a genuine revolution in ideas about space-time, the experiments of the three above-mentioned groups of experimenters caused a strikingly weak resonance in both philosophy and natural science. They were not accompanied by a thunderous fanfare from the media, and remain almost unnoticed by the general public. What are the reasons for such an inadequate reaction of the intellectual community to their landmark results? It is possible that there are several of them.

Firstly, perhaps the modern philosophical majority cares little about the problems of ontology. They are consumed by the problems of the "man in the case." Secondly, in the vast majority of physics sections from acoustics and optics, to thermodynamics and quantum mechanics, the problem of the physical existence or non-existence of space-time is also of little relevance. (Mathematical formulas describing certain local processes also do not exist materially, however, they perfectly cope with the functions assigned to them). Thirdly, the general public around the world, raised by Hollywood, is already accustomed to the fact that space and time can be treated like scenery. Therefore, the news that they are not really now perceived by few as a sensation.

Fourth, there is a powerful lobby of BBT supporters who live on grants knocked out of their respective foundations, making a name for themselves on supporting "high" science. Not surprisingly, this lobby meets with bayonets any hint that questions the impeccability of their icon. Fifth, and this, apparently, is the main thing: the exclusion of space-time from the "cycle of Nature" puts GTR and... ruins the bastions of faithful scientists! For it was GTR who "blessed" BBT to recognize the fact of the birth of the Universe from nothing and other miracles related to singularity and the inflationary phase, which their supporters secretly perceive as the fulfillment of the will of the supreme demiurge.

It is not known whether Einstein realized the striking proximity of his views on the Universe with ideas about the creation of Augustine, but she is striking. After all, this in BBT postulates the "beginning" of the Universe - the actual creation of its matter, space and time from nothing unknown power, which a believing person willingly identifies with divine will. Singularity, fabulous miracles occurring with it during the inflationary phase, contradictions of the observed homogeneity of the distribution of its matter with geometry, which is required by the dynamics of the expansion of this matter from the universal "origin" with $t \approx 0$ and $r \approx 0$, as well as many other absurdities characteristic of BBT, are strikingly close to the views of the holy theologian-philosopher [18].

1.3. Investigations

New experimental data regarding cosmology, as well as Bohr's formulation of the principle of additionality, derived from the results obtained in quantum mechanics, required a radical revision: a) dominant ideas about the structure and evolution of the Universe; b) traditional ontology. The discovery of the fact of the non-existence of space-time entailed the need to revive the model of the hierarchical Grand Universe, not limited by any r-t frames. A similar model, in which stars are grouped into structures similar to galaxies, clusters of galaxies, even larger configurations, and so on to infinity, was developed by K. Charlier [19]. She has all the prerequisites for serving as a "draft outline" to create a full-fledged, internally consistent, satisfying all empirical data of the theory of the Grand Universe.

The meaning of the principle of additionality formulated by Bohr is to refute the law of formal logic, known as the ***law of the excluded third (tertium non datur).*** The principle insists that Nature is a combination of the indissoluble unity of all its phenomena and objects without exception, while simultaneously dichotomously dividing them. At the same time, the opposite

of separation and merger is not a consequence of the process - the result of causal relations, but of the paradoxical existence of Nature itself, in which opposites do not alternately replace each other, but "coexist" simultaneously, not excluding, but complementing one another.

This thesis and the concept of "Nature" in this context require clarification.

A) By Nature we mean everything that includes the infinite in the r-t continuum, therefore, the unchanged (static) Parmenides Big Universe and countless evolving (dynamic) galaxies - the Heraclitus Minor Universes. At the same time, all the "elements" of Nature, up to the non-existent r-t, are CATEGORICALLY necessary for its existence: there is nothing "superfluous," primary and secondary in it. The being of the Big Universe is absolutely, since it is not created, destroyed and not subject to changes of any kind. The existence of the Minor Universes is relatively, since their r-t are local (relative), they undergo movements and changes, are born and die.

B) The first, most fundamental manifestation of Nature's dichotomy consists in "contrasting" the entire BEING (material and inherent to the material, including the laws of its evolution, world constants, properties of material objects, etc.), on the one hand, on the other hand – NON-EXISTENT (space-time). By the dichotomy of such a higher order, Democritus meant the separation of "WHAT" from "NOTHING." But even in this, the "nothing" dichotomy manifests itself, dividing it into temporary and spatial oblivion that are not reduced to each other. The second step of the dichotomy separates the material (real and field) from the algorithms of their existence and interaction. Its third step separates the natural from the random, constant from the variable, the fourth - order from chaos, the fifth - shaped from the formless, etc.

C) - the interaction between the ideal and material occurs due to: a) universal algorithms for the existence of material objects; b) specific information exchanged between the latter; c) the energy of creation and entropy of destruction inherent only in material objects.

D) - convergence is an addition to divergence, creating the possibility to exist both to Nature as a whole and to the whole pyramid of the entities that make up it.

E) - the generally accepted definition of "life" is unjustifiably narrowed, since everything material exists only in the form of the existence of objects combined for a limited time by certain algorithms into certain conglomerates from elementary particles to star systems with an intermediate state in the form of planetary organics. "Death" is the process of decay of

holistic systems due to internal (natural) or external (artificial) causes into subsystems of the second, third, etc. order.

Thus, if ontology is understood to mean the philosophy of being, in which intelligence (similar to human) constitutes the necessary element of the existence of Nature, then it can be represented in the most schematic form in the form of the following table.

1.4. Ontology (Being)

I**. Divergence (dichotomy):**

1. **N** = Σ U (infinite set of subsets);
2. **N**=**M**+**I**(static): **M** (**m** + **p** + **E** + **S**) = incalculable and constant;

I (**R** + **T** + **A** + **B**) = **R** - limitless, absolutely, **T** - infinitely, absolutely,

A - incalculable, universal;

3. U = M + I (dynamic): M (m + p + E + S) = calculated, relative, evolve:

phylogenesis + ontogenesis; E = quantity ↔ quality; S= increase ↔ decrease;

I (r + t + A + B) = r - limited, relative, t - final,

A - unchanged, B = quantity + quality;

4. C = communication, connection between M and I happen through A, B and E, S.
5. D = dynamic processes occurring in the Minor Universes:

5.1 – physic-chemical phenomena;

5.2 - organic processes;

5.3 - social relations;

5.4 - intellectual creativity.

