

Comparative Analysis on Principles of Constructing a Picture of the Development of the Earth in Soviet and Post-Soviet Philosophy

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ABSTRACT

The article discusses the features of the development of Russian philosophical cosmology in the XX-XXI centuries based on a transcendental or immanent explanation of the unity of the world. This or that principle contains (or does not contain) the goal, the meaning of the earthly life of mankind. Three stages of Russian philosophical cosmology are investigated: the classical period of the late XIX - the first half of the twentieth century, the Soviet philosophy of geology of the 80s. And post-Soviet philosophical thought. A common motive was the opposition to the mechanistic picture of the world, but from different perspectives - Christian energetics or dialectical materialism, which interprets the data of the natural sciences in different ways, affirm or deny the unity of science and religion. The monographs of I.F. Zubkov and A.S. Khomenkov are analyzed as representative authors of these directions on the problem of the origin and development of the Earth. This paper traced the tradition of Orthodox energetics in Russian philosophy, arguing the inability to overcome reductionism and the naive realism of the mechanistic approach from the standpoint of dialectical materialism.

Keywords: cosmology, metaphysics, dialectics, Orthodox energetics, theoretical geology, expediency, foundations of science

I. INTRODUCTION

The world is a living whole, beautiful harmony — a person experiences this primary truth, first of all, aesthetically. Therefore, we can rightly say after Aristotle that philosophy was born out of surprise and admiration for the grandeur and beauty of the world as a cosmos. Harmony, expediency, and the perfection of nature became an argument in favor of the existence of the Higher Mind, naturally controlling the variety of forms. Cosmology and cosmogony as a branch of philosophy studies the world as a whole, a system, comprehends its principles and hierarchy. It poses cardinal problems of the origin of the world, the foundations (causes) of the unity of the world, the direction of world evolution, the nature of these changes (the prevalence of regularity or randomness), the nature of matter, and also the special place of the Earth in the Universe. Interest in its problems, the principle of cosmism, understanding of the special significance of our planet in the universe are traditional for Russian philosophy, centered around the problem of the meaning of life.

II. PRINCIPLES OF UNDERSTANDING THE UNIVERSE IN THE RUSSIAN RELIGIOUS PHILOSOPHY

Russian religious philosophy of the classical period (late XIX - first half of the twentieth century), seeing order, rationality, and the beauty of the world, affirmed:

- The uniqueness and absolute value of life on Earth, its divine source and highest purpose. Cosmic life is "the reflection and manifestation of the great laws of spiritual being" [1]. The world is symbolic and anthropocentric, it was created for man, and with the end of human history, a new eon of cosmic being will open;
- Sophianism of nature. Sophia is the ideal prototype, the law of harmony, the principle of the hierarchism of the world, directed towards the God-man in the trinity of "foundations-reason-holiness" [2]; the connection of nature with the world soul, the divine Life: "the earth in reality is the God Earth";

- The metaphysical rather than the pragmatic foundations of science, as in Western philosophy, transmitting nature "into the undivided knowledge of natural science and thereby devastating the world" [3];
- An ascetic attitude to the natural world: a whole person is able to objectively perceive nature, which means to see in it "an eternal miracle of God, a living being, praying to the Creator and his Father" [4];
- The fundamental incompatibility of the idea of the wisdom of the created world with the evolutionism of pantheistic and materialistic theories that depreciate the world and man [5];
- The unity of the universe in uncreated divine energies - the transcendental sources of the world, which justifies the anti-mechanistic picture of the world; correspondence of Orthodox energetics to the latest theories of physics and biology. The conclusion about the scientific bankruptcy of Darwinism and other similar mechanistic schemes is determined by an organic understanding of the world, recognition of the "purposeful" activity and "target" nature of being, preservation of the past and anticipation of the future, "possessing" the future in the present [6];
- The meaningfulness of the Christian model of creation by its personal character. Looking at world cosmic life through the scientific materialistic "glasses", S. Frank presented it as a meaningless game of blind forces: "And these insignificant creatures of nature dream of the meaning of their common life, they want to achieve happiness, reason and truth. What a monstrous blindness, what a wretched self-deception!" [7].

