DIALECTICS OF POTENTIALITY AND VIRTUALITY IN SPACE AND TIME

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Article history:		Abstract:
		The paradigmatic elements of virtualistics, which are part of the post-classical [1] sciences, have a conceptual impact on almost all problem areas of modern philosophy. This provides an opportunity to take a fresh look at issues that are considered traditional and non-traditional in philosophy. This, in particular, is evidenced by the analysis of philosophical and ontological issues from the point of view of postclassical scientific views and approaches. This article philosophically analyzes the content and essence of the concepts of virtuality and virtual reality, virtual situations in space and time, as well as the dialectic of potentiality and reality.

INTRODUCTION

Mankind has entered the world of post-industrial civilization, consisting of globalized, informatized and computerized socio-economic and cultural structures. This civilization is building an innovative world based on post-classical culture, science and technology, revolutionary in a certain sense, using all the creative potential accumulated in the last century. Under the influence of the informational and scientific and technological revolution, ontological views acquire a new look within the framework of postclassical philosophy. The lines of this image are multifaceted, non-linear nature of virtuality, virtual reality, virtual world, which is manifested in a new look at this being.

METHODS

So what is virtuality itself? The concept of virtuality comes from Latin and means "virtus" - "hypothetical", "imaginary". In ancient Roman culture, the word "virtus" was understood in four senses:
- ✓ it is a moral value, virtue (for example, in English "virtus" means virtue);
- ✓ it is some actual, existing and influential reality;
- ✓ some kind of artifact;
- ✓ virtuality is more synonymous with imaginary, hypothetical, potential, unreal [2].

The problem of virtuality is one of the important problems of post-classical science. A separate line on this problem is the formation and development of virtualistics. Virtualistics as a philosophical direction has been formed since the 80s and 90s of the twentieth century. To be more specific, the date of creation of virtualistics is considered to be 1986. Because in the introductory part of his article "Virtual state in the activity of a human operator" this year, the Russian philosopher O.I. Genisaretsky emphasizes that the concept of a virtual phenomenon is a new type of idea.

The Russian school of virtualists distinguishes four of its main features, regardless of the area in which virtual reality is used:
- ➢ Consequence (virtual reality becomes any other active reality anyway).
- ➢ Relevance (virtual reality is only relevant, it has its own space and time).
- ➢ Interactivity (virtual reality works in conjunction with all other realities, including the fact that they have consequences independently of each other).
- ➢ Independence (virtual reality has its own rules) [3].

It is these qualities that distinguish virtual reality from other realities. These features are integral features of virtual reality.

Scientists define the concept of virtual reality in different ways. In particular, according to N.A. Nosov, virtual reality is not a substantial attribute that exists independently. "The object of virtuality," writes Nosov, "exists, but not substantially" [4]. The scientist is trying to explain the meaning of the concept of virtual reality through the concepts of a virtual object and causative (generating) reality. According to this approach, a set of virtual objects arising from a generating (permanent) reality creates a virtual reality [5]. According to R. A. Nurillin, virtual reality is a virtual space that takes the form of a matrix of non-existence, which is the basis of existence. At the core of being is non-being. There are information points in non-existence, consisting of "zero points", which are possibilities that create being.

The set of information points forms a virtual space. The processes taking place in the information virtual space transform non-existence into existence. Associating virtuality with the property of perception, P.E. Solopov develops the idea that virtual reality is a reflection of perception. The author of the idea, as a methodological and epistemological instruction, is based on 46 attributive interpretations of information. There is also an interpretation of virtual reality based on the semiotic approach, authored by V. M. Rozin. In his opinion, virtuality is manifested through signs and is symbolic. The multiplicity of such diverse approaches and definitions of the essence of virtual reality makes it a complex category. In our opinion, these definitions reveal many aspects of virtual reality, but do not fully reveal their essence. Based on the above approaches, virtual reality can be characterized as follows: virtual reality is a kind of reality that expresses a state that connects the previous and subsequent constant reality generated by real phenomena, processes and events, which determines the transition from primacy to being, manifested in such properties as inclination, intermediate state, potentiality, possibility, model. This definition summarizes the facts of virtual reality, developed imagination, the main ideas of the science of virtualistics, which can be used as a working hypothesis.

Virtual reality has its essence in being. Usually, being is understood as the most general and universal philosophical category, covering all forms (material and spiritual), types (real and unreal) and manifestations (past, present and future) of being. Being has its own forms of existence: space, time and movement. We analyze space, time and their relation to virtuality, which is one of the post-classical problems.

Space and time are general forms of the existence of being, space expresses the order and scale of the mutual arrangement of world-forming objects and their component points, and time expresses the order and duration of the sequence of occurrence of phenomena and processes occurring in the world. There are metric properties and topological features of space and time [6], and virtuality gives these properties a new meaning and content.