II. Convergence (additionality):

Implementation of the principle of complementarity in:

1- cosmology (super-strong anthropological principle);

2- mathematics (as ideal human creativity);

3- informatics;

4 - organic evolution (in the form of recognition of the entelechy of its driving force);

5- psychology (in the form of a distinction between individual and mass psychology);

6- the activities of intelligence (manifesting itself in the form of ideologies and worldview);

7- areas of ethics (as an opposition to ideological dogmas to the principles of humanism).

III. Explanations:

N - Nature (Big Universe),

U - Universums (Minor Universes),

M - material:

m - particles,

p - fields,

E, e - energy,

S, s - entropy,

I - ideal: R, r is a non-existent space (absolute and relative),

T, t - non-existent time (absolute and relative),

A - algorithms inherent in all material: laws, principles, constants;

B - various types of information exchanged between material objects.

Part 2. Dialectics of knowledge and the principle of complementarity

Know yourself, and you will know

the gods and the universe

Hilon

2.1. From natural philosophy to philosophy

Let us now consider the consequences of the discovery of the intangibility of space-time on the processes of cognition. Taking into account Comte's consideration of cognition, we recognize as justified the appeal to history and the first steps of the emergence of gnoseology,

as a philosophical discipline, especially since it arose largely through the efforts of Socrates. Let us ask ourselves: Could ancient thinkers, who were both philosophers and naturalists, suspect that the world is really so fantastically difficult to build? The question is rhetorical, isn't it?

Therefore, it is not surprising that their attempts to explain it through passive observations and logical conclusions alone have failed. Not surprisingly and the fact that Socrates who was frankly admitting the ignorance in all that concerned knowledge of the nature was actual "coffin maker" of natural philosophy I was sincere, claiming as if "he knows that he knows nothing". Indeed, neither he himself could clearly state his concept, nor his students. It was so controversial that it did not fit into any consistent and coherent doctrine. So to date, no one is able to make a clear idea of it, raising the question: "Was there a boy"?

What contributed to Socrates "triumph over natural philosophy? First, naivety. As he and his entourage thought it was easier to know himself than nature. They did not take into account the warning of Thales, Hilon, Heraclitus, that it was difficult to know yourself, since first it was necessary to know nature. Secondly, buffonade: Socrates was the first in the history of philosophy not as a taxonomist, but as a showman. But we must pay tribute to him, unlike modern showmen, he was completely deprived of self-interest and silver love, was distinguished by dignity and independence. Nevertheless, the philosophy in his interpretation acquired the character of shocking, which finally turned compatriots away from practicing natural philosophy in favor of various, competing schools that arose from the efforts of his students.

However, there was a third, much more significant reason for the success of his demagogy: the naturally arising crisis of natural philosophy itself. Even in our enlightened age, hardly one of the hundred individuals is fond of natural sciences. It is unlikely that two and a half thousand years ago the situation in Greek society would differ significantly from the modern one in the sense of interest in the sciences. And even today, the vast majority of people are concerned with the problems of everyday life, and if and when they pose themselves "philosophical questions," the latter, most often, concern the problems of the creation of the world and, in this regard, the role of God (gods).

Natural philosophers, although they did not deny the fact of the existence of the gods, assigned them too insignificant a role in their systems. In addition, they were all highly moral people, but each of them put first the moral category that he considered the most important. From this, their ethical systems were distinguished by great diversity, which contributed little

to the consolidation of society. Meanwhile, the schools of Socrates's students only strengthened this "cacophony" of opinions. But one of his students - Plato set a steady vector of rejection of polytheism in favor of monotheism in the Greek collective consciousness, not suspecting Akhenaten's initiative, but based on considerations that differed from the motivation of the pharaoh.

Aristotle, criticizing Plato's teaching of "private" ideas, developed his "global" idea of God as a force driving the entire universe. And he taught the first lesson of the defeat of his brainchild - logic under the pressure of the idea of monotheism. Presenting God as an everlasting motor, Aristotle attributed to him a life like the human one - "what a very short time we have" [20]. The irresistible contradiction here is that our life is connected with our physiology and psychology and, in addition, is limited to the scope of birth and death. Therefore, to talk about the quality of life of a "isolated" god, to compare it with the quality of our brand life, means to neglect the logic of her creator!!! But Aristotle's authority did its job, the idea of monotheism did not seem heresy.

This explains the ease with which subsequent philosophy succumbed to the charms of Christianity: the word "love," which was associated with the name of Christ, gave the key to the hearts of people, and to their minds - the name of the god-father, the Jewish creator of the Universe. The religion that combined the ethos of "love for neighbor" with faith in "the father of heaven" seemed to solve all the problems that polytheistic paganism could not cope with. She gave simple (to primitively) and "convincing" answers to the most difficult questions.

Tertullian and Augustine, singing dithyrambs to its, incomprehensible to a modern thinking person, were impressed by this, as it seemed to them, aspect of Christianity. They believed in the reality of creating the universe with man, in six days, and in the sincerity of the love inspired by the Gospels. But, thus, they did not leave room for philosophy: it became useless, since her religious opponent coped with ontology and moral imperatives better than her. At the same time, these troubadours of Christianity did not realize that the seeming ease and accessibility of his perception represented a deadly trap for a rationally thinking mind.

And since Christianity failed to fulfill the promise - to rid the world of evil and suffering, theodicy problems arose in the mind of a medieval European. In addition, the church could not erase without a trace the ancient traditions of logical thinking, which laid deep roots in the collective consciousness of Europe. Therefore, its had to come to terms with the existence of if not a full-fledged philosophy, then at least its ersatz - dogmatic scholasticism. But to at least

partially compensate for the failure, the church used it as a dub of theology designed to prove the existence of God by logical means.

