ФИЛОСОФИЯ НАУКИ И ТЕХНИКИ

УДК 101
DOI: 10.18384/2949-5148-2024-4-35-41

GENERALLY RECOGNIZED SCIENTIFIC CATEGORIES AS A THEORETICAL AND METHODOLOGICAL BASIS FOR SCIENTIFIC RESEARCH. PART V

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Abstract
Aim. Based on philosophical methodology, to examine in detail the content of the general scientific (philosophical) categories of "space" and "time", and give them a definition in a modern version.
Methodology. The work was carried out based on a systematic approach using methods of classification and comparative analysis.
Results. The essential features of the category of "space" are revealed: coexistence of phenomena; their interaction; extension of space; its structure. The category of "time" characterizes the existence of developing phenomena from the standpoint of duration, sequence and irreversibility. The philosophical category of "time" can be presented as a universal concept reflecting the duration of the existence of phenomena, the sequence of changes in their states, the need for their development.
Research implications. The results of the study can be used to improve the methodological competencies of both teachers of philosophical disciplines and students.

Keywords: space, time, science, methodology, function, system

ОБЩЕПРИЗНАННЫЕ НАУЧНЫЕ КАТЕГОРИИ КАК ТЕОРЕТИКО-МЕТОДОЛОГИЧЕСКИЙ БАЗИС НАУЧНЫХ ИССЛЕДОВАНИЙ. ЧАСТЬ V

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Аннотация
Цель. На основе философской методологии детально рассмотреть содержание общенаучных (философских) категорий «пространство» и «время», дать им определение в современной редакции.
Процедура и методы. Работа выполнена на основе системного подхода с использованием методов классификации и сравнительного анализа.

Результаты. Выявлены существенные признаки категории «пространство»: сосуществование явлений; их взаимодействие; протяжённость пространства; его структурность. Категория «время» характеризует существование развивающихся феноменов с позиций длительности, последовательности и необратимости. Философская категория «время» может быть представлена как всеобщее понятие, отражающее длительность существования явлений, последовательность смены их состояний, необходимость их развития.

Теоретическая и/или практическая значимость. Результаты исследования могут быть использованы в совершенствовании методологических компетенций как у преподавателей философских дисциплин, так и у обучающихся.

Ключевые слова: пространство, время, наука, методология, функция, система

Introduction

Recently, it has become sad to note that scientific research is often based not on scientific, but on ordinary methodology. At best, on common sense methodology. Without categorically denying their existence and role in the life of society, one should see the limitations of their scientific research capabilities. This fact also determines the need for strict approaches to understanding the essence and functional capabilities of scientific methodology. The study of philosophical categories can bring some clarity to this process [1; 2].

Categories of "space" and "time"

It is common knowledge that changes, movement and development of phenomena occur in certain spatiotemporal conditions. This makes it necessary to express an attitude towards the essence of the philosophical categories of "space" and "time". Questions about the essence of space and time have been and are being actively discussed for many centuries by scientists representing both philosophy and other sciences. In particular, the problems of the essence of space and time were studied by: Plato, Aristotle, Democritus, Epicurus, Descartes, Spinoza, Berkeley, Mach, Hume, Newton, Kant, Holbach, Leibniz, Lomonosov, Engels, Lenin, Einstein and other researchers [4; 5]. Many modern scientists are also concerned with these problems. Let us try to summarize their views on the essence of space and time in a number of positions. First of all, let us pay attention to their attitude towards the content of the category of "space":

Position 1: Space is a specially organized set of objects and processes. Of course, the given position captures one of the features of space, but it can hardly be considered sufficient for understanding the essence of space[1] [3].

Position 2. It somewhat concretizes and specifies the previous one. Its supporters believe that space "is a form of coordination of existing objects consisting of matter"[2], coordination of objects relative to each other through distance and orientation. But even with this approach to the essence of space, many questions remain that do not allow us to consider the category "space" to be strictly defined. In particular, the question of how to understand the coordination of objects and phenomena remains open?

Position 3: "Space is a form of existence of matter, characterizing the extension and mutual arrangement of bodies"[3]. As can be seen, two essential features of space are distinguished here: extension and mutual arrangement of phenomena. This is true, but not enough to fully represent the essence of space.

Position 4: Space encompasses the extension and volume of existence of material objects[4]. We will leave it without comment, since the question of the relationship, correlation of

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[4] Моисеева Н. А., Сороковикова В. А. Философия: краткий курс. 2-е изд., доп. СПб.: Питер, 2010. С. 131.

such phenomena as extension and volume of a phenomenon remains open.