While there are various virtual processes in space, these virtuals also give new meaning to space itself. Space, being infinite, also has a virtual sphere. The virtual sphere has a general scientific character and includes several spheres, such as the biosphere, lithosphere, and noosphere. One of the key aspects that ensure the existence of a virtual sphere are virtual particles. Virtual particles [7] are the main means of interaction, communication, information exchange between spheres. The virtual sphere ranges from micro-objects to the mega-universe. An example of such a sphere is a plant, an animal, a human bioaura, the earth's biosphere, the movement of galaxies in a certain sphere, and so on. There is a certain virtual force inside the virtual sphere. There is a certain virtual force inside the virtual sphere.

RESULTS

As a result of the modern information and scientific and technological revolution, ideas about virtual space and time are being formed. The denotation of virtual space and time is the real space and time itself. While real space-time events include natural, causal, necessary and probable processes, the creators of virtual space and time include artificial, software and model processes, including computer and computing technologies. In a space created on the basis of computer technology, reflection processes proceed in a multimedia mode, while in a real space events occur naturally. Virtual space, unlike real space, has such features as artificiality, modeling, unreality. The artificiality of virtual space can be explained by the fact that it was created by the human mind, modeling based on computer technology, the ability to work with unreal imaginary objects. The peculiarity of virtual time is that it can be reversed, stopped and, accordingly, look into the future. In virtual space and time, things and events can be stopped, slowed down, accelerated, moved forward, backward, paused, and modified at will. And movement does not have the status of an absolute variable. Development can be inverse, that is, reversible: a variety of interactions can exhibit mysterious properties unknown in the context of mundane causality to which we are accustomed.

Like real space, virtual space is multidimensional. An example of the multidimensionality of virtual space are films in 5D, 7D format.

DISCUSSION

Real processes and virtual processes exist simultaneously. For example, at singular points (virtual points), where the gravitational field is intense, the nature of space changes completely, and as a result, its properties change sharply accordingly. What are singular points? A singularity is a concentrated accumulation of a very large mass at some small virtual point in space. At such points, the dimensions of space condense and wrap around one point, as a result of which the dimensions of space change over time. Space remains one-dimensional and irreversible in nature, while time is quantized and becomes a multidimensional, multidirectional reality. At this point, any dimension of space is only centered and irreversible, and the flow of time is divided into certain quantums of time, which have separate directions at each point [8]. We can see the manifestation of virtuality in real space again in virtual particles, or in the transformation of things and events from potentiality into reality. Here possibility in a sense reflects the nature of virtuality, but potentiality should not be understood as virtuality. It is believed that the transformation of potentiality into reality is probabilistic. The lower the level of potentiality probability, the more specific its implementation. "There are two ways to realize the possibility: first, there must be sufficient conditions for the process in the state of the soil to become a reality; secondly, so that the potentiality itself does not contradict the objective conditions and laws that exist in nature and society" [9]. Therefore, potentiality means the presence of conditions for the appearance of an object, or at least the absence of such conditions for the appearance of an object. At the same time, potentiality

should be distinguished from non-potentiality. The main difference between them has to do with the likelihood of becoming a reality. The main difference between such types of potentiality as real and abstract also depends on the level of the magnitude of the probability. Each potentiality has a definite form and meaning as it becomes a reality.

The concepts of potentiality and virtuality are concepts that are close to each other in meaning and content and interact with each other. It should be noted that the relationship between these two concepts is, first of all, in a relationship of partial compatibility. Relations of partial compatibility between them can be seen: firstly, virtuality is, in a sense, a potential reality, because virtual reality is an event that has not yet come to an end, an incompletely created being; secondly, these two concepts express their essence through the category of reality. At the same time, potentiality also exists in a possible state, such as virtuality.

Here the formation of the concept of virtuality leads to the development of the concept of potentiality. Virtuality gives potentiality a new meaning and content. Virtuality reveals its essence through the concept of potentiality and reality.

CONCLUSION

Although the concepts of potentiality and virtuality are similar to each other, there are certain differences between them. But the difference between them cannot be determined by establishing a specific boundary, because these two concepts are very close and interconnected. The difference between virtuality and potentiality is as follows:

firstly, potentiality is a probability, that is, the probability that it will become a reality or not. A virtual object exists in real life and is always up to date;

secondly, virtual reality is always created from some first (constant) reality, and virtual reality can give rise to another virtual reality at the next level, and this process is endless. The transformation of potentiality into reality means the appearance of a new thing or event;

thirdly, potentiality will take a certain form when it becomes a reality. On the other hand, virtuality refers to a state of being.

Thus, new manifestations of things and events are studied and analyzed by changing events and states in the virtual space and time of existence. The virtualist approach to existence and ideas makes it possible to describe, study the patterns of worldbuilding, that is, ontological creation, and synergistic, globalist, ecological, virtualistic ideas and approaches, which are at the forefront of postclassical scientific research and demonstrate fundamental results, play an important role in the development of a new model of philosophy. and ontology of the 21st century.

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