And, it should be admitted, contrary to Cicero's warnings, it succeeded in the fact that the masses believed: the god is the creator of the world, and he is almighty. His reality in Christian Europe was no longer called into question, since the church turned the life of unbelievers into hell. Moreover, not only small-scale masses, but also intellectuals believed in him. It is not surprising in this regard that I.V. Goethe recognized: "I studied the Bible according to the custom adopted in Protestant religious education, as they say - both along and across... *The Bible did not arouse my doubt about anything*!!!" [21]. This is the extent to which the zombification of even such a powerful intellect of a Christian of the 18th - 19th centuries reached that he did not notice the huge number of absurdities contained in the Bible, especially in her first books from Genesis to Joshua.

However, almost the entire European philosophy of the New Age was infected with the virus of Christianity. Of course, every major thinker (F. Bacon and T. Hobbes, J. Berkeley and D. Yum in England, F. Schlegel and G. Leibniz, I. Kant and G. Hegel in Germany, M. Montaigne and R. Descartes in France, etc.) sought to say his word, leaving his memory for centuries. But all of them, in one way or another, were engaged in improvisation, beating the main leitmotif of Christianity - faith in the creation of the god-father and in the love of the god-son. And only the most honest of all European philosophers - I. Kant found the strength to be extremely frank, to admit that his faith is not so much doctrinal as moral, is based not on the laws of logic, but on the principles of morality [22]. Hence the despair of F. Nietzsche, who exclaimed: "In what philosophy I did not throw my nets, they always carried me the head of an old idol."

The question arises: How could these titans of thought so easily lay down the weapons of criticism by trusting in the myths of the Bible? This paradox is partly explained by the fact that philosophy does not deal with facts as such, but with their interpretations. And here the possibilities of imagination are unlimited, especially since both the world as a whole and the individual existence of a person are too complex to succumb to evidence through strictly mathematical formulas or statistical laws. But what is really striking is the non-criticality of thinking even scientists who seem to be directly related to facts and only then to their interpretations.

2.2. Natural Science and Religion

In the 70s. the book "We Believe" was published [23], in which 53 outstanding scientists declared their unwavering faith in the "Lord Jesus Christ." Later, its content was expanded and supplemented by A. Fomin [20]. In addition to such textbook names as I. Newton and G. Galilei, I. Kepler and B. Pascal, the author appealed to modern believers of physics, including: M. Planck, A. Einstein, A. Compton. In order to assess their positions in relation to Christianity, it makes sense to divide the entire group he mentioned into two parts: into scientists - Darwin's predecessors or contemporaries, and into those related to a later period. At the same time, the scope of the article obliges us to limit ourselves to considering only the most instructive examples related to the names of outstanding physicists.

The first group.

B. Pascal: in his book “Thoughts on Religion” [24], he, in particular, argued that Jews are the oldest people on earth, "several centuries older than the oldest stories we know." An admirer of the Bible could not but know that while the Jews, who had barely left Egyptian captivity, had not yet made up a full-fledged people, the developed civilizations of Egypt, Babylon and Assyria had been living around them for centuries and millennia, and the Hittite kingdom had managed to go into oblivion. Moses, a follower of Pharaoh Akhenaten, gave them religion, and Joshua conquered the lands of Palestine, fighting fiercely with the five kings of Canaan. This passage of Pascal is so absurd that it brings to a standstill the question: for what purpose did he deal so rudely and unceremoniously with common sense? And what, apart from shame for reason, can such statements cause him, which overflowing his revelation?

I. Newton: The greatest scholar of the Bible could not pass by its chapter 10, which refers to the battle of Joshua with the Amorites. A bright day to complete the outcome of the battle to a victorious end, Jesus did not have enough. And he asked his god to keep the Sun running over the Earth in order to finally finish off the enemy in the light of day. "And the sun stopped, and the moon stood until the people took revenge on their enemies." (Josh. 10, 13). It is incomprehensible to the mind how the author of the laws of inertia and gravity could recognize this event as reality and argue: "The wonderful structure of space and harmony in it can only be explained by the fact that space was created according to the plan of an omnipotent and omnipotent creature "!

M. Faraday: "I am amazed why people prefer to wander in the unknown on many important issues when God gave them such a wonderful book of Revelation?" Let us not dwell on the

question of why he was not put into the greatest bewilderment by such a striking fact that Adam and Eve, it turns out, were created simultaneously and in addition an exact copy of their heavenly father (Gen. 1, 26-27). Question: with all their gender characteristics? So what sex was the almighty himself? What were its anatomical and physiological features? Does he need food and metabolism just like we are mortals? Then why does he confess to be immortal?

Not a spark of doubt about the reliability of the myths of the Bible was expressed by *L. Galvani* and *A. Volta*, astronomers *N. Copernicus, I. Kepler*, *V. Herschel* and almost all their contemporaries. It is incomprehensible: how could they turn a blind eye to the many egregious lapses that were to completely discredit its in their eyes? Why did logic so treacherously change them, showing itself without fail, as soon as the matter concerned the knowledge of the facts of the real world? G. Galileo says: "The Holy Scriptures can never be mistaken or misguided. The Scripture itself can never be mistaken, because in many places it not only allows, ***but requires an interpretation that deviates from direct literal meaning***. " In everyday life, this thought sounds like a hint: "When it is impossible, but I really want it, it is possible."

What, however, outweighed in the eyes of scholars the absurdities contained in the Bible if they noticed them? Apparently, three points: evidence of the order and harmony of the universe, as well as the idea that "*behind each clockwork should be a clockmaker, and, therefore, behind the accuracy of the intricate mechanism of the Universe should be a divine Designer and Creator*!" (R. Milliken). And most importantly: conformism and the insurmountable desire of the researcher to know the realities of this world.

The second group.

The scientific and technical revolution, initiated by Darwin's theory and the works of geneticists, as well as Bohr's works with associates - the creators of quantum mechanics, could not but provoke a response - a kind of intellectual counter-revolution. The inertia of the collective mentality is colossal. Since the basis of classical physics and biology of the XVII-XIX centuries was shaken, the inertia of thinking required revenge. She did not want to part with faith in the absolute power of causal relations, behind which was the creator of the world. The process of rehabilitation of the creator was led by Einstein, who expressed his credo as follows.

