

ON THE PERCEPTUAL, THE CONCEPTUAL, THE OBJECTIVELY REAL AND THE PROBLEM OF TRUTH IN COSMOGONY AND COSMOLOGY

Abstract

This article is devoted to the philosophical foundations of different explanations of the facts known from the latest scientific achievements of cosmogony and cosmology. It is shown, that some of the explanations on the matter under observation tacitly rehabilitate the idea of anthropocentrism finding its roots in Ptolemaic theory. In this context, great attention is paid to critical analysis of the anthropic principle, which is a version of current teleology. It is assumed that the above-mentioned principle is based on the inadequate interpretation of the hypothesis of the Big Bang. Thereat anthropic principle is determined on one side by Aristotle theory of telos and on the other side by religious and mystical ideas of creation of the World and Mankind. In contrast, the many-worlds interpretation or the Everett interpretation equates the conceptual and the objective reality going to the other extreme on this ground and postulating almost infinite plurality of alternate Universes.

This article highlights the issues specific to philosophical and methodological foundations of delusions and criteria of knowing the truth in cosmogony and cosmology.

Keywords: the perceptual, the conceptual, the objectively real, geocentrism, the global non-geocentric, Big Bang, the many-worlds interpretation, anthropic principle, truth.

Introduction

Modern physical and mathematical cosmology and cosmogony have expanded human ideas about the Universe, its formation, development and structure so much, that it has led to the exacerbation of old philosophical issues about man's place in the world, the meaning of social being, the cognition of things in the outside world and a number of other issues. It is this very fact which determines the imperishable relevance of philosophical problems of cosmology and cosmogony.

Notable among them are:

- 1) the problem of the creation of the Universe;
- 2) the problem of philosophical foundations in the cognition of the cosmogonic process;
- 3) the problem of the link between the formation of the Universe and mankind's formation in the perspective of philosophical anthropology and the meaning of being human;
- 4) the problem of the anthropic principle as a version of the teleological approach to the formation of the Universe.

The complexity of the aforementioned issues as well as the adjacent issues determines the necessity for finding the right philosophical

foundation for interpreting the latest data of current physical and mathematical cosmology.

First of all, the perceptual Universe, the conceptual Universe and the objectively real Universe must be strictly distinguished in cognition.

The current physical and mathematical model imparts ontological meaning to the space-time conceptual framework of structuration and development of the Universe. And could you tell us how reasonable such an ontologization is? To answer this question, you cannot but use the philosophical criterion of distinguishing the objectively real and the subjective which exists in perceptual and conceptual variants. Materialistic philosophy notes that each subjective belongs to the cognizing individual's consciousness and acts as the reflection of the objectively real which exists outside the mind (Oganyan, Branskij, Hovhannisyanyan, & Djidjian, 2018). But how can one make sure that the obtained knowledge is true and reliable as long as the field of descriptions of cosmological and cosmogonic facts contains nothing but conceptual schemes and physical and mathematical models and these schemes and models are representatives of consciousness, not of objective reality world?

Methodological Framework

From the very beginning of the development of classical physics, its statements and conclusions were formed on the basis of existing philosophical postulates. Isaac Newton, in his "Philosophiæ Naturalis Principia Mathematica", puts forward the following philosophical principles developed by already ancient philosophers and scientists such as atomism, absolute space, absolute time and necessary causality as his original postulates. This link, however, is not always

of linear causality character – from philosophical postulates to the scientific concept. Thus, the Ptolemaic system was determined by prevailing religious or mythical ideas that God created the world and man as the culmination of all Creation and the centre of the world. On the other hand, the geocentric model of the Universe formed the basis of geocentrism in philosophy and the latter defined anthropomorphism and anthropocentrism for natural sciences of modern and contemporary history. For its part, anthropocentrism acted as a prerequisite for the formulation of the anthropological principle put forward by L. von Feuerbach and further developed by N. Chernyshevsky.