Position 5: Space is "a form of existence of matter, which characterizes the order of arrangement of bodies, their geometric shape, extension"[1]. There remains a mystery about the identity and differences between the geometric forms of phenomena and their extension.

Position 6. It can be called both traditional and classical. Here is its version: "Space is one of the main objective forms of existence of matter. The concept of space characterizes the arrangement of material objects relative to each other, expresses the extension of bodies, their existence"[2]. In our opinion, all of the above-mentioned features are essential characteristics of space.

Position 7. In essence, it is a development and clarification of the previous one. It is no coincidence that it is presented in the works of the authors who formulated the previously named position. In particular, we read: "So, space is a form of existence of matter, which characterizes its extension, structure, coexistence and interaction of elements in all material systems"[3]. It is easy to notice that in the given position, the feature of the structure of space is highlighted, which concretizes the attitude towards it, if we keep in mind that the structure is a way of ensuring the all-connectedness of phenomena, which, in fact, form space. In a word, there is every reason to recognize the definition as correct: "... space is a form of existence of matter, characterizing its extension, structure, coexistence and interaction of elements in all material systems"[4].

With this approach, we can present the essential features of space as follows:

a) coexistence of phenomena,

b) their interaction,

c) extent of space,

d) its structure.

These features are reflected in the philosophical category of "space". Now it is time to analyze the points of view of modern authors regarding the essence of the category of "time" [7; 8; 9]:

Thesis 1. "Time is one of the main objective forms of existence of matter. Time characterizes the duration of the existence of processes and phenomena, the sequence of changes in states in the development of all material systems. The concept of time reflects such properties of objects as their stability and variability, existence before, after and simultaneously in relation to other objects. Time characterizes irreversibility: it flows from the past through the present into the future"[5]. Many researchers agree with this interpretation of time. It reflects two important features of time – duration (length) and the sequence of changes in the states of phenomena [10; 11].

Thesis 2. The original is the presentation of time as a form of coordination of objects through sequence and duration[6]. True, in this case the fragment of coordination of two important features of time remains unclear. Coordination is explained in the following conclusion: "Time is a form of coordination of changing objects and their states. It consists in the fact that each state represents a sequential link in the process and is in certain quantitative relations with other states. The order of change of these objects and states forms the structure of time"[7].

Thesis 3. Those researchers are right who associate time not only with moving matter but believe that time is "the form of the flow of all mechanical, organic, mental and social processes, the condition of the possibility of change, development. It is the form of emergence, formation, flow, destruction in the world, as well as the world itself, together with what relates to it"[8] .

Thesis 4. It is difficult to deny the truth to those researchers who consider space and time in their organic unity, believing that they are universal forms of existence, coordination

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[8] Бучило А. Ф., Исаев И. А. История и философия науки. М.: Проспект, 2021. С. 328–329.

of objects, seeing in this the universality of the named forms[1] .

Thus, time characterizes the existence of developing phenomena from the standpoint of duration, sequence and irreversibility.

The philosophical category of "time" can be presented as a universal concept reflecting the duration of the existence of phenomena, the sequence of changes in their states, the need for their development. Note that when considering the categories of "space" and "time", we:

a) consider their content as one of the attempts to present a modern vision of the essence of their system;

b) do not idealize this system in any way and do not consider it complete. It will develop both quantitatively and qualitatively;

c) note once again that the emergence of this topic was dictated by the need for scientists to present the content and essence of the methodology of scientific research, formed primarily on the basis of general scientific categories. In short, the categories of philosophy are the basis of the methodology of scientific research.

Methodological functions of philosophy

In completing the research cycle of basic philosophical categories, we will once again clarify the methodological functions of philosophy in their relation to science:

– heuristic (formation of hypotheses and theories),

– coordinating (coordination of methods),

– integrating (between scientific disciplines),

– logical-gnoseological ("special sciences need logic, gnoseology, general methodology of cognition"[2]).

What is interesting about this approach to the functions of philosophy?

Firstly, by its peculiar definition of the essence of functions. It is unlikely that one can fully agree with it, since the definition of a function is devoid of an ontological basis, but the hint at a function as a manifestation of the activity of a phenomenon in an environment deserves attention [6; 12].

Secondly, the desire to systematize the functions of philosophy into two groups is of interest: ideological and methodological.