Consider the main options for resolving issues of philosophical cosmology in the history of Russian philosophy, dealing with the problems of geology of the last three to four decades. The interest of philosophers in geology is not accidental: it studies the shell of the Earth, i.e. direct environment of human life. Nature appears before man, first of all, as the nature of the Earth in the unity of biological, geographical and geological phenomena and processes. Representations of them form the center, the core of the picture of the world. Such a state of knowledge about the Earth, including geological, will remain in the foreseeable future, since it corresponds to the natural geocentrism of our worldview, despite the possible objection that it has long been outdated and a new worldview is being formed - "cosmic geocentrism".

III. PROBLEMS OF THEORETICAL GEOLOGY IN THE SOVIET PHILOSOPHY

Interest in theoretical geology appeared in Soviet philosophy from the 60-70s. Since the science of geology poses one of its main tasks to study the development of the Earth and inanimate nature as a whole, the data of this science were used to form the dialectical-materialistic concept of nature in the fight against the religious-idealistic worldview as unscientific and therefore untrue. The work of B. Kedrov, M. Rutkevich, I. Zubkov, Y. Trusov, E. Shantser and a number of other scientists is devoted to questions of substantiating the geological form of the motion of matter and determining its place among other forms of motion.. On the question of the specific content of the geological form of movement, there were various points of view. If, for example, Trusov believes that the geological form of motion is inherent in the whole Earth, then Zubkov relates only the Earth's crust to it, justifying this by the need to connect it with the empirical basis of geological science.

Features of the formation of a picture of geological reality, the formation of ideas about the systemic nature of the geological object, the search for the contradiction that underlies the development of the Earth, became the subject of a monograph by Zubkov "The nature of the object of geology and current philosophical questions of its knowledge." This study is already remarkable in that the author puts forward the idea of a "geological form of motion of matter", mediating between the chemical and biological and uniting all other forms of motion. The original point of view of the author is the recognition of the special significance of the Earth in the universe, which found its expression in the concept of "geological form of movement", "inherent (like biological and social) only to some planets, certain stages of their development, namely the emergence of the hydrosphere on the planet" [8].

Solving the problem of the nature (essence) of the Earth and, therefore, determining the main approach to it - mechanical, chemical, mineralogical, planetary (astronomical), biological - Zubkov chooses the position of production practice, primarily mining and geological, which is developing on the "cortical" part of our planet. Land is considered here from the point of view of the history of mining and the development of social production. It emphasizes the idea that human activity, becoming a geological force, determines the fate of the Earth. We see, therefore, how materialistic philosophy preserves fragments of the biblical worldview, for example, in the form of faith in the unity of the world, the central place of humanity and the Earth in the universe. Despite this, there are fundamental differences. Let us refer to the opinion of the modern Protestant creationist scientist Henry Morris, who finds fifteen contradictions between the

biblical narrative and evolutionary cosmogony. Most of them are directly related to evolutionary geology [9].

Further research on the subject of evolutionary geology Zubkov leads in the framework of two postulates - materialism and dialectics. The first sounds naively realistic: "just an understanding of nature as it is, without any extraneous additions" [10]. The second postulate, directed against the mechanistic interpretation of the principle of determinism, argues the possibility of self-development of material forms from the atomic level to the biological. Based on these postulates, we consider how the author solves the key problems of theoretical geology. We note immediately that the main problem is the identification of the carrier of the integrative, systemic properties of each form of matter motion (in this case, geological), the discovery of the basis of its functional and structural integrity. Since the carrier of integrity by definition must be material, insoluble difficulties arise, because it turned out to be simply impossible to find such a carrier.