A. Einstein: "The usual idea of me as an atheist is a big misconception... I believe in God as a Person and, in my conscience, I can say that I was not an atheist for a single moment in my

life. *While still a young student, I strongly rejected the views of Darwin, Haeckel, and Hexley as views that were helplessly outdated.* (Hereinafter, italics on - G.G.) I cannot imagine a real scientist who would not have deep faith. This can also be expressed: you cannot believe in godless science. "

"The belief that the world is rational and orderly, which is akin to a religious feeling, is at the heart of all scientific works of a higher order... This belief is connected with a deep belief in the Supreme Mind, which shows itself in the world of experience, represents my concept of God. In everyday life, this can be described as "Spinoza pantheism."

"There are still people who say there is no God. But what really angers me is that they still quote me in support of their views. "

"*Fanatical atheists like slaves who still feel the gravity of their chains dropped after a hard struggle*. They are creatures who, in their resentment of the traditional "opium for the people," cannot hear the music of the spheres. "

"For us, believing physicists, the difference between the past, the present and the future is only a persistent illusion,... in a certain sense, *I am a deeply believing person*. "

"*The doctrine of God's personal involvement in natural phenomena can never be refuted in the literal sense by science,* religions can always hide in areas that science cannot yet explain."

Our comments.

№1. Einstein admired Spinoza as a pantheist. However, in both of the main treatises of the latter, "God, Man and His Happiness" and "Theological and Political Treatise," the author, firstly, appeals to God with enthusiastic admiration, as a private person, but not as a backless object scattered around the world. Secondly, this divine person appears as an ordinary mortal with his passions, then it turns out that an impassable gap lies between God and man. Spinoza has many excellent and deep arguments about opinion and knowledge, about honor and dishonor, about will and happiness. But he is, alas, hopelessly unoriginal when he talks about God.

№2. As a true believer, Einstein was convinced that strict causal relations would declassify, sooner or later, all the intentions of God. And he hoped that he was the first to know the secrets of the supreme. The discovery that in the world there are not only strictly deterministic,

but also equally significant stochastic phenomena, undermined his faith, and this, as he himself admitted, angered him.

№3. It is very likely that Einstein created GTR, with its spatially enclosed world of motionless stars (as it seemed before the discovery of Hubble), to feel "close" to God. And when the redshift of distant galaxies was interpreted as an expansion of the universe, he finally believed in divine creation. Einstein was consistent: denying the role of chance in the evolution of organics and in the world of elementary particles (in fact, denying Darwin's theory and quantum mechanics), he insisted on the spatial and temporal limitations of the Universe so that it needed the existence of a strictly deterministic and omnipotent creator.

№4. In the last century, L. Levy-Brühl argued that the collective representations of Stone Age hunters are radically different from modern logical laws of thinking. C. Levi-Strauss objected to him, affirming the unity of the human mind at all stages of its evolution. In one of the ancient African myths, the origin of the Milky Way and stars in the sky is associated with the First Girl. Angry with her mother, she threw ash into the sky, which turned into the Milky Way, and young roots that turned into stars [25].

This example shows that Levi-Strauss is right: logic often does not find a shelter in the heads of many not only ignorant, but also educated people, even some scientists. The form (algorithms) of the thinking of the vast majority has almost not changed over the millennia, as evidenced by the huge number of archaic superstitions and a wide variety of beliefs, the diversity of which does not decrease over time, but on the contrary, increases. What is not surprising is that neither the functions nor the mass of neurons and axons responsible for brain function have changed during this time, and continue to be filled with ideas.

Another thing is that the content of thinking has changed, moreover, radically. If in the past it was content with primitive myths and superstitions of ancient hunter-gatherers, then they were squeezed (but not supplanted) by religious myths like pagan and biblical ones. (If the archaic mythology generated by the imagination was limited to the democratic function of explanation-enlightenment, then the mythology of the farmer appropriated the status of mentor-overseer). And finally, the mind made the apotheosis of the scientific imagination happy: GTR and BBT are religious models of the Universe, resting, as their apologists seem, on a solid foundation of mathematics. But they forget that mathematics itself is a figment of human imagination.

In particular, in Nature there is no space and time, and mathematics allows itself to juggle not only the curvature of space and its multidimensional nature, but also with the arrow of time, directing it either one way or the other. In Nature, there are no numeric symbols and concepts like sin and cos, numbers "0" and π, √-1 and powers of numbers, logarithms, etc. And GTR and BBT actively use these symbols to create a model of a star system that simulates the Universe, which is little different from the biblical version.

Thus, scientific theory becomes a peculiar (hopefully the last) bunker of believing scientists of the twentieth century. But if such a thorny way of knowing, even for intellectuals, it is no surprise that billions of people still mentally remain at the level of our distant foremen. (By the way, as archaeological data show, among the latter there were many geniuses). Nevertheless, it is comforting that, contrary to this viscous inertia, thoughts from a thick fog of speculation, speculation and chimeras one way or another, but the outlines of truth begin to clarify.

This also applies to the concept of "God." Firstly, the time of its emergence falls on the period of the Neolithic revolution - the beginning of the transition from the lifestyle of a hunter-gatherer to the existence of a pastoralist farmer. Secondly, the appearance of the figure of gods on the horizon of mankind was a natural consequence of thinking, by analogy with the activities of the farmer - the ruler of his land allotment. Thirdly, the gods became the axis around which the hierarchical pyramid of inequality in heaven was erected, justifying the emerging hierarchy of social inequality on earth. Thus, the gods were the "nuclei of condensation" of religions - public institutions designed to contribute to the formation of *regional* civilizations.

Fourth, both elites from alpha males and the peoples themselves were interested in fixing the concept of "god." The point of contact of their interests was the understanding by both parties of the need to maintain integrity and order in their societies, as well as protection from external hostile influence. In short, at a certain stage in the evolution of the Homo sapiens species, the concept of "god" and religions fulfilled their generally positive historical mission. But this unifying, civilizing function was temporary and the *only one justifying* their existence, for in all other respects they were traps for the development of intelligence and morality.