Thirdly, the attempt to present their essence through subfunctions is interesting. In our opinion, the problem has not been fully solved, it is rather contradictory and unproven. But that is another question. Without entering into a discussion, we emphasize that this author also illustrates the functional unity of science and philosophy.

Taking into account the above, we will draw several conclusions:

Conclusion 1. There is no unity among scientists regarding the essence of the functions of philosophy.

Conclusion 2. The functions of philosophy are interpreted in a very wide range.

Conclusion 3. Most researchers see the functional basis of philosophy in the unity of its three main functions: epistemological, methodological and ideological.

Conclusion 4. It is recognized that the named functions do not exhaust the entire diversity of the functions of philosophy.

Conclusion 5. The functions of philosophy have not been fully studied. Work in this direction should continue.

Conclusion 6. The functions of philosophy are diverse, but their systematization is possible.

Conclusion 7. Only by moving towards the essence of the real social functions of philosophy can we come to its understanding.

Conclusion 8. The functions of philosophy are dialectically variable phenomena, not static.

Conclusion 9. The functions of science and philosophy (if we understand science as a specific social phenomenon) coincide not only in the main, but also in the details, which gives us the right to talk about their unity.

It would seem that having made the above conclusions, we could put an end to the eternal dispute about whether philosophy is a science. At the same time, the aforementioned series of articles is aimed at a complete (as far as possible today) disclosure of the system of

[1] Философия / под ред. В. П. Кохановского. Ростов н/Д.: Феникс, 2001. С. 253.

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functions of philosophical knowledge in the interests of solving two problems:

a) showing the unity of science and philosophy,

b) confirming the practical possibilities of the latter.

Having confirmed the practical status of philosophy, we can talk about the special practical significance of the philosophical, general scientific algorithm of cognition. Based on the above positions of scientists and moving towards the object of philosophy, it becomes possible to solve two groups of problems: to determine the essence of the entire set of functions of philosophical knowledge and then group them. So, the task of our future research:

– to present the whole variety of social functions of philosophy,

– to try to logicalize them (coordinate, subordinate),

– to collect them into certain "essential" blocks,

– to show the logic of the "work" of these "blocks",

– to prove that philosophy is functionally a science.

In our next article, we will begin by trying to present as fully as possible the functions that philosophy performs in our lives. Philosophy studies the laws of nature, society and consciousness in unity, therefore, it must function in nature, society and human consciousness. We will try to highlight its functions on an ontological basis, and not on the basis of the opinions of even very authoritative researchers, and for greater clarity, we will divide the functions under consideration into conditional blocks:

1. Functions of the ontological-gnoseological block (ontological, gnoseological, informational, integrative, explanatory, descriptive and terminological (conceptual) functions).

2. Functions of the "historical" block (historical, cumulative (accumulating), communicative and reconstructive functions).

3. Functions of the logical block (logical function, functions of proof, rationalization (rationalization) and teleological function).

4. Functions of the methodological-methodical block (methodological, methodical, algorithmic, nomonological, evaluative, critical and generative functions).

5. Functions of the ideological block (didactic, educational, propaganda, agitation, ethical, aesthetic, cultural, normative and ideological functions).

6. Functions of the practical block (praxeological, criterial, mobilization, organizational, regulatory functions).

Conclusion

Thus, comparing the social functions of philosophy and science, it is easy to find much in common. In fact, they are completely identical. The exception is some details that do not create grounds for asserting the functional difference between science and philosophy. This conclusion is direct evidence that philosophy is a science working for practice, capable of offering its own original algorithm for cognition and transformation of the phenomena of reality. This is on the one hand. On the other hand, all scientific research without exception, if they truly deserve such a qualification, perform the above-mentioned functions to one degree or another. This was the main reason for their presentation in the following articles.

Статья поступила в редакцию 24.08.2024.

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FOR CITATION

Bondareva Ya. V., Sinenko V. Ya., Kostadinovic D. Generally Recognized Scientific Categories as a Theoretical and Methodological Basis for Scientific Research. Part V. In: *Contemporary Philosophical Research,* 2024, no. 4, pp. 35–41.
DOI: 10.18384/2949-5148-2024-4-35-41

ПРАВИЛЬНАЯ ССЫЛКА НА СТАТЬЮ

Бондарева Я. В., Синенко В. Я., Костадинович Д. Generally Recognized Scientific Categories as a Theoretical and Methodological Basis for Scientific Research. Part V // Современные философские исследования. 2024. № 4. С. 35–41.
DOI: 10.18384/2949-5148-2024-4-35-41