The geological form of movement in materialist dialectics is considered as a necessary link in the continuous chain of evolution of two series of genetically close forms of movement: the first from the planetary form to the social, the second from subatomic to macrophysical. For Zubkov, it is obvious that these two rows are fragments of a single, more general series of forms of movement, but how these groups are connected, there is no clear and definite answer, as he acknowledged. At the same time, realizing the need to unroll the history of the "geological form" in time, the author tries to imagine the development of forms of motion based on the "cold" model of planet formation from the primary nebula, guided by a qualitatively-quantitative approach with its "jumps" [11]. What is the materialistic vision of the geological history of the state of our planet? Here is this cosmic landscape: the initial period is the lunar relief, the appearance of the atmosphere is an intermediate Martian stage, the hydrosphere is the final terrestrial one. The driving force of these processes is affirmed in the main contradiction of the geological system - this is the transition of the solid phase to liquid (or quasi-liquid) and vice versa, the interaction of which explains the formation of mountains and continents. Defining movement in the categories of attraction (gravity) and repulsion (solar heat), the author sees their continuous struggle, "which at some moments and in some parts of the Earth leads to a temporary advantage of attraction, at other times and in other parts - repulsion" [12]. Thus, Zubkov uses a (possibly unconsciously) metaphysical method, so as a result of the geological stage of the development of matter, life arises, the miracle of which is explained by Oparin's theory of "interaction of organic and inorganic bodies" [13].

It is generally recognized that modern geology is in a state of crisis, doubts arise about the existence of the laws of a geological object. A crisis in science arises when its theoretical foundations conflict with an array of new empirical material. And the way out of it is not so much in using the methods of exact sciences as in revising the very foundations of the Earth sciences, the prevailing worldview in them. This is precisely the task posed by Zubkov, who critically noted the predominance of metaphysics and mechanism in this scientific field, making efforts to consistently apply the principles of the dialectical-materialistic concept of development in geology. He justifiably denies the mechanistic method precisely because in it the case becomes the main mechanism of changes in the life of the Earth's crust. Zubkov makes a deep observation that if such an approach were adopted, then the Earth's crust "should not have developed, but changed incoherently and randomly. However, the whole history of geological science testifies precisely to the lawful development of the Earth's crust." And here, in our opinion, the author finds himself in an insoluble contradiction of the dialectical materialist method: on the one hand, there is nothing established once and for all, on the other, the mobilism of the theory of "new global tectonics" is rejected by him, because "everything constantly flows in it, everything is constantly changing and there is nothing stable", which means that there is no understanding that "development is a way of self-preservation of matter by means of its regular change" [14]. (An absurd conclusion follows from Zubkov's argument: the expedient law of self-preservation blindly acts in matter). It is, therefore, about the essence of laws, the source of determination. The mechanism as a source of movement and development considered an external impulse, i.e. "Contact interaction", depriving the object of internal activity, which are put in the center of attention of the dialectical concept of development. But in the search for a source of new quality, it returns to the mechanism of quantitative accumulations, inevitably encountering a paradox of integrity. So, Professor Zubkov poses a crucial question: why does the Earth's crust exist as an integrated system? The fundamental question arises of the transcendent, conceivable in abstract categories and going beyond the limits of scientific experience, which always deals with the immanent, phenomenological, and not ontological.

IV. POST-SOVIET RELIGIOUS- PHILOSOPHICAL THOUGHT ON THE ORIGIN AND DEVELOPMENT OF THE EARTH

A way out of the paradoxes of materialistic geology - the "logos-energy" principle - has been outlined in post-Soviet philosophical thought since 1991, when religious freedom appeared. "Already five years later, Orthodox publishing houses began to publish books

against evolutionism and in defense of the Orthodox doctrine of Creation. In 1997, a Russian translation of the theological refutation of evolutionism, "The Orthodox View of Evolution," by Orthodox writer of American descent, Hieromonk Seraphim (Rose) Platinsky, was published [15]. In a situation of breaking the ideological system of "scientific" atheism, many scientists and philosophers turned to the religious and philosophical tradition, mastering a huge array of philosophical, theological and scientific sources. On this wave, the country annually holds International Christmas educational readings with the involvement of a wide scientific community, organizes regular scientific seminars, creates scientific, philosophical and theological communities, such as the Shestodnev Missionary and Educational Center, and the "Intelligent Design" scientific community. The most popular topic is a critical analysis of the theory of evolution in modern science and humanities and the popularization of scientific data from biology, molecular genetics, paleontology, anthropology, geology, which testify to the rational structure of the world and the impossibility of spontaneous generation and self-development of living matter.

