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NEW CONCEPT OF TIME

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Abstract

The author developed the concept of objectively real, in his terminology, functional tenses, and (space). As a result of the time concept formation, the nature of time and space is revealed, the answer to the questions “what is time” and “what is space” is obtained. The author substantiates the fact of functional time and space objective existence not only theoretically but also based on experimental data. According to this concept, objectively real, the functional time arises and exists in physical reality, in nature. At the same time, the times of previously known concepts, including classical mechanics and the theory of relativity, are postulated, invented by man, and in physical reality, in nature, nothing corresponds to them. The article reveals the essence of objective-real, functional time, considers its properties, which are a specific reflection of the properties that form the time of material objects, processes. The author also substantiates the conclusion arising from the previous – to recognize as incorrect the sensational report that American scientists were able to detect gravitational waves.

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1. Introduction

The issue of time is one of those problems, a simple indication of which, as the main subject of scientific analysis, leaves open the question of what kind of time we are talking about in this study. The fact is that there are many time concepts in which time is interpreted in different ways. It is said that all the times of previously known concepts are postulated, invented by man, and therefore in physical reality, in nature, nothing corresponds to them. In this regard, they inadequately reflect the objectively real, in the author's terminology, functional time that occurs and exists in nature, and not in human consciousness.

2. Problem Statement

To begin with, Einstein in physical theory abandoned the classical ideas of absolute time, which does not depend on anything. Thus, he substantiated the insubstantiality of time. In other words, A. Einstein, instead of I. Newton's substantial concept of time, proposed a relational concept of time, in which time was no longer a physical entity.

Besides, Einstein rightly connected time with real physical processes. Einstein (1966a) wrote: "In order to give the concept of time a physical meaning, we need some processes ... spatial and temporal data have not fictitious, but physically real meaning" (p. 45).

Thus, Einstein gave time to a physical meaning, a physical meaning. The fact of giving physical meaning to time by Einstein, according to Nobel Prize laureate I. Prigogine, is the most significant event of our century (Maxwell, 1892). Einstein also recognized the presence of material bodies, objects of their own time.

3. Research Questions

Nevertheless, in the theory of relativity, the nature of time has not been revealed, since the mechanism of the connection of time with specific material changes has not been fully disclosed.

It is no coincidence that in philosophy and science, it is generally accepted to this day that the question, "What is time?" – No answer.

Moreover, often, scientists of different eras and nations have argued that time is unknowable, incomprehensible. So, the famous Russian philosopher Soloviev, in the article "Time" in Encyclopedic Dictionary wrote that "time does not allow a rational definition of its essence."

Moreover, in the opinion of the American scientist Lippincot: "Before the mystery of time, everything – the abilities of the mind, the formulas of logic, the methods of science – everything becomes powerless. Time is something that is inaccessible to knowledge All thinkers of all ages could not understand this great mystery – time. There is no real solution to this problem" (as cited in Prigozhin, 1993, p. 22).

Despite what was said, Einstein's (1966b) refusal from the substantial concept of time, his justification of the connection of time with real processes and the recognition of the presence of material bodies, objects of their own time, created the prerequisites for revealing the nature of objectively real, functional time, revealing the mechanism of its connection with the movement of matter.

4. Purpose of the Study

The scientific provisions formulated by Einstein regarding the problem of time, in our opinion, allowed, for the first time in philosophy and science, developing the concept of objectively real, functional time (Lippincott, 1960). As a result, the fact of the objective existence of time was substantiated by us theoretically and based on experimental data.

According to the functional concept of time, it exists objectively real and, unlike previously known conceptual times, does not depend on a person and his consciousness. Objectively real, functional time is formed in physical reality as a result of movement, as a qualitative change. So, according to the functional concept of time, it is formed as a result of a successive change of qualitatively new states of specific material objects, processes (each object is a process). Process and time are inextricably linked. They arise, exist, and end together (we interpret the concept of a process as following changes in a particular object or phenomenon in which specific objective laws are expressed). However, it should be borne in mind that the process has substantial content and, in this regard, is a primary concept, and time is unsubstantial, and therefore it is a secondary and derivative concept.

5. Research Methods

From those mentioned above, it also follows that objectively real, functional time is formed as a result of movement as a cause of formation. This idea refers to becoming a substantial change associated with the appearance of a qualitatively new one, the emergence and disappearance of objects and their states, their transformation into other objects and states – a formation in which something that does not exist before becomes existing. When the material content of some objects is embodied in other, subsequent objects, they begin to form their times. Unsubstantial time, a time that is not a physical entity, by definition, cannot move from one object to another.