Fifthly, in their further development, some of the most pretentious religions were transformed into ideological systems and even acquired a secular character, in which the place of mystical "heavenly" gods was taken by quite earthly gods - leaders. Sixth, in view of the polarity of ideals and the ultimate goals of these ideologies, today they have turned into their denial, into

a brake that prevents peoples from merging into a single world community. They block the formation of a single world civilization, not split, not divided by warring ideologies. Thus, summing up all the above, it can be stated that ***the concept of "god" is the generation of a social instinct, and everything that is thought about is the figment of our imagination and conservatism of collective consciousness***.

2.3. Problems of Knowledge of Nature

Modern gnoseology cannot ignore the question of knowing the fundamental foundations of being, that is, not to delve into the problems of ontology. Nor can it avoid the question of one way or another facing every consistent thinking person: if we refuse to recognize God as the source of the power that drives this world, then what is this force? It seems to us that a partial answer to these questions is contained in the view of being given in the table above. However, it needed clarification on several key issues, which were subject to much confusion and controversy. Among them are key: what is *life* and what is *entelechy*, what is the *role of man in the world* and what is the *meaning of life*? But first of all, we need to explain to the question: *Why is there knowledge*? Moreover, the traditional opinion divides this single knowledge into knowledge of Nature and knowledge of man. Adhering to this tradition, we note that for the study of the first question, it is reasonable to turn not so much to philosophy as to science.

Their utilitarian meaning does not require explanation. However, in our time it turned out that not knowledge itself, and its application in practice can be used not only for good, but also for harm, it is possible - fatal, in the case of "serving the interests" of ideologies. And if in the past ignorance only inhibited the development of mankind, today it can ruin it. Therefore, the duty of philosophy in alliance with science to dispel those illusions and misunderstandings that began to threaten our physical existence. And to do this, it is necessary to review and evaluate the validity of concepts and paradigms that have turned into false, but unquestionable dogmas and doctrines due to lack of knowledge. The achievements of the natural sciences in recent decades offer hope for a positive solution to this problem.

So, question №1, what is life? Its generally accepted definition and, accordingly, understanding still does not exist. Wikipedia claims that more than a hundred interpretations of the term "life" are known, and many of them contradict each other. In search of life in the Universe, NASA proceeds from the provision that it is a "self-supporting chemical system

capable of Darwinian evolution." NASA experts, guided by this postulate, do not notice that they generate a paradox. Since they are looking for traces of the most primitive forms of life - *prokaryotes* (devoid of a cellular nucleus), to which they do not apply the same approved concept of life.

Prokaryotes are unicellular organisms devoid of a framed cellular nucleus. They lack sexual reproduction, fixing the "date of birth," they do not know aging and death in the traditional sense. For some of them, only the time of doubling the number of generations is known, as well as their number, owed to one common progenitor. But most importantly - the first billions of years of the existence of the planet Earth prokaryotes did not participate in natural selection - a key attribute of the Darwin triad! Do NASA really not know that selection began to play a leading role only with the advent of eukaryotes, cells with a fully formed nucleus that arose only ~ 1.6 billion years ago. Following the logic of NASA specialists, it is necessary to recognize that this is the "age" of life on Earth, which experts from other organizations involved in the history of life on our planet will strongly disagree with.

Prokaryotes remained out of selection for the simple reason that the oldest of them - bacteria and archaea of *cryptozoic* (the era of hidden life forms) fed on the energy of chemical reactions, using inorganic and simplest organic compounds, which were still in excess on the surface of the early Earth. The mass of prokaryotes was still too small so that competition could arise between them, which is rivalry, a fierce struggle for a *limited resource*. And since there is no competition, there is nowhere to take up and its generation - natural selection and, therefore, life!!! Is such a clear artificiality of the definition of life adopted in a respected organization not obvious? This is all the more striking because, for example, most experts do not recognize living beings... viruses. Ignoring their enlightened opinion, these microscopic aggressors today lead a prolonged more than successful siege of the human race, showing wonders of tactics and strategy, ingenuity and plastic ("reasonable") behavior.

In its manner, the phenomenon of life in the world of elementary particles manifests itself. There is no competition in it, but there is an inexplicable energy from the point of view of the mechanicist Descartes of constant, active interaction between them. In an extremely schematic form, this world today appears in the form of a handful of "species," consisting of: a) various long-lived building "bricks" of the universe (protons, neutrons and other baryons); b) various varieties of indivisible "fragments" (quarks), from which these "bricks" consist; c) long and short-lived transporters of interactions (photons, muons and mesons) between "bricks." Their diversity is small, but it is they that give rise to an unimaginably wide range of

complex chemical compounds and reactions, as well as even more complex organic structures and processes. Even everything that we associate with the phenomena of culture - up to its highest manifestations in science and art, is generated by the initiative of the legions of inhabitants of the world of microscopic "lilliputians." Will we insist that they are dead?

In turn, astronomers could notice that life cycles rule even over celestial giants - galaxies and stars, subject to birth, development and death. Today we know that the Sun is once born, breathing from ~ 11 years to centuries, experiencing all kinds of perturbations, and will go out in about five billion years. At the same time, light and heat emanating from it and giving life to the earth's organics produce thermonuclear reactions that occur in its bowels due to the interaction of the same elementary particles: the conversion of hydrogen to helium.

Processes that take place billions of km from Earth activate chemical reactions on it, which, in turn, stimulate the formation of complex molecular compounds, culminating in the emergence of biological organisms. How do they differ from Descartes automata - aggregates collected from atoms of the same Mendeleev table? Apparently, the former experience the pressure of natural selection, the latter do not notice it. Meanwhile, the pressure of selection is caused not only and not so much by external circumstances, but, above all, by the *internal force pressing organisms*. And this power is the *desire to live, creating competition in conditions of limited resources*.

