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ГЛАВНЫЕ ХАРАКТЕРИСТИКИ СОВРЕМЕННОГО ЭТАПА РАЗВИТИЯ НАУКИ

Аннотация*: В данной статье рассматриваются основные характеристики современного этапа развития науки.*

Ключевые слова: *наука, философия, социология, постнеклассическая наука, глобальный эволюционизм, социальное и гуманитарное познание*

MAIN CHARACTERISTICS OF THE MODERN STAGE OF SCIENCE DEVELOPMENT

Abstract: *This article examines the main characteristics of the current stage of development of science.*

Key words: *science, philosophy, sociology, post-non-classical science, global evolutionism, social and humanitarian cognition*

Postnonclassical science and changes in the world outlook of technogenic civilization. Scientism and anti-scientism. Science and parascience. Search for a new type of civilizational development and new functions of science in culture. Scientific rationality and the problem of the dialogue of cultures. The role of science in overcoming modern global crises.

The concept of post-non-classical science was introduced in the late 80s of the 20th century by Academician V.S.Stepin. This was done in order to designate a new stage in the development of science, associated with the formation of nonlinear natural science in the process of the scientific revolution that has been unfolding over the past three decades and has not yet been completed.

The main characteristics of modern, post-non-classical science are:

1. Widespread dissemination of ideas and methods of synergetics - the theory of self-organization and development of complex systems of any nature.

Synergetics shows that modern science deals with very complex systems of different levels of organization, the connection between which is carried out through chaos. Each such system appears as an "evolutionary whole". Synergetics opens up new boundaries of superposition, assembling the last of the parts, building complex developing structures from simple ones. At the same time, it proceeds from the fact that the unification of structures is not reduced to their simple addition, but there is an overlap of the areas of their localization: the whole is no longer equal to the sum of parts, it is not more and not less than the sum of parts, it is qualitatively different.

2. Strengthening the paradigm of integrity, that is, awareness of the need for a global comprehensive view of the world. The adoption of the dialectic of integrity, the inclusion of a person in the system is one of the greatest scientific achievements of modern natural science and civilization as a whole.

3. Strengthening and ever wider application of the idea (principle) of co-evolution, ie, conjugate, interdependent change of systems or parts within the whole. Being biological in origin, associated with the study of the joint evolution of various biological objects and levels of their organization, the concept of coevolution today covers a generalized picture of all conceivable evolutionary processes - this is global evolutionism.

4. Changing the nature of the object of research and strengthening the role of interdisciplinary integrated approaches in its study.

In modern methodological literature, they are more and more inclined to the conclusion that if the object of classical science were simple systems, and the object of non-classical science - complex systems, then at present the attention of scientists is increasingly attracted by historically developing systems, which over time form new levels your organization. Moreover, the

emergence of each new level affects the previously formed ones, changing the connections and the composition of their elements.

5. An even wider application of philosophy and its methods in all sciences.

The subject of active discussion today are questions about philosophy itself as such; its place in modern culture; about the specifics of philosophical knowledge, its functions and sources; about its capabilities and prospects; on the mechanism of its impact on the development of knowledge (including scientific) and other forms of human activity.

6. Methodological pluralism, awareness of the limitations, one-sidedness of any methodology - including rationalistic, including dialectical-materialistic.

In science of the 20th century. increasingly talk about the aesthetic side of knowledge, about beauty as a heuristic principle, in relation to theories, laws, concepts. The search for beauty, i.e. the unity and symmetry of the laws of nature is a remarkable feature of modern physics and a number of other natural sciences. A characteristic feature of post-nonclassical science is its dialectization - the widespread use of the dialectical method in various branches of scientific knowledge.

7. A gradual and steady weakening of the requirements for strict standards of scientific discourse - the logical, conceptual component and the strengthening of the role of the non-rational component, but not at the expense of belittling, let alone ignoring the role of reason.

This important feature, clearly manifested in the science of the 20th century, was emphasized by V.I.Vernadsky. The personality relies in its scientific achievements on phenomena that are not covered by logic (however broadly we understand it).

8. Connecting the objective world and the human world, overcoming the gap between the object and the subject.

The development of science in the 20th century - both natural science and social science - convincingly shows that an independent observer who is only able to passively observe and not interfere with the "natural course of events" simply does not exist. It is impossible to isolate a person - the "only observer" whom we are capable of imagining from the surrounding world, to make him independent of his own actions, of the process of acquiring and developing knowledge. That is why many researchers believe that today there is a convergence of problems related to inanimate nature, with issues raised in the field of sociology, psychology, ethics.

9. The introduction of time into all sciences, the ever wider dissemination of the idea of development ("historicization", "dialectization" of science).

In recent years, the idea of the "constructive role of time", its "entry" into all areas and spheres of special scientific knowledge, has been developing especially actively and fruitfully by I. Prigozhiy. He writes: “Time has penetrated not only into biology, geology and social sciences, but also into those two levels from which it was traditionally excluded: macroscopic and cosmic. Not only life, but the Universe as a whole has a history, and this circumstance entails important consequences. " The main one is the need for a transition to a higher form of thinking - dialectics as logic and the theory of knowledge.

10. The growing mathematization of scientific theories and the increasing level of their abstractness and complexity.

This feature of modern science has led to the fact that the work with its new theories, due to the high level of abstractions of concepts introduced into them, has turned into a new and unique type of activity. In this regard, some scientists speak, in particular, about the threat of transformation of theoretical physics into a mathematical theory. Computerization, increasing alternativeness and complexity of science is accompanied by a change in its “empirical component”. The point is that more and more complex, expensive instrumental

systems appear that serve research teams and function similarly to means of industrial production.

11. Striving to build a general scientific picture of the world on the basis of the principles of universal (global) evolutionism, uniting the ideas of the systemic and evolutionary approaches into a single whole.

Global evolutionism: characterizes the interconnection of self-organizing systems of varying degrees of complexity and explains the genesis of new structures; considers social, living and inanimate matter in a dialectical relationship; creates a basis for considering a person as an object of cosmic evolution, a regular and natural stage in the development of our Universe, responsible for the state of the world in which he is "immersed"; is the basis for the synthesis of knowledge in modern, post-non-classical science; serves as the most important principle for the study of new types of objects - self-developing, integral systems that are becoming more and more "human-sized".

12. Formation of a new - "organismic" vision (understanding of nature).

The understanding of nature is increasingly viewed not as a conglomerate of isolated objects and not even as a mechanical system, but as an integral living organism, changes in which can occur within certain limits. Violation of these boundaries leads to a change in the system, to its transition to a qualitatively different state, which can cause irreversible destruction of the integrity of the system.

13. Understanding the world not only as a self-developing integrity, but also as an unstable, unstable, nonequilibrium, chaosogenic, uncertainty. These fundamental characteristics of the universe today come to the fore, which, of course, does not exclude the presence of opposite characteristics in the universe.

Thus, modern science, even in small things, cannot do without probabilities, instabilities and uncertainties. They permeate the entire universe - from the properties of elementary particles to the behavior of man, society and the Universe as a whole. Therefore, today more and more people speak of

uncertainty as an attributive, integral characteristic of being, objective in all its spheres.

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