The states of material objects and the objects themselves are successively changing, and the time durations formed by them are successively changing. Moreover, the material content of successively changing objects, since it is substantial, is embodied in subsequent objects, while non-substantive time durations formed by them cannot pass from an object to an object. Another thing is that already each subsequent object (as long as it exists) forms its own, objectively existing functional time.

6. Findings

Thus, each concrete, finite object, process forms its own time, in which it exists. The fact is that qualitative changes in the process cannot occur without forming a certain, let us say, actual duration during its successive change. It is the indicated duration that is the duration of objectively real, functional time.

In each object, as a result of the potential opportunities realization in it and its interaction with the environment, many micro and macro processes take place. However, the time of an object is not the sum of the times formed in it at various structural levels of matter. The proper time of an object, as a whole, is formed by successively changing qualitatively new states, which are the result of a complex of changes occurring in the object as a whole (Lolaev, 1993).

The external manifestation of changes as a single whole, if we mention a person as an example, are childhood, adolescence, youth.

When it comes to the properties of time, it should be borne in mind that non-substantive time does not have its properties, but only reflects explicitly the properties of the substantial process that forms it (Lolaev, 1989).

So, objectively real, functional time is formed by physical, biological, chemical, geological, social, and any other real processes. However, due to its unsubstantiation, these times cannot have physical, biological properties. Their temporal rhythm and temporal durations, formed by successively changing states of the indicated processes, entirely depend only on the nature of the course of a particular process, that is, on how often their states arise and for how long.

Since time does not exist by itself, outside of material objects, processes, the own time of the previously formed but disappeared as a result of the embodiment of their material content in subsequent objects, naturally loses its physical meaning, physical meaning. Due to its insubstantiality, time, before it exists, must arise with specific material objects, processes, since functional time is formed by real existing material objects, from the moment they arise until they disappear as such (in connection with the embodiment of their material content into others, subsequent objects). New, more precisely subsequent material objects, processes, due to the insubstantiality of time, form, as already mentioned, their times, in which they exist.

As already mentioned, the merit of Einstein in the development of scientific ideas about time and space is excellent. However, A. Einstein gave physical meaning to the postulated, human-made time. We prove that time has a physical meaning, a physical meaning in connection with the fact that it is formed by really existing material objects, processes in nature itself.

Do not form functional time and successively changing days and nights, since they are a consequence of the mechanical rotation of the globe around its alleged axis. Consecutively changing years are not functional time either since a year is the result of a complete revolution of the Earth in its orbit around the Sun, that is, the result of motion as a simple movement.

At the same time, they form, and in their own time, there exist cycles of expansion and contraction of the Universe (if it pulsates), since they should arise and disappear (begin and end) as such.

It is known, the term "proper time" is used in the theory of relativity. In this case, the intrinsic time of the theory of relativity is measured by a "good clock" associated with a mechanically moving body. In contrast, the intrinsic functional time, with a strict approach, could be measured by an "ideal clock" that can accurately repeat the rhythm and duration of successively changing qualitatively new states of the process. In practice, however, the functional time can be measured with an ordinary clock, but taking into account the specifics of the process – the rhythm and time durations formed by its successively changing qualitatively new states.

It follows from the previous that proper time in the theory of relativity arises when using a thought experiment, and for this reason, it is subjective time. However, if the observer is removed from the thought experiment, then the temporary relationship will not arise anymore since the postulated, human-made time arises only in the human mind. In the absence of an observer, with the mechanical movement

of the body, the object, there will be no one to associate with it a "good watch" that would measure its own time.

Own functional time is formed in physical reality and exists independently of a person, his consciousness, while the process proceeds as such. In this regard, a temporary duration arises, is formed regardless of whether the observer is present or not. The process, as it were, "measures" its own time, the units of which are the durations formed by its successively changing qualitatively new states. And this time, because in nature there are no ideal watches, capable of accurately repeating the rhythm and duration, formed by successively changing states of this process, as already mentioned. It can be measured with an ordinary watch, taking into account their rhythm and duration.

Thus, we emphasize once again that the time of the theory of relativity arises only in the human mind. The time of a functional conception arises, is formed in physical reality, in nature itself, and the absence of an observer, since material objects, processes form it.

In this connection, it should be said that Hegel also connected time with objects, processes. He wrote: "Things disappear not because they are on time, but because they are temporary ... The process of actual things themselves is, therefore, time" (Lolaev, 1992, p. 34).

Hegel also rightly asserted: "In time, they say, everything arises and passes away ... Nevertheless, not in time everything arises and passes, and time itself is this becoming, there is arising and passing" (Lolaev, 1999).

However, Hegel, like other researchers who anticipated the creation of the concept of objectively real, functional time, did not fully reveal a mechanism for the connection of time with the material motion.