Darwin's struggle for survival *is meaningless without the desire to fight and win to survive*. We are alive as long as we have the desire. It is this readiness or will (generated instinctively or consciously) that is deprived of the machine. In humans, both are classified as phenomena defined by the definition of "*feeling*." But it, as you know, is not described by any intensely complex mathematical and physicochemical models. Therefore, we will not be able to answer the raised question No. 1 until we are clear - what force forces organisms to act, multiply and compete for resources.

Since the structure of any structure is determined by its purpose and the properties of the elements forming it, it is obvious that the structure and functioning of its upper floors (the world of organic matter) cannot be independent of the lower floors (the world of elementary particles). During the construction of all kinds of facilities, we use in the full sense of the word dead - absolutely passive bricks, concrete, mortar. The "bricks of the universe" differ from them in that they are extremely active, that is, they are not dead and, if you can put it that way, smart. They have a brilliant memory, they strictly adhere to the instructions (laws,

principles of Nature), and they themselves know what they are ordered to do, and what is strictly forbidden.

For example, they know that all of them with a mass of rest are forbidden to reach the speed of light, as well as everyone without exception - to go beyond the absolute zero temperature. In addition, electrons are well aware that they cannot occupy the same orbitals (shells around the nucleus) if they are no different from each other (Pauli principle). In organic matter, the functions of "bricks" for the upper floors of the universe are performed by RNA and DNA molecules consisting of the same "smart" elementary particles, atoms and molecules. Therefore, between them there is something self-consistent, which gives infinitely long in space and time, therefore static Nature internal (inherent) dynamism.

Hence question No. 2: what is this essence inhaling life on all the "floors" of the complexity of structuring Nature? Aristotle defined it as entelechy, but limited its scope to the world of organics. The discovery of the world of elementary particles and star systems shows that the concept of entelechy: a) is applicable to all material objects without exception; b) represents that fundamental and universal, but not mathematically described *desire for action, for activity* (in fact - for life), which unites all the material Nature; c) initiates all types of interactions from fundamental to narrowly specific, including all the variety of movements within and between objects of Nature.

For the reader, far from the "impassable jungle" of physics, this desire is most clearly manifested in what the vitalists call the will, manifested in various ways, in various situations. In the movie "The Revenant," based on real events, only the will helps the hero L. DiCaprio survive in inhuman conditions in order to take revenge on his partner, who threw him to die in an endless snow desert. The horror that inspired the young M. Tyson to his opponents so paralyzed their will that they admitted their defeat, often without entering the ring. The tragic misunderstandings that occurred with Romeo and Juliet deprived them not only of their will, but even of their desire to live without each other.

The first sign of the existence of the life of any object is recognized as a movement of any kind, but not passive, by inertia, but active, initiated by the object itself, its "will" - desire. In the world of elementary particles in a photon - the most common element in Nature, this desire is expressed in the form of a categorical imperative: it is forbidden to exist outside the movement. The ban on "rest" imposed on electrons is expressed differently: without having an internal structure and size, they actively participate in weak, electromagnetic and

gravitational interactions. Forming electron shells of atoms, they determine the optical, electrical, magnetic, mechanical and chemical properties of the substance.

In turn, the proton is an indispensable participant in all fundamental interactions. Due to the strong interaction, protons and neutrons join into atomic nuclei. Electromagnetic interaction between the nucleus and electrons forms atoms from which molecules consist. The weak interaction of protons leads to beta decay processes. And the gravitational interaction between them determines the mechanical motion of all massive bodies, including star systems. Thus, *in the non-organic nature, entelechy is expressed in the most unambiguous and consistent way: as a desire (obligation) to maintain the vital activity of the foundation of all the material that exists in Nature.*

The world of fauna and flora is ruled by RNA and DNA molecules [26]. They form the structures and functions of all "subsystems" - organs of a single organism, as well as instincts - mechanisms for the manifestation of "willpower to life" in organisms. There is not a single second for everything to fade in and stop interacting. Even death does not instantly cut off all strands of life, and many organs of the deceased organism continue to function for a long time. The chemical compounds that form the flesh, for the most part, do not "die," but turn into other compounds.

Moreover, nothing at all occurs with the elementary particles of which these compounds are composed. They leave one "shell" - the body in order to appear in the "other" shell - the other body in the process of their endless cycle. Therefore, for organisms death is the decay of the system as a single whole. At the same time, some of its subsystems continue to exist almost unchanged, others with one or another transformation. And the instinct (entelechy) in this angle appears in the form of the desire of the body by all means available to it to maintain the integrity of its structure and its ability to function as a single whole. Thus, even in the organic world, life is the concept of absolute (as a stable state), death is relative (as a transitional process).

But, as mentioned above, the function of entelechy is not limited to the problem of maintaining the life of the material elements of Nature. It also serves as a universal broker between these elements, facilitating, inter alia, the exchange of information on the characteristics of each. For example, long-lived (stable) photons, which are the most consistent embodiment of the principle of additionality in the form of corpuscular wave dualism, simultaneously appear as active "carriers" of the most diverse information in the Universe. And the information exchanged between short-lived (unstable) mesons helps

nucleons form stable systems - atomic nuclei. In turn, stable (hypothetical) gravitons form the trajectories and mechanical interactions of all massive bodies: by exchanging information, they determine, in particular, the specificity of the orbits of the triad from the Sun, Earth and the Moon.

By maintaining an inextricable link between all elements of Nature, entelechy also gives all its material objects knowledge of the universal principles of interactions, of the prohibitions imposed on them, of various kinds of fundamental constants that limit their "self-determination." This characterizes entelechy as a fundamental mechanism that carries out an internally self-consistent eternal movement, guaranteeing the unlimited existence of Nature. Thus, *entelechy is a manifestation of the principle of additionality in the intangible sphere of the existence of Nature, which appears in two forms: as the* ***desire*** *for the existence of its material elements, and as* ***information*** *about the forms, properties and algorithms of "behavior" of material objects that the latter exchange in the process of their interactions*.

