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ON SYNERGETICS AS AN INTERDISCIPLINARY AREA OF SCIENTIFIC RESEARCH

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Abstract
The article deals with synergetics as an independent direction and its connection with other sciences; integrative or synthetic value of synergetics; the role of research carried out in this area of scientific activity/

Key words and phrases: synergetics, science, research, language, system, structure, interdisciplinarity

Introduction

Synergetics in greek means joint action. Synergetics is an interdisciplinary branch of scientific research, which emerged in the early 70s of the XX century, studying the patterns and principles underlying the processes of self-organization in systems of a very different nature: physical, chemical, biological, technical, social and others.

Synergetics is an independent science, and its connection with other sciences is that it uses their paradigms, concepts, approaches to research, adding its own vision of self-organization. A number of well-known linguosynergetic developments are made in the mainstream of quantitative linguistics - a set of approaches aimed at creating quantitative descriptions of natural and artificial languages, statistical calculations of the frequency of language phenomena in texts.

Today, at the stage of cognition of the material world, the self-organization paradigm, which serves as the natural-scientific basis of the philosophical category of development, plays a major role. This means that the necessary condition for the development of various structures is the process of self-organization, which leads to the emergence of qualitatively new material structures. That is why every year there is a growing interest in such an interdisciplinary direction as "synergetics": new monographs, textbooks are published, many articles are published, national and international conferences are held. Undoubtedly, this is an indicator of the positive development of young scientific directions.

The founder of synergetics as a science is Professor Hermann Haken, who defined synergetics as a discipline that studies complex systems consisting of a large number of subsystems that interact with each other. The question immediately arises: what are these very complex systems, what are the criteria for their identification? The answer is obvious: these systems may be of a very different nature and, accordingly, may be studied by different sciences: physics, chemistry, biology, mathematics, economics, sociology, linguistics, etc.

This means that synergetics has a special status - the status of interdisciplinarity, which involves the identification and subsequent description of the general patterns of development of these structures (common and universal mechanisms of self-organization) in an international language, the language of "metascience". Thus, synergetics appears to us as a kind of bridge between different fields of knowledge, establishing a kind of isomorphism of two phenomena studied by specific means of two different sciences, which have a common model. Synergetics solves a hitherto unsolvable problem of establishing a "living" dialogue between different branches of knowledge, models and concepts of individual scientific disciplines, which allows synergetics to make the wealth of one field of science accessible to the understanding of representatives of another, perhaps very distant from it, field of science and transfer the results of one science on seemingly foreign soil. But this does not mean that synergetics is a frontier science and thus on a par with disciplines such as physical chemistry or mathematical biology. This only shows that it is called upon to play the role of a kind of metascience that investigates the general nature of those regularities and dependencies that private sciences have considered their own domain.

Due to its interdisciplinarity, synergetics leads to a new constructive dialogue between specialists in different scientific disciplines, thus making confident steps toward the synthesis of the natural sciences and the humanities. But interdisciplinarity is by no means the only virtue of synergetics. In addition to this characteristic, it has the properties of "transdisciplinarity" and "multidisciplinarity. The first characterizes research that goes "across" and "through" various disciplines and goes "beyond" specific disciplines, i.e., research that goes to a higher level, independent of one or another