It should also be noted that the Russian mathematician and philosopher Osipovsky (1765–1832) also believed that space and time are not a form of visual representations and an entity independent of things. Osipovsky writes that "... the essence of the conditions for the existence of things, in nature itself and them, and not in our only way of feeling existing" (Lolaev, 2003).

Since objects form their times only from the moment of their appearance to the embodiment of their material content in subsequent objects, time is always present. Therefore, the functioning of the object is continuously carried out in its own present time, and not in successively changing moments of postulated time, which are not in nature.

In this regard, we emphasize once again that only the present, formed by concrete, finite material objects, processes, exists objectively, in reality, has a physical meaning. The so-called past and future times have no status of reality. In nature, the past time does not exist as a kind of receptacle into which all material objects existed earlier, but it disappeared as such, pass. This idea is explained by the fact that the substantial material content of the disappeared objects is embodied in subsequent objects, and the non-substantive time formed by the ends. The future tense, in which material objects would be before their occurrence, does not exist in physical reality.

The time in physical reality is always present. Due to this fact that time flows from the present, formed by some objects, processes to the subsequent presentation of other objects into which their material content is embodied, and not from the past through the present to the future, as is commonly believed in science (Lolaev, 2004).

Physicists recognize that temporary relationships arise during the mechanical movement of bodies and their interaction, although this time is formed only in the human mind and is measured in arbitrary units (seconds, minutes, hours, and other units of time).

At the same time, physicists ignore the fact that real-time relationships arise during motion as a qualitative change (in the bodies themselves, objects, processes), although this time is formed in physical reality. In this regard, the time of the new physics and the new natural sciences, as we see it, will also be the objectively real, functional time associated with the movement as a qualitative change.

Despite this, the researcher will always use the concept of time of the theory of relativity within the limits of its applicability, i.e., when it will deal with mechanically moving bodies, objects. The use of the concept of functional time is supposed to be applied to movement as a qualitative change, that is, to changes occurring in themselves, objects, processes. It is not a question of abandoning the achievements of the theory of relativity; it is a question of new approaches to the study and solution of problems of science and practice.

As an example, let us refer to a statement by Nobel Prize laureate David Gross (1995) of the Cavley Institute of Theoretical Physics, Santa Barbara, USA: "In my opinion, to complete the construction of string theory, we need to understand how time arises like space. We do not know-how, and this, in my opinion, is a major stumbling block on the way to unraveling the secrets of string theory" (Lolaev, 2015, p. 31).

Thus, decades ago, we were able to identify the nature of objective-real, functional time, explain how time is formed, and today, the outstanding scientist of our time, David Gross, complains that physics does not know how time originates.

It remains only to note that physics will, for a long time, be left without a fundamental concept of time, if physicists continue to ignore the fact that in science and philosophy for decades, there is already a concept in which the nature of time (and space) is revealed.

Another of our contemporaries, the famous English physicist Penrose, expects revolutionary changes in science and practice from the discovery of the "great secret of time." Penrose, in his book "The New Mind of the King. On computers, thinking, and the laws of physics," writes: "I am convinced that our modern understanding of physical reality – especially concerning the nature of time – needs a radical revision, perhaps even more radical than that which was called to live by modern theory and quantum mechanics" (Lolaev, 2005, p. 31).

In connection with the previous, we also note that in our opinion, the difficulties that modern physics encounters are related, among other things, to the fact that physics operates only with the concept of a postulated time invented by man.

As it is known, in connection with the launch of the Large Hadron Collider, physicists hoped that the so-called "wormhole" would appear in it — a hole at another time, as a result of which it would appear possible to travel in time. However, since in physical reality, each object forms its present, in which it exists, the ability to travel in time is excluded. For this reason, it is not possible to create a time machine (Lolaev, 2005).

Since concrete, finite material objects form time; it is always finite. Therefore, eternity is not infinite time, even though in philosophical literature and reference books, eternity is called the infinity of

the time of the existence of the material world or the passage of time that does not have a beginning and an end (Hegel, 1975).

The following statement by Hegel testifies to the fact that time, of course: "Since things are finite, they are in time, but things disappear not because they are in time, but because they are temporary, their objective definition is that they are such" (Hegel, 1975, p. 52).

As already mentioned, the relativity theory has refuted the classical mechanic's notions about time and space as the external background of the existence and deployment of all objects and processes. It led to the establishment of their properties' dependence on material ties and patterns of motion of bodies, however, in the fair opinion of Melyukhin "And in the Einstein writings, there is also an understanding of space and time as some entities independent of matter" (Osipovsky, 1966, p. 64). This refers, for example, to the fact that when trying to construct a geometrized unified field theory, Einstein considered gravitational and electromagnetic fields as a manifestation of the curvature of space and time (Lolaev, 1996). In support of the previous, for example, they refer to the following circumstance: in 1915, A. Einstein obtained an equation, based on which he considered the problem of deflection of light rays. Moreover, the first deviations of light rays from the observation were made in 1919. A. Einstein, on this occasion, in his article "Time, Space and Gravity," wrote: "The deviation of light rays in a gravitational field (the English astronomical expedition confirmed it during a total solar eclipse 1919)" (Gross). In this regard, it is generally accepted in science that the existence of the effect of light deflection is proved experimentally.