Here a believer will significantly raise his finger and say: "Well, finally, by recognizing the reality of vitalism, you have veiled back to the concept of God. All your attempts to do without him did not lead to anything! " To his disappointment, he will be mistaken again. The principle of additionality PROHIBITS the dismemberment of Nature, the contrasting of some mechanisms and objects of its functioning with others, the placing of one ahead or above the other. Since its existence is based, on the one hand, on the principle of "non-interference" between the present ("what") and the non-present ("nothing"), on the other, on the universal harmony of *strictly democratic, absolutely "equal" relations between the components of the essence that make it: material and ideal*.

It is impossible to remove one thing from it so that the whole universe does not collapse, for everything depends on it, all its components need each other, and there is nothing that is the first and last. And entelechy is no exception: it is an integral component of all material objects. Neither is it unthinkable without a material medium, nor is it unthinkable without the information that entelechy carries. (There can be no desire without someone who wants what he wants.) In a certain sense, entelechy is the content, while matter is the form of the existence of elements of Nature. Hence, the latter does not need the mythical "heavenly demiurge" from the Bible, the Koran, or the Cosmic mind.

Nature does not place itself or anyone else over man and does not require slave worship to anyone. Only the majority's own childish ignorance and the minority's self-interest will vague the mind of mankind, depriving too many of their self-esteem. By completing this brief

analysis of the problems of the knowledge of Nature, we can finally give a more or less justified answer to the question of the essence of life in the next edition.

Life is:

a) the activity of material systems (from elementary particles and chemical compounds, to organisms and stellar agglomerations);

b) having their own structures, properties, characteristics and "knowledge";

c) functioning independently (stimulated by entelechy);

d) realized in various types of movements and interactions between them.

From here follows:

a) the reality of the existence of various "species" and life forms: microcosm and macrocosm, organics and inorganic, reflective and "unconscious";

b) absolute mutual dependence of all "types" of life, ensuring the existence of Nature as a single whole.

2.4. Problems of human knowledge - about the meaning of life

As can be seen from the above, all the research we have been subjected to turns out to be dichotomously divisible. This provision is fair, including with regard to the division of the meaning of life, which the individual has one, the human race - the other. Moreover, even for the individual, religion and philosophy interpret this meaning in sometimes radically different ways. For any orthodoxy-minded person, the life goals, moral values, motives and rules of conduct are dictated by the dogmas of his religion. His duty, as he understands it, is to strictly follow the name. Therefore, he tries not to retreat from them in the hope of receiving carte blanche: to continue earthly life either in heaven (Christianity, Islam), or on earth, but in another, more winning guise (Hinduism), or in blessed nirvana (Buddhism). Therefore, the reasoning about the meaning of life is not interesting to him: he knows them "better than everyone else."

Believing European moralist philosophers, they extracted rivers of ink, proving every vision of meaning, with pleasure improvising on this topic. Especially since the material is suitable: the Bible is full of paradoxes and contradictions, reasonable instructions and blessings, on the comments of which you can exercise for a long and sophisticated time, gaining the image of a

deep thinker. By the way, in this context, the Gospels are little inferior to the Bible, in addition, they have their own reckless argument - the unction of love for one's neighbor. But, playing on the strings of faith, these philosophers, ignoring this, were (and remain) "second-rate" believers in the eyes of the church, in fact heretics who allowed themselves liberal liberties regarding the instructions contained in their "Holy Scriptures."

At the same time, many have recently appeared those who independently formed and form a life position on the basis of their own life experience. They also have little interest in other people's opinions on matters relevant to their own lives. Therefore, the best we can do to highlight the above question is not to discuss it. While appreciating the reader's time, we will limit ourselves to referring to the fact that for any free-thinking individual, the meaning of life is most likely to reside in this world with dignity, filling it with meaning and joy according to his own mind, and at the same time not hypocrisy, not lie, not rape and defend their rights without encroaching on the rights of others. And to pray for bonuses and privileges, trying to shout the voices of millions of other seekers of gift benefits from the mystical almighty, in our opinion, is unworthy.

The question of the meaning of life takes on a very different meaning and content when it concerns the human race as a whole. In this context, it is identical to the situation with the world of elementary particles, terrestrial fauna and flora, stars and galaxies: any anomalous behavior of a "unit" (randomness, as you know, is capable of much) in no way affects the functioning of the "set." Therefore, there is every reason to wonder: what is the meaning of the existence of the human race. What is the meaning of the desire for knowledge embedded in us by Nature? Our desire to know the world of elementary particles was of utilitarian value: it opened staggering horizons before our daily existence. But how can we explain our desire to know the existence of the universe, trillions of miles away from us and with no real impact on us? What is up to its, what lies behind curiosity, the satisfaction of which we spend considerable sums? Why do we need knowledge that cannot be used?

These questions first arose in front of me in 1995 [27], and the answer to its was received in 2008 [28]. Experimental confirmation of the physical absence of space-time in Nature gives a powerful additional argument in favor of the concept of the Super Strong Anthropic Principle (SSAP). Its meaning is as follows. Since the Big Universe is infinite in space-time, it must be infinite in mass-energy. But since mass-energy characterizes matter, parts of which continuously interact with each other, it as a whole cannot be distributed over space (to the extent that it does not exist) strictly evenly. It, as astronomy shows, is grouped into separate

fragments - galaxies and galaxy families and further down the dimensional scale. This leads to a hierarchical construction of the Big Universe, consisting of an innumerable set of Minor Universes.

In addition, no element of matter can exist indefinitely, even if it does not lose its energy in contacts with other elements: it spends it on maintaining its own existence. This applies, among other things, to both individual stars and galaxies. Consequently, the Minor Universes are "mortal," the energy quality of their stars in the process of life is steadily deteriorating. It "burns out": energetic hydrogen (wood) is slowly but non-stop converted into inert helium (ash). In addition, the energy of stars is irreversibly scattered in space. Both of these processes shorten the life cycles of stars and galaxies, challenging the endlessly long existence of the Big Universe. It accepts it, making necessary the process of the infinite "cycle of hydrogen in Nature": regular, cyclic resumes of the reverse process - star formation with stimulation in the bowels of their stars of the thermonuclear reaction.