The Copernican model literally revolutionized scientific understanding proceeding by the late 19th century from global geocentrism to equally important the non-geocentric¹. Copernican

¹ In the 20th century cosmic pluralism or the plurality of worlds was further developed both in mega- and microdirectional models and the vision of the quality and diversity of matter developed both wider and deeper. And, as a consequence the early astronomical the non-geocentric took a more generic form for natural science the non-geocentric (the concept of structural levels of matter organization) aiming at going up against the absoluteness of the earthly realm (or the macroscopic world) which is Man's natural environment and against arbitrary extrapolation of any attributes and modes (the doctrine of Attributes and Modes by B. Spinoza) to other forms of objective reality without taking into account the specificities of the latter ones (Branskij, 2014).

In the meantime, the creation of non-Euclidean geometry and set theory in the 19th century resulted in the substantial limited scope of the concept for natural science the non-geocentric and raised the problem of development, generalization and consolidation of the idea of the plurality of worlds in a completely new and very unexpected direction. In such conditions, this generalization and consolidation proved to be necessary in relation to the need to understand the diversity in the transition from the objects of the earthly realm (the macroscopic world) to which everyone may deal with as an ongoing activity to the megaworld on one side that is the world of the giant scale objects, and the microworld on the other side that is the world of micro-objects.

So, in the late 20th century the term "plurality of worlds" had some specific different meanings, name-

heliocentrism formed the foundation of new non-geocentric philosophy. Giordano Bruno's idea about an infinite Universe with numerous inhabited worlds anticipated discoveries of cosmology and cosmogony of the 20th century. Non-geocentric philosophy was of particular significance to the establishment of relativistic cosmology (Oganyan, 1987, pp. 53-59; Oganyan, 1992^a; Oganyan, 2018, pp. 127-131).

However, Albert Einstein did not create his theory on the basis of some philosophical principles. On the contrary, he made a significant change in philosophical principles by his theory of relativity. In accordance with Einstein's theory of special relativity, the absoluteness of space-time is replaced by its concrete relativity that is the inherent linkage with material systems. The material unity of the world is considered as a developing system and not as a predefined harmony. The formation of particle physics, quantum mechanics, modern scientific cosmology and cosmogony has shown that in global development is not just the necessary causal link but also unreasonable determinants of the implementing opportunity process acting as patterns, regulari-

ly:

- 1) the plurality of material worlds in the traditional sense for natural sciences (in the non-geocentric for natural sciences);
- 2) the plurality of material worlds from an ontological perspective (in the ontological non-geocentric);
- 3) the plurality of possible worlds in modal logic (in the logical non-geocentric);
- 4) the plurality of mystical worlds (in the mystical non-geocentric).

Definitions (1) and (2) allow only principally observed worlds for the objective existence; at that in Definition (1) principal observability is linked with homogeneity of the universal content of attributes (forms) of matter and in Definition (2) the link is created with heterogeneity of this content. Definitions (3) and (4) allow for the objective existence principally unobserved worlds. At that Definition (3) contains a statement, stating that principally unobserved worlds must definitely follow the laws of logic, while Definition (4) postulates the opposite statement, i.e. such a world does not follow the laws of logic.

ties and supplements of causality. As a result, the reality is not reducible to pure necessity and pure chance, and chance is a form of being of relative necessity (Ogorodnikov, 1985; Ogorodnikov & Oganyan, 2019, pp. 30-39). Advocates of logical positivism made a few tries to solve a problem of fundamental incomparability of conceptual scheme with a unified system of objective reality processes describing this scheme through the use of the coherence principle. Thus, R. Carnap (1971) was convinced that the truth of the judgment is determined by logical coherence and the coherence between this judgment and other judgements forming this concept (principle of coherence) (p. 132). However, the logicity of a theory cannot serve as the criterion of truth for this theory. This statement bases its arguments on the analysis of the history of the formation and development of both cosmology and natural sciences. Thus, Ptolemaic and Copernicus systems seem to be internally faultless and logical. However, you cannot recognize their genuine equality on this ground.

