

SOME FEATURES OF SYNERGETICS IN SCIENTIFIC KNOWLEDGE

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ABSTRACT

The article provides a philosophical analysis of the peculiarities of synergetics in scientific knowledge, its epistemological aspects. In the further development of science and scientific research, it is recommended to make extensive use of its unique features in the scientific knowledge of the future.

Keywords: Globalization, scientific research, scientific knowledge, scientific methods, scientific prediction, consciousness, creativity, synergetics.

INTRODUCTION, LITERATURE REVIEW AND DISCUSSION

It is well known that human activity is always important because it is conscious, goal-oriented. He is required to solve a number of tasks in order to achieve a specific goal. In some cases, pre-existing methods and tools are used to perform these tasks. It is obvious that such a way, method and means are not enough to solve others, it is necessary to take a different approach in their use.

The current era of globalization is characterized by its complex relationships, contradictions, conflicting problems, characterized by the fact that it is constantly updated and the transition to new qualitative changes. This transitional state reflects complex social, economic and cultural processes. Unexpected coincidences in the nature of some regions of the world, non-linear, unstable processes in social development are becoming more acute. In order to know the future of such a complex reality, science, especially modern science, feels the need for scientific approaches with new approaches and opportunities. Such a nonlinear situation requires the study of natural and social processes from the perspective of a synergetic paradigm.

Given the multifaceted nature of the development of society, a thorough study and analysis of each area is a very important issue. Uzbekistan is also an integral part of the world. The processes of globalization, the ongoing environmental, economic and social situation in the world will also affect the development of Uzbekistan. The name of 2020 as the "Year of Science, Enlightenment and Development of the Digital Economy" is an important factor in the correct and conscious understanding of social processes in our society, the real situation of the people in the process of globalization and their problems. Science embodies a new approach to the development of enlightenment and the digital economy, an objective approach to the economic and social problems of the population.

In this regard, at the current stage of development of our country, the Decree of President Shavkat Mirziyoyev dated September 21, 2018 "On the Strategy of Innovative Development of the Republic of Uzbekistan for 2019-2021" is a clear example.

From the above, it is clear that the development of new approaches based on modern achievements of world science, innovative ideas, developments and technologies is a requirement of the times.

Professor MN Abdullaeva also emphasizes that modern changes are complex, changeable, unstable, and recognizes the need for a new synergistic approach in their study. [1] The synergetic methodology emphasizes that it is aimed at reflecting the characteristics of the current changing, unstable period.

Synergetics is the theory of self-control, the study of nonlinear phenomena, self-organization. A scientific direction, a way of thinking, aimed at a new interpretation of the world, the study of complexity, the knowledge of the nature of natural and socio-economic processes. In its formation, G. Xaken, I. the service of Prigogine, I. Stengers, G.A.Nicholis [2] was great. Synergetics emerged in the 1970s as a method of interdisciplinary scientific research that generalized innovation in the sciences, organized itself, and formed an evolutionary process based on nonlinear thinking. It is a scientific direction and way of thinking aimed at understanding the complexity, the nature of natural and socio-economic processes, aimed at a new interpretation of the world [3].

Hacken explains why he calls the new science “synergetics”. First, it examines the interaction of many subsystems that create structure and related activity at the “macroscopic” level. Second, it involves various disciplines in finding the general principles of self-organization of systems. G. Hacken notes that in the context of the crisis in narrow specialized areas of knowledge, information should be condensed into a small number of laws, concepts or ideas, and synergetics can be seen as one such attempt. According to the scientist, different natural systems have the same principles of self-organization, so it is necessary to talk about finding common determinants of natural and social processes. Synergetics is focused on finding these common determinants [4].

V.I. Arshinov, V.G. Although the Budanovs in their research have influenced the deeper penetration of the doctrine of global evolution into modern natural science, they acknowledge that it is based on the synthesis of different sciences [5].

Speaking about the epistemological possibilities of synergetics, G. Hacken said, “Synergetics integrates the components of a self-organizing system, it allows not only to know the general laws and principles underlying the processes of self-organization, but also to identify ways to solve this or that problem. He also acknowledges that synergetics should be viewed as the science of the third millennium”[6].

Analyzing the methodological possibilities of synergetics in the book “Synergetics”, a team of authors led by B.O. Turaev stated: “Synergetics is a science that determines the simplicity of complexity, the complexity of simplicity. One of the main tasks of synergetics is to determine the simplicity of complexity, the order of chaos, the necessity of chance, the future of the past”[7].

In our view, we need to see synergetics as a paradigm that introduces a new approach to the problems of modern science. After all, synergetics is a method of scientific cognition that arises not only in the special sciences, but also against the need to reconsider the problems of natural and social processes. Due to synergetics, new ideas have entered the perceptions of the world, including the notion of chaos - that is, total chaos is used only in a negative sense. Synergetics,

on the other hand, proves that chaos can be a constructive force and a means of regulation under certain conditions. Synergetics means that development is not linear, but linear and multi-patterned i.e. multi-model. The development of society is also multifaceted, and the evolutionary development we have chosen has many possibilities.

Indeed, synergetics, along with explaining the principles of the organization of the whole, creates a scientific and philosophical basis for the development of complex methods of managing social development, the organization of the integration of different sectors of society on the basis of a common goal.

It is especially difficult to know the future at this stage because the modern process of scientific cognition is characterized by multidimensionality, multifacetedness, and a combination of objective and subjective factors. That is, it is difficult to predict qualitative changes in the development of nonlinear cognition based on their knowledge of the laws. As a result of such a cognitive process, the accuracy and reliability of foresight will depend on how deeply and comprehensively the previous and current state of the object has been studied, as well as how well the laws of its change have been studied.