The general position characteristic of this direction of scientific and philosophical thought was most reasonably expressed by A.S. Khomenkov: "... modern science confirms the fullness of the Christian worldview, testifying not only of the Creator God, but also of the Almighty God of our world" [16]. This conclusion is methodologically justified by his references to the tendency of modern science to abandon naive realism and appeal to more complex epistemological ideas that were formulated by the founders of quantum mechanics, the so-called Copenhagen scientific and philosophical school (M. Planck, N. Bor, M. Born, W. Heisenberg). It has a philosophical and methodological context: the scientific picture of the world does not reflect all reality, since it contains an irremovable subjective component; needs to be supplemented by a transcendental reality directly involved in the life of the world of phenomena around us. Justifying the need to turn scientific and philosophical thought from materialism to idealism, scientists referred to physics, which confirmed the existence of reality beyond our sensory perception, moreover, they were convinced that matter is organized and exists thanks to the force controlled by the "Mind that is the matrix of all things"[17]. Khomenkov draws a parallel between these statements and Christian ideas about the Divine energies-logos, due to which the paradox of the integrity of objects of both inanimate nature at the quantum level, and at the genetic (biological) level is explained.

Since scientific law acts as one of the necessary components of theoretical knowledge, we note the peculiarity of geological laws. According to the

widespread division of sciences into precise and descriptive, geology is usually referred to the second category of sciences, which do not reveal the laws of their object, but reflect spatial and temporal diversity. Due to the uniqueness, originality and historicity of the geological object, it is often claimed that it does not have its own laws, but everything is determined by physical and chemical processes. In the mentioned book by Zubkov it is noted that in complex systems, such as geology, statistical laws that manifest themselves in the form of a trend, i.e. acquiring a probabilistic nature. However, the author, in our opinion, did not follow his own statement. However, Khomenkov in the book "Following the Trail of Reasonable Purpose" perfectly demonstrated the statistical, probabilistic approach in substantiating the uniqueness of the Earth's conditions, making it suitable for life. Could they have arisen by chance, what are the statistical probabilities for this? Is the existence of such planets possible? He finds answers to these questions in the studies of scientists who calculated that the probability of coincidence on Earth of forty-one parameters necessary for life is 10^{-53} . The American astronomer Hugh Ross determined that "there is less than one chance in a million trillions that at least one such planet exists somewhere in the Universe" [18]. Oxford University professor Roger Penrose calculated the probability of the universe with its existing parameters as a result of a random process taking place according to the new Big Bang hypothesis. An incredible number of 10^{-123} was obtained, from which a conclusion follows about the expediency of the universe.

Khomenkov also finds confirmation of the intervention of the Creator and Almighty in the testimonies of scientists about the amazing, abnormal properties of water, "aimed" at ensuring favorable living conditions. It turns out that the properties of the water system are not a simple sum of the properties of structural elements, but they acquire a new quality. To explain this phenomenon, he turns to the idea of a certain "correction" by the Almighty of the laws established by Him, endowing them with anomalous properties favorable for life.

The next area testifying to the Creator and Almighty of the world is the phenomenon of aesthetic patterns of living nature. The mathematical simplicity and orderliness of the proportion "golden section", musical forms of bird singing testifies to the "logos" principles of the world order. To confirm his observations Khomenkov refers to the work of the famous biologist A.A. Lyubishchev, who wrote that the morphological structures of biological objects "are determined only in particular cases by the functions performed, and in the more general case obeys certain mathematical laws of harmony. The variety of forms has its own order-independent function" [19].

In the philosophy of geology, the problem of geochronology acquires considerable importance, since it is with the age of the Earth that scenarios of random self-education, or biblical creation (theories of old-earth or young earth) are associated. The idea of self-generation of the world and the formation of the Earth from the emerging Sun was first put forward by Kant, then it was developed by Laplace. The next step was made by the geologist C. Lyell, who "proposed the idea that the Bible is lying, and the world itself is much more years old. Lyell won this seductive thought without a fight... It should be noted that Lyell's teachings were adopted not primarily by geologists, who saw his weaknesses better than others, but by advanced youth" [20]. It is no accident that the actualistic (uniformitarian) method of Lyell highly appreciated the freethinking D. Pisarev. At the same time, the stability of the theory of catastrophism and the global flood relied on a well-known sum of observations, giving an explanation of geological facts.