At the same time, the denial of coherence as a criterion of truth cannot serve as the grounds for explicit or implicit agnosticism. Nor can it be the assertion that substantive truth is fundamentally unattainable, especially in terms of understanding such great magnitudes as the Universe. In point of the fact, what are the grounds for the extrapolation of judgments related to parts and a greater whole, if the logical coherence of judgments in the concept cannot serve as the grounds for the conclusion of the truth of this concept?

In addition, this statement concretizes a well-known postulate of dialectical philosophy about the relativity of truth and illustrates K. F. Gödel's incompleteness theorems. Gödel showed that noncontradiction of formal arithmetic cannot be proved by the tools of this theory.

In the future, this statement was extended to each and every system of formal statements. However, Gödel's incompleteness theorems do not imply that some aspects of the essence of objective reality remains unknown forever. In addition, these theorems do not imply that human cognitive abilities are somehow limited. The above mentioned theorems only demonstrate the weaknesses and deficiencies of formal systems (Livio, 2016, p.112.).

In this context, some authors' attempts aiming at presenting the limitations of today's knowledge of the Universe as an argument to the statement of the impossibility of experiencing the Universe as a whole stem from the implicit identification of "the Universe as a whole" and "the Universe on the whole" concepts as well as from the absolutization of the philosophical statement on the concrete relativity of truth (Nesteruk, 2017, pp. 72, 307).

The discovery of the law of conservation of energy created the basis for further development of thermodynamics and statistical physics. In 1850 the German physicist R. Clausius formulated the second law of thermodynamics which is the law of increasing entropy in an isolated and non-equilibrium thermodynamic system. The law determines that thermal energy moves from more heated objects to the less heated ones. In this regard, the development of the physical world, according to Clausius, has a very definite direction: the proportion of heat in the overall balance of energy increases, and thermal energy dissipates in the world space evermore. Therefore, it is concluded that after a certain time an increase in entropy will lead to the cooling processes in all the stars and the "thermal death" of the Universe. The law of conservation of energy is observed, but the process of increasingly uniform distribution of heat over infinite space

makes the existence of higher forms of the matter and, above all, life impossible. Criticizing the concept of "Heat death of the Universe" by R. Clausius, F. Engels showed the main deficiency of his reasoning, namely that a true statement for a finite system was extended to the entire infinite Universe.

F. Engels noted that philosophical materialism must inevitably change its form with every discovery that constitutes an era, even in the natural, historical field. This statement demonstrated its heuristic value in connection with the discoveries made in the fields of elementary particle physics and quantum mechanics. They could not be interpreted on the basis of the old philosophical materialism, which had not assimilated the dialectical method of G. Hegel. In this regard, many interpretations of the discoveries in physics of the twentieth century are obviously idealistic. As an example, it suffices to consider the idea of instrumentalism in the interpretation of wave-particle duality. Such popular concepts as the "many-worlds" interpretation by Hugh Everett and the "anthropic principle" of cosmogony and cosmology are no exception. It should be noted that these ideas demonstrate opposing positions to the non-geocentric.

Everett's interpretation of quantum mechanics rejects the ideas of complementarity and unit reduction of the wave function by N. Bohr and offers a new solution to the problem of particle-wave dualism. Everett defends the view that the absolute universal state is a quantum superposition of several (and possibly of infinite number) relative states of identical parallel Universes that do not interact with each other, and it is mathematically true. This conceptual framework proceeds from the primacy of the act of observation in relation to its result. At first sight, Everett's idea seems to be a modern concretization of J.

Bruno's idea of the plurality of inhabited worlds. "The immeasurable, infinite Universe," wrote Bruno, "is composed of this space and the bodies contained in it ... There is an infinite field and vast space that encompasses everything and penetrates everything. There are innumerable bodies in it, similar to ours, of which none is more in the centre of the Universe than the other, for the Universe is infinite, and therefore it has neither the centre nor the edge" (Kojre, 2001, pp. 31, 34).