The accuracy and reliability of a prediction depends in many ways on the theory and factors (variable signs) that underlie it. In addition, at the stage of modern scientific knowledge, prediction is required to be made depending on the accuracy and reliability of the knowledge that makes up the information base. The accuracy of the predictions will depend on who makes the prediction, i.e. the predictor. In this, in our view, the errors of the prophet can be both unintelligible and conscious. In the latter case, the effectiveness of scientific prediction is determined not only by its accuracy, but also by its objectivity and conformity to the intended purpose.

Prediction, as a form of cognition, has always been the subject of analysis and the expression of people's practical activities, and remains so. Hence, humanity's need for reasonably high knowledge in determining its future correctly is increasing. The synergetic possibilities of predicting the future also depend on the time factor. In this sense, if we interpret the universe in terms of scientific prophecy, we will be able to understand why man exists, how important time is in his perception of his present life and future. This is why Heidegger seeks to argue that time is a crucial feature of human existence. Human life is not just a phenomenon of change, but it is also characterized by the fact that it always includes processes that express different beings. Time is not just a continuum, but a quest for the future that consists of a series of changes.

Undoubtedly, the functional role and importance of the synergetic method in predicting the future of the universe will be demonstrated. We emphasize here the need for a philosophical and methodological study of the synergetic paradigm, not only its place in everyday predictions, but also its relationship with complex scientific predictions. Based on this problem, it is important to determine the role of synergetics in scientific forecasting.

In fact, predictions are assumptions based on events that are difficult to determine the future state of natural and social phenomena or the unknown nature of the present. K. Tulenova's description of the prophecy shows the full essence of prophecy: "Scientific prophecy is a conclusion based on unknown phenomena of the past and present (objects, processes, laws, evidence, etc.), as well as popular theories, laws, hypotheses. are assumptions about future events" [8].

Scientific prediction differs from law, theory, hypotheses in that Synergetics allows for a comprehensive study of it. The model of transcendental vision, the attitude to the transcendental world, manifests itself as an attitude to another world. It is the world of things, images, sounds that motivates it to create creative innovation. They become a reality under the influence of human creative activity [9]. In this, prophecy emerges as thinking about the future based on their own experiences. The present period, the further development of all aspects of the life of society is impossible without scientific considerations and without foreknowledge based on scientific predictions of the future. It is a necessity of the existence of science to know in advance the continuation of events, to consider them, to discover the interrelationships of events, and they serve for practical activity. After all, the main task of scientific knowledge is to become the main tool of man in changing the natural and social environment.

Mathematical methods and models available in philosophy and science create many possibilities for predicting certain numbers in describing the processes of organization-distribution of structures of different properties. In the quantitative and geometric description of the development of systems are used apparatus of differential equations with special derivatives and sections of differential equations such as qualitative theory, its theory of bifurcations and theory of catastrophes. They reveal a picture of the movement of the system in a staged environment and the leading events of that scene - (stable or unstable) if, focus, node. In my opinion, synergetics as a paradigm of nonlinear thinking forms the conceptual theoretical basis of post-classical scientific thinking [10]. According to O. Fayzullaev, Doctor of Philosophy, synergetics is a scientific field that studies the processes of self-organization in open, balanced systems, nonlinear phenomena that lead to these processes, their properties and laws. At the same time, synergetics also serves as a theoretical-methodological approach and way of thinking that allows to synthesize knowledge, to bring together relatively distant scientific and cultural-spiritual values, to understand their common or similar qualities [11].

Predicting the long term is one of the important problems of synergetics. For example, in 1972, a group of scientists led by Dr. Medous, a member of the Club of Rome, published a report entitled *The Growth Frontier*, based on the results of a study by the Mankind Severe Project, which caused a great deal of controversy. According to the conclusions of this report, the fate of the world, the threats and dangers in the near future are of concern to everyone, to all mankind. Because the world's population has now exceeded 6.5 billion, and that figure will reach 10 billion by 2050. It is doubtful that the available material resources will be able to provide for such a large population. A. Pechchei, the founder of the Club of Rome, said that "no sane person believes that our Motherland can withstand any rate of growth, that it can meet all the needs of the people" [12] American scientists reject all the usual views on world development, its stability, the purpose and prospects of human life. It is clear from this that many aspects of instability remain unknown to science. The difficulty of predicting earthquakes in the full sense of the word as a human being is proof of the fact that there are natural phenomena in nature, and that some problems remain in science related to its transition to consciousness. At the same time, the problems associated with the establishment of a sustainable ecological society in the world are largely due to the fact that the unstable relationship between man and nature remains. The main reason for such unstable relationships is the problems inherent in the processes of self-organization and management at the normative level in human approaches to the environment.

In short, the scientific novelty of the synergetic approach to existence is mainly as follows: 1. Chaos leads not only to destruction but also to creativity, development takes place through imbalance (chaos). 2. The idea of the systemic nature of the evolution of complex systems put

forward in classical science is an exception, not a rule; on the contrary, most systems have a nonlinear nature, i.e., there are not always one, but many possibilities for the evolution of complex systems. 3. Development occurs through the random selection of one of several possibilities of evolution at the point of bifurcation.

So, from the point of view of synergetic prediction, coincidence is not an unpleasant situation, but one of the important aspects that go into the mechanism of evolution. At the same time, perhaps the current path in which evolution is taking place may not be better than the path that was chosen by chance. Indeed, global evolution takes place through the testing of various paths, and sometimes even manifests itself as the fulfillment of a prophecy.

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