In the post-Soviet era, Daniil Sysoev turned to the biblical interpretation of this topic, suggesting that all (or most) sedimentary rocks were formed during the flood year, evidence of which, in his opinion, is fossilized footprints of people and dinosaurs and their remains in "alien" layers "large riverbeds that appeared after the flow of water, traces of drying on the shores of lakes and oceans, etc." It followed from this thesis that the stratigraphic geological column is only a speculative scheme created on the basis of the dogma of evolutionism. Its fallacy was in the initial principles of formation: "... the process of determining the age of the breed itself is based on the principle of a "vicious circle". Evolution is proved by the arrangement of fossils, which is established according to the same theory of evolution" [21]. Referring to B. Hobering's research, he points to the facts of "incorrect occurrence" when the "older" (on the evolutionary scale) breed is located above the "younger" one. Responding to the objection of evolutionary geology about the impossibility of forming a flood of sedimentary rocks in one year, Father Daniil rejects the principle of Lyell uniformism, which Zubkov unconditionally appreciated. He gives the arguments of H. Morris, who proposed to take into account the hydraulic characteristics, topographic, meteorological and lithological factors in the sediment deposition rate. As a result, each layer of sedimentary rocks is formed over a period of time from a few minutes to several days [22].

V. CONCLUSION

Faced with the opening opportunity of the finiteness of human civilization, the philosophical thought of the twentieth century is characterized by a turn towards a "new ontology" and cosmology. The origin of the world and the special place of the Earth in the Universe, being a traditional theme for philosophy, at the end of the

19th century received a new impetus for development in Russian philosophy, which responded to the contradictions of scientific and technological progress and the threats that arose to the environment and human nature itself. Of course, then it was not yet possible to predict the scale of these processes, but they were looking for a way out in the right direction - in the relationship of natural philosophy and philosophical anthropology: changing and transforming the world, a person learns the connectedness of the world with the Creator, and in this self-consciousness must learn free self-limitation and responsibility. However, the revolution changed this vector to limitless social activism, the belief that the Earth is wholly subject to human transformative influence, is in its power, and man himself is controlled only by socio-historical and economic laws, finding the meaning of life in promoting the progress of mankind. In the second half of the 20th century, space exploration, globalization processes, and environmental problems revived "planetary thinking" in Soviet philosophy, and the "nature of the geological object" begins to be debated as a kind of unique integrity. Seeing the regularity of geological processes and trying to explain them in terms of material determination, randomness, interconversion of "forms of motion of matter", philosophers come across hidden mechanism, reductionism, naive realism and speculative constructions of materialistic dialectics, as well as the tragic fact of the departure of the natural sciences from it. Since the 90s, the very question of the methodology of dialectical materialism has become possible - "the only scientific" or colossal mystification. The tradition of Russian religious philosophy is being revived with its principles of metaphysical determinism and Orthodox energetics, which anticipated the anthropic principle in science and modern scientific ideas based on quantum theory. Scientists become theologians, thereby revealing the possibility of a consistent unity of science and religion (in contrast to materialistic philosophy, which claims their incompatibility). In our time, still dominant materialism, such a position, based on the latest scientific discoveries in physics, biology, medicine, is gaining ground. But this still does not make it possible to assert that the era of materialism is a thing of the past. There are psychological, philosophical, political foundations of scientific activity that require special research. Another, in our opinion, promising direction is the religious and philosophical substantiation of the ecological approach to geology. It proceeds from the understanding of a person who is driven by "not a diminished view of the house, as of the environment, concentration camp, animal farm, but elevating the image of the palace, or even the temple of God, living in it" [23]. Only spiritual people are able to create, not destroying, but protecting the house of life, where happiness and meaning live.

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