However, Bruno's idea assumes the actual existence of many worlds in the entire stationary Universe, while Everett's interpretation assumes the Universe virtual set. It seems to us that the "multi-worlds interpretation" is one more example showing how an internally logical conceptual framework concerning only one of the aspects of the world, attempts to be exhaustive in describing the entire world global model. The conceptual turns into the objectively real.

In addition, this interpretation is a clear extrapolation from microcosm structure to macrocosm structure. It is interesting to note that physicists acted diametrically opposite and extrapolated macrocosm structure to microcosm structure at the beginning and creation of microworld physics. A prominent example was the planetary model of the atom represented in 1911 by Ernest Rutherford, who came to be known as the father of nuclear physics.

It should be noted that all such concepts are explicit or implicit forms of hypostatization – with the status of objective reality to abstract conceptual structures. Hypostatization is the main method of objective idealism. It was used in all kinds of objective idealistic vision, beginning with Pythagoras numerology and Plato's theory of ideas to Hegelian absolute idealisms.

The Problem and the Ways of its Solution

The specified methodology is used one more upstart cosmogonic and cosmological idea called "the anthropic principle". This idea is often analyzed in the context of a trendy concept of modern cosmogony called the Big Bang hypothesis.

Like any hypothesis, the Big Bang idea proves to be an interpretation of empirical facts. It appeared as the most probable interpretation of the redshift effect discovered by E. Hubble in the spectrum of galaxies in 1929 and the discovery of relict radiation made by A. Penzias and R. Wilson in 1965. Both discoveries demonstrated the expansion of the observable Universe, and, therefore, showed that a long time ago (about 13.5 billion years ago according to today's calculations) the entire observable Universe was an entire point object and the "singularity" or the explosion of the observable Universe was the cause and beginning of the evolution of the Universe. On the other hand, this interpretation was not free from classical religious and attitudinal orientations (as in the case of the development of Ptolemy's geocentric model of the Universe). It can be assumed that a Belgian Catholic priest Georges Lemaitre's religious and philosophical worldview contributed to the fact that he became one of the authors of the Big Bang theory and the expansion of the Universe. It is no coincidence that this theory is used by representatives of neo-Thomism as an argument proving spontaneous creation of the Universe from nothing.

At the same time, any description of the singular state of the observed Universe before the Big Bang clearly indicates that this concept has nothing to do with objective reality. Most often,

a cosmological singularity is defined as the state of the Universe at the starting point of existence characterized by infinite density and temperature and practically zero volume. Leading experts have repeatedly noted that the singularity does not obey any of the known laws of physics and contradicts the principle of causality (Hawking, 1967, pp. 187-201).

Such concepts contradict all the laws of dialectics. Thus, the law of the transformation of quantity into quality says that any certain quality is linked with no less than a certain amount and their unity represents measure. In this context the postulation of the infinity of any property and characteristic contradicts the laws of any science, indicating that measure is quantitatively limited and, in this restriction, it qualitatively determines everything which is objectively existing. An infinite number means the absence of the existence of something specific. For example, infinite space means the lack of space as an attribute of any material system, and infinite time means the lack of a temporal characteristic and, consequently, the lack of existence of something concrete.

As well as the mentioned above “multi-world” interpretation by Hugh Everett, the concept of the Big Bang and some of the concepts adjacent to it, e.g. the concepts of “black holes”, “dark energy”, “dark matter” are in fact the examples of hypostatization.

The idea of the “anthropic principle” uses not only the method of hypostatization but also Laplacian determinism methodology, which denies objective randomness and probabilistic nature of any process. These postulates lie in the founding of teleology, which is the main philosophical and methodological basis of the anthropic principle.

It does not take into account that the development perspective of any process is probabilis-

tic, and the connection between a previous condition and a subsequent condition seems random. In terms of synergetics, the very moment of transition to a new condition acts as a “bifurcation point” at which a developing system can change dramatically and unpredictably. The foregoing is especially applicable to quantum mechanical interactions. However, in retrospect, the same process seems linear, and the relationship of states from the present to the past is uniquely determined. Therefore, when looking into the past, a randomly probabilistic scatter of events turns into an absolutely necessary connection of states, which, in turn, acts as the basis for a teleological interpretation of the evolution of the Universe.