From our point of view, objectively real, functional, but non-substantive time, a time that is not a physical entity, cannot be bent. In this example, not space-time is curved, but the trajectory of substantial light rays.

It is also known that in the relativity theory, the time shown by a clock depends on its movement speed. From this system, a clock moving relative to a particular reference frame is slower than a clock resting in this reference frame (but entirely identical for a moving clock). Despite this, time, due to its unsubstantiation, not being a physical entity, cannot slow down. Only the process that forms time, or the clock mechanism, can slow down (Penrose, 2005).

At the same time, it is generally accepted in physics that practical observations of mu-mesons confirm the deceleration of the flow of time in a moving system. For example, the fact that mu-meson under laboratory conditions decays faster than when it flies from space at near-light speed is considered in physics as evidence of time dilation. The increase in the lifetime of these particles is known experiments occur solely as a result of the slowdown of the processes occurring in them since time, as already mentioned, is not substantial, is not a physical entity, and, for this reason, cannot be slowed down.

Thus, the results of experiments to check the effect of time dilation are interpreted distortedly, erroneously. As Hobbes rightly said, any conclusions based on false grounds are also false, no matter how logically correct they are.

To prove the fact of time dilation, they refer to various experiments, including the experiment on the study of time dilation, conducted in 1971, which consisted of the following: some cesium clocks remained on Earth, while others were placed on a jet plane. After flying around the Earth, it was found that the clock on the plane was 200 ns behind. Moreover, in this, as in all other experiments, observers

make a mistake by taking the lag of the clock for the lag of time, which occurred solely due to the slowdown of the mechanism of this clock. It should also be borne in mind that unsubstantial time, a time that is not a physical entity, can not only slow down but also stop. It can only stop, end together with the process that forms it. For this reason, it is impossible to recognize as correct the sensational message that American scientists managed to stop time.

Even if American scientists managed to stop the ray of light in a viscous medium, qualitative changes must continue to take place in it, forming the time of the ray while it existed as such (and this time has nothing to do with the speed of the light ray). With the disappearance of a given ray, its own time ends.

A similar situation is with the fact that American scientists discovered gravitational waves. The fact is that the time and space of modern science, as has already been said, are postulated, invented by man, are not physical entities, and in this regard, nothing corresponds to them in physical reality, in nature. Therefore, in nature, nothing corresponds to space-time.

For this reason, space-time, which is not in physical reality, can generate neither oscillations, nor disturbances, nor ripples. So, space-time cannot generate oscillations that “run away” from massive objects (for example, black holes) moving with acceleration. In other words, propagating oscillations, disturbances, or ripples generated by supposed space-time cannot generate gravitational waves.

Moreover, gravitational waves and objectively real space and time cannot generate, even though they arise and exist in nature, because they are not physical entities. In other words, objectively real space and time (and therefore space-time), not being physical entities, cannot generate gravitational waves, which, by definition, should be physical entities. Therefore, the detection of gravitational waves, the mechanism of occurrence of which is described by the theory of relativity, is not possible.

In this regard, one cannot agree with the fact that American scientists have discovered gravitational waves. In our opinion, this should not be about the discovery of gravitational waves by them, but the discovery of a new physical phenomenon.

In connection with the previous, it should also be emphasized that there are works in which the nature of real gravitational waves is revealed, which scientists should look for. Among them, we would include the article of Lolati “On the algorithm of gravitational interaction” (Lolaev, 2002, p. 12).

Bearing in mind the need to identify the nature of objectively real-time, Nobel laureate Prigozhin emphasized: “The main thing now in science is the rediscovery of the concept of time, it is coming to the fore ... if we introduce a new concept of time in the equations of dynamics, we can begin a new stage in the scientific and technological revolution (Hegel, 1975, p. 22).

The opinion of a prominent American theoretical physicist also testifies to the truth, according to which, even though “most physicists believe that time is an illusion, all the difficulties of physicists and cosmologists from the Big Bang to the “theory of everything” go back to the problem of the nature of time, and recognition of its reality can take fundamental science to a new level” (Melyukhin, 1966, p. 19).

7. Conclusion

Thus, there is reason to argue that the nature of objectively real, the functional time has been revealed. Moreover, the answer to the question, “What is time?” has been received.

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