But what power exists in Nature, capable of taming and "domesticating" such large-scale spontaneous processes? We do not know any other power than a mind like a human one that can cope with such an epic task. Therefore, the entelechy to which Aristotle attributed the property of aspiration to life also includes a reasonable beginning. It, in particular, turns out to be a connecting element at the "breaking point" between the fading one and other Minor Universes emerging in its bowels. And in each of them, it is the mind that is called upon to control and control transition processes. Thus, it becomes clear our desire for knowledge, which is not only utilitarian (for itself), but also altruistic (for Nature) in nature. For only knowledge can give us the power necessary to maintain the eternal existence of the World.

Turning to human history, it is impossible not to see that up to today evolution left us with too little chance of matching the role of the potential demiurge of our Small Universe, or rather, the demiurge of the galaxy that will take the place of the current Milky Way. Super(eu)social instinct and natural selection, which gave rise to hierarchical civilizations of the authoritarian (socialist) type, do not give humanity the opportunity to prove itself as a cosmic builder. Since their purpose is to maintain chronic intraspecific enmity among civilizations and, as a consequence: legal inequality between its members, directed outward aggression, suppression of freedom of thought and initiative of search, ultimately - development. The tyranny of ideologies is their means by which they fog the minds of the masses. The tyranny of brute force is their weapon, which they attach to the throat of the masses [29].

Obviously, for the authoritarian type of civilization, the meaning of life for individuals and the masses has, most often, the opposite content. But is it conceivable that the idea of the meaning of life does not separate, but unites the individual and the masses? This can occur if the final goals of both sides coincide and their desire for the common good. I suspect I will be reproached for utopianism, which managed to annoy humanity a lot (especially in the form of Marxist ideology). Nevertheless, world history suggests that the unity of common and private interests not only is possible, but also really existed, moreover, for more than two centuries and when neither England with Germany nor Spain with Italy and France could be found on the map of Europe. This was the time when archaic Europe, as a social experiment, produced ancient democracy in the execution of the Athenian policy.

It was a unique case when the principle of complementarity not only proved its effectiveness in the field of human relations, but also decisively contributed to the choice of the emerging multinational Europe of the Middle Ages that vector of development that brought it to the leaders of world progress. Ancient democracy has proved that civilization, based not on natural, but on cultural selection, not on eusocial, but on normal social instinct, is more resistant to shocks than civilizations of the authoritarian type. It also proved that the fate, in the final light, of the whole world is not in the hands of leaders alone, but in an alliance of masses and leaders in the interests of the masses.

But the principle of additionality required ancient democracy to recognize another reality: the union of reason with morality. For an immoral and cynical mind is dead, a moral and humane mind is viable. True morals cannot be hypocritical, true minds cannot be duplicative. In the world history of civilizations, only democracy has proved its ability to meet both criteria of humanity at the same time.

One example illustrating what has been said. During the war of Athens with Sparta, Themistocles, one of the leaders of the Athenians, proposed a plan, the implementation of which guaranteed the victory of Athens. But this plan was so ambiguous that Themistocles did not dare to voice it publicly. Then the Athenians invited him to share his thoughts with Aristide alone - their other leader, famous for his impeccable decency, and delegate a final decision to him. When Themistocles revealed to Aristide his plan - to burn the Spartan fleet (it was easy to do), he turned to the National Assembly, saying that "the matter planned by Themistocles, the most profitable and at the same time the most unjust of all that is known to him. Hearing this, the Assembly ordered Themistocles to abandon his plan " [30].

Over the past 10-12 thousand years, Homo sapiens consciousness has evolved paradoxically: on the one hand, it has changed dramatically, on the other hand, it has remained essentially unchanged. And then and today our thinking forms: a) an unchanged rationally oriented left (individual) hemisphere; b) the variable irrational imagination of the right hemisphere - collective consciousness. The thinking of the right hemisphere is guided mainly by three principles:

1) everything that seems to exist in reality;

2) at the same time can be fair as many contradictory as you like truth;

3) it is not necessary to invoke experience or other truth to justify any truth.

This uncritical right-minded thinking, putting blind faith ahead of the sighted mind, has evolved, changing from the magic of the Stone Age, to polytheism and monotheism of civilizations. The idea of monotheism today remains true to the vast majority of people. But the most striking thing is that even some scientists continue to believe in it, whose left-ear thinking remains committed to rationality and critical analysis (the principle of two truths - human and divine). And only the belief that the conservatism of even right-minded thinking is compensated by their high morality leaves us with hope for a bright future of reason.

In turn, it is appropriate to present the dialectic of knowledge in the following form.

2.5. Dialectics (Knowledge)

1 - Feelings + reflexes;

2 - Instincts = individual + social;

3 - Psyche = individual + group;

4 - Consciousness = individual + collective;

5 - Behavior = instincts + psyche + consciousness;

6 - Thinking:

6.1 - Laws of logic: identity, contradiction, excluded third - (*Aristotle*), principle of additionality - (*Bohr*);

6.2 - Logic methods: analysis and synthesis, induction and deduction;

6.3 - Mathematics: geometry, calculus;

6.4 - Super-strong anthropic principle - (*Protagoras*).

7 - Cognition:

7.1 - Physicochemical phenomena - (*exact sciences*);

7.2 - Organic processes - (*Darwin, genetics*);

7.3 - Social relations - (*humanities*);

7.4 - Intellectual creativity - (*philosophy, science, art*).

Conclusion

New experimentally established facts make it possible to draw two fundamental conclusions.

1. Nature - The Big Universe is the infinite mass-energy of matter, staying in a limitless space-time continuum and possessing various the attributes of the living. Its immortality provides an endless cycle of the life cycles of the mortal Minor Universes. There is nothing "first" and "last," and all its components (non-existent, existing materially and virtually) are critical to its existence, performing their functions in their own time and context. It also has nothing outside or above it, including the illusory creator god.

2. A human-like mind also constitutes a necessary attribute of the existence of Nature, whose function is to control the transient processes of the life of the Minor Universes. The ultimate meaning of knowledge is the mind-holder's awareness of the mission of the demiurge of space. Only in this context can the mind act as a "creator god" for its transient Minor Universe.

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