Philosophical origin of teleology is based on the thought of a prominent ancient Greek philosopher and scientist Aristotle about four causes behind all the change in the world and his thought of the centre-forming role of the purpose-oriented reason.

It is the application of the teleological worldview to the solution of the problem of the Big Bang that on the one hand “solves” the problem of the randomness of this colossal event, and on the other hand, serves as the basis for the anthropic principle. The anthropic principle restores the rights abolished by the Copernican heliocentrism to anthropocentrism (Oganyan, 1992^b). From the point of view of the anthropic principle, the humans became human as a result of cosmological evolution beginning from the formation of matter and the world of elementary particles after the moment of Big Bang to the appearance of *Homo sapiens* on the Earth. The system of microphysical constants that had been formed by that time supposedly determined this process unambiguously.

Moreover, the weak anthropic principle clearly points to the privilege of our position in

the Universe. According to the British theoretical physicist B. Carter (1978) who is the founder of this view of the evolution of the observable Universe, “our location in the Universe is necessarily privileged to the extent of being compatible with our existence as observers” (pp. 31, 44). Thus, the fact of our being determines what we observe. This is the consideration of the process in its retrospective - from the now existing observer in all his/her entirety to the beginning of the global cosmic evolution resulting in the aforementioned observer. As it was noted, such a consideration results in the conclusion that the process of cosmic evolution is unambiguous and teleonomic.

The strong anthropic principle absolutizes the necessity for a major step forward to the humans for global cosmic evolution, strengthens this process teleonomically of and claiming that there is one possible Universe which is in some sense compelled to eventually have conscious and sapient life emerge within it (Barrow & Tipler, 1988, p. 21). Obviously, this approach logically conflicts with the abovementioned “multi-world” interpretation of Everett’s quantum mechanics, although the latter also postulates the primacy of the observation act towards its result. The following Carter’s (1978) words acknowledge the fact that the strong anthropic principle is logically connected with Laplacian determinism: “The Universe (and hence the fundamental parameters on which it depends) must be as to admit the creation of observers within it at some stage of evolution” (p. 373). One of the critics of the anthropic principle made the following wording of this principle paraphrasing a famous saying by Descartes: “I think, therefore the world is”.

The ultimate result of abstraction is an ideal object which is an example of the conceptual.

Each and every hypothesis and the theory of science makes extensive use of concepts representing ideal objects. However, everyday language words bearing casual relations to objects also act as an ideal object. Therefore, not only the scientific process but also everyday speech are examples of the manipulation of ideal objects. If at the same time, the connection between the universal and the singular is lost, there is a danger of the ontologization of concepts which is the way to the objective-idealism worldview.

In the context of the above, the anthropic principle looks like nothing more than an ideal construct which does not have any referents in objective cosmogonic processes. But do these processes exist? This Humean epistemological scepticism leads us to the conclusion that it is impossible to know the Universe as a single harmonious entity. And in its turn, dating back to ancient philosophy, this conclusion is based on the contrast between the necessity of cause-effect relations and the accidental, which is contrasted to the necessity as a groundless attempt (Democritus). Hence, there comes a new contrast between the necessary general and randomly individual. The positivist approach to scientific knowledge this knowledge treated as empirically single and random leads to the assertion that the causes of the formation of the Universe cannot be established in cosmology and cosmogony. In connection with this, it is advisable to single out for criticism the fundamentals of I. Kant’s philosophical views. These are the views of an outstanding founder of German classical philosophy, and they still stay relevant.

In the context of the above-mentioned issues of cosmology, it is especially important to turn to the consideration of Kantian antinomies. As the founder of the new philosophical school, Kant formulated a number of the problems (pri-

marily the epistemological ones) of the old philosophy very clearly, but left their solution to his followers, mainly to G. Hegel. Kant does not understand that Democritean concept about absolutely indivisible particles called atoms moving in absolute space is completely anti-dialectical (Kant relied on Newton in this regard). Kant's (1964) first antinomy intrinsically reproduces the main paradoxes of Zeno's aporias: "The world has a beginning in time, and is also limited as regards space *versus*. The world has no beginning, and no limits in space; it is infinite as regards both time and space" (pp. 404-405). Analyzing Zeno's aporias, Hegel (2019) noted that it was necessary to agree with ancient thinkers that the movement was contradictory, but it did not follow from the point that there was no movement and, on the contrary, the movement was the existing contradiction by itself (pp. 134-135). Essentially, Zeno revealed a formally logical contradiction of movement deriving from the postulates of absolute time and absolute space, which can be arbitrarily divided into any segments. The great philosopher Aristotle spoke of the dialectical connection of space and time as the properties of things that cannot exist outside the things themselves similar to whiteness which cannot exist outside the specifically white things. Hegel is credited with the formation of the first approaches to the potential infinity and inexhaustibility of the world and the definition of space and time as characteristics of changes in specific things. However, it is the great physicist Albert Einstein that drew a definite line in this dispute. When answering to a journalist's, question on how to explain in a concise and accessible way the main conclusions of the theory of relativity, Einstein gave quite a cosmological explanation and said that before it was believed that if all matter disappeared from the Universe,

then space and time would still remain, but the theory of relativity says that space and time would also disappear.

As Kant (1964) says in his second antinomy: "Every composite substance in the world is made up of simple parts *versus* No composite thing in the world is made up of simple parts," (pp. 410-411). This antinomy was also resolved by modern quantum mechanics but not by philosophy. Kant still cannot solve the problem of the link between chance and necessity. Hence, he interprets the aforementioned antinomies (like all his antinomies) in the spirit of non-observance of the law of the excluded third. Therefore, he postulates two more antinomies.

In accordance with Kant (1964), the appearance of the world and all can be derived from Spontaneity *versus* There is no Spontaneity; everything in the world takes place solely in accordance with laws of nature. (pp. 418-419). Spontaneity is incorrectly opposed to necessity. Hence the dilemma turns to be the false one. As Kant (1964) also says, there belongs to the world, either as its part or as its cause, a being (God) that is absolutely necessary *versus* an absolutely necessary being (God) nowhere exists in the world, nor does it exist outside the world as its cause (pp. 424-425). Both dilemmas are based on anti-dialectic contraposition of the necessity of a causal series (pan-causalism) and "groundless" chance. Kantian arguments in favour of the equal truth of contradictory statements seem very naive nowadays. But those trusting these arguments believe that the antinomies refer to relevant epistemological contradictions. According to the law of the excluded third, contradictory statements cannot be either true or false at the same time, but Kant "proves" that they are true in parallel. From Kant's point of view, antinomies show that the learning higher essences of

“things in themselves” is impossible either sensually or rationally. In this way, Kant unfolds before us as a partial-shape agnostic philosopher. Facing some epistemological difficulties that undermined both the old rationalism and empiricism, Kant takes an original position. He defends sensualism against extreme rationalism which treated sensations as an only imaginary knowledge. But he also defends rationalism against one-sidedness of sensualism, which interpreted thinking as a direct continuation of sensuality in quality or, at least, in terms of the functions of direct expression of the properties and the structure of the outer world. On the other hand, Kant also criticizes both sensualism, which treated mind as its successor on the way of cognizing the essence of things, and the old rationalism which claimed to fulfil the task to solve this problem directly. Already Hegel reconciled Kant’s antinomies interpreting them in the spirit of dialectical logic. He also ironically commented on the law of the excluded third. Hegel cited the following example: “Spirit is green - Spirit is not green”. To raise the question “Which of these two statements is true?” is senseless, since both of them are senseless. No law of logic can be applied to the judgements which subject and predicate are doubtful regarding their existence. The same assertions can be made about all four theses/antithesis pairs in Kantian antinomies. Kant’s antinomies are based on a misunderstanding of the dialectical link of objective opposites, and cannot serve as arguments for the existence of some incomprehensible “things in themselves”, “noumena”.

The contradiction found in judgments about something is an incentive to cognizing the truth and not the reason to abandon cognition and to join the “creeping empiricism” of phenomenology. Hegel aptly expressed himself in his regard

in his doctoral dissertation of 1801 saying that contradiction is the criterion of truth and the absence of contradiction is the criterion of error. This thesis is the key to interpreting the essence of dialectical logic. Kantian a priori knowledge and phenomenalism were developed by E. Husserl (1994), who argued that transcendently phenomenological reduction is designed to solve the problem of correlation between “constitutive subjectivity and constituted objectivity” (p. 132). At the same time, it must be recognized that such an epistemological problem really exists, but it is impossible to follow the way of orthodox subjective idealism here, calling any objective thing a subjective construction. With this approach, a radical abolition of objective reality, including all cognition and, consequently, the procedure of cosmos cognition takes place. In this way, subjectivity is destroyed for the subjective exists only in an inextricable linkage with the objective. In this case, one cannot allow a return to the exhaustively criticized position of R. Avenarius on the “principle coordination”, of the object and the subject and their inextricable linkage that is what the proponents of introducing the observer into the cosmological model do. This linkage is not of symmetrical character as there is no the subjective without the objective, but there is the objective without the subjective (in the end, this is not a question of concepts, but about the entities behind them that is about the content of concepts). Otherwise, the objective is deprived of its essence and existence. There was no past YET when there was no something subjective, the present when there was no actual linkage between this objective and something subjective. There is no future when there is ALREADY no subjective reflecting this objective.

In more recent times, the idea of principal coordination was largely discredited when trying

to use it for the interpretations of the physical discoveries of the late XIX - early XX century. Thus, observing no direct linkage between a cognizing subject and a micro-object (electron) the outstanding physicist Henri Poincaré, argued that matter at the level of the microcosm “disappears”, only some equations describing imagining things remain. The post-non-classical science includes the cognizing subject with his/her philosophical and scientific views and beliefs in the description of scientific discovery, and this allows us to establish a linkage between the cognition of truth and the dialectical materialist philosophy. Based on the foregoing, one can cast doubt on the effectiveness of the phenomenological analysis for not only cosmological theories but also for any theoretical constructs in general. For the truth is neither on the surface of a phenomenon, nor it is cognized and recognized intuitively. All examples of triggering “creative intuition” illustrate this statement, for example, according to a famous legend known already during D. I. Mendeleev’s lifetime, his periodic table came from his dream when he saw a table where all the elements fell into places as required. It is known that the author of the periodic table was very ironic about this legend, noting that the table was the fruit of the research which took more than twenty years of hard work. Another widely used variant of the subjective-idealistic solution to the problem of truth in scientific knowledge is the assertion that the truth of a theory is established on the basis of the collective agreement of a community of professional scientists (Nesteruk, 2017, p. 12). Is it not this position that dissertation councils take advantage of when they decide whether some scholars will obtain their PhDs? Truth is linked with an objective entity which is defined as a relative need for discovering many chances as the forms of its

manifestation. True knowledge as Plato taught must be a combination of sensuality and mind, and the mind must comprehend the elements of sensory experience in order to discern the common in the singular and the eternal in the transient. Plato (1968) through the mouth of his beloved teacher Socrates gives his classical truth-definition, saying that the one who speaks of things according to what they are, speaks the truth (p. 417). This understanding of truth displays the only criterion of truth, which is practice. There is no rhyme or reason to identify practice with empirical verification, as did the representatives of neo-positivism. It is a practice that sweeps away all subjective idealism assumptions about the fact that we deal not with objects and processes but with their subjective images. It is easy to get ascertained that truth cannot be verified by voting. Imagine a pan-European referendum devoted to the description of the Universe which dates back to the days when Copernicus was finishing his work on his heliocentric model. Revising the concept of “truth” going back to Plato in favour of the idea that truth is a matter of social agreement we, generally speaking, fall out of the field of science. We have good reason to believe that the famous Malevich’s Black Square would not have been possibly considered as a work of art in any society up until the twentieth century. The criteria of truth degraded in modernism and postmodernism, including but not limited to art. General significance became known as the criterion of truth. How this can “work” was brilliantly shown by G. Kh. Anderson, in his philosophical tale “The Emperor’s New Clothes”. Nowadays, the effect of such a “promoted” general significance as the criterion of truth is observed in art, in politics, in trade, and even in science that is almost everywhere. L. Wittgenstein argued that the veritable criterion of

something that he had correctly drawn when looking at it was in something that he said, meaning that it was veritable. So right or true? These may be translation difficulties. In some languages, there is no terminological distinction between truth and verity. But this does not mean that they do not differ at the level of the essence and the terms are treated as synonyms, and not as homonyms. Everyone clearly understands that on a polygraph test or a lie detector test, it is impossible to separate truth from delusions, but it is possible to separate the truth from lies. These considerations are another counterargument against the idea of the possibility of using general significance as a criterion of truth. There remains an agreement in faith or a faith agreement. But faith means choosing the road to the temple, not to the World... (Oganyan K. M., Branskij, & Oganyan K. K., 2018, pp. 57-72).

Another position in modern cosmology aiming at hiding agnosticism is that the Universe is so grandiose that it can be declared as principally unobservable. There is no reason to extrapolate the knowledge of a tiny part of the Universe to the entire observable Universe. Modern science came across the absence of observability when developing classical electrodynamics by J. Maxwell. Taking cosmology into account, the absence of observability of objective process definitely took place already in the outbreak and extension of the geocentric system developed by Anaximander of Miletus in the 6th century BC. The concept of this system was further developed by Aristotle and finally formed by Ptolemy in the 2nd century AD.

Conclusion

The human in place space, the essence and meaning of human existence are of rather differ-

ent, even opposite character in terms of geocentric and heliocentric models. Current physical cosmology has shifted the solar system to the most distant periphery of the Milky Way. Non-geocentric has become truly global. In this regard, placing the Earth back in the centre of the Universe and calling Humans the crown of creation via the postulation of the anthropic principle looks like the return to Ptolemy... It should be noted that the principle of the reproduction of the phylogenesis in the ontogenesis obtains much greater heuristic potentials and this fact drew E. Haeckel's attention as early as 1866. This principle can also be helpful in consideration of the spiritual formation of the society and the development of consciousness. In this case, the social nature of human beings will be taken into account in contrast to genetic similarity principle. However, we doubt whether this principle can be used for the argumentation of inextricable linkages and connections between the development of the Universe and humanity. What can prevent us from using current discoveries in cosmogony and cosmology to establish the basis for such linkages and connections?

The analysis undertaken demonstrates that many interpretations of current discoveries in cosmogony and cosmology are based on the following old philosophical fallacies:

1. the identification of the perceptual, the conceptual and the objectively real;
2. the classical religious and philosophical doctrine of God's creation of the World and Man;
3. metaphysical space/time absolutization, defining space and time as substances or absolute entities (the substantial concept);
4. erroneous extrapolation of the macrocosmic structural organization into the microcosm and vice versa;

5. agnostic scepticism regarding the impossibility to cognize and recognize the Universe in view of its practical infinity;
 6. claiming that the rules of logic can distinguish criteria of truth on their own;
 7. the assertion that the truth of a theory is established on the basis of the collective agreement of the majority of a community of professional scientists;
 8. hypostatization which is giving the status of objective reality to abstract conceptual structures and ideal objects;
 9. Laplacian determinism postulating absolute necessity and linearity of cause and effect relationships of the cosmogonic processes.
- Understanding and overcoming these fallacies opens the way for a dialectical interpretation of current discoveries in cosmology and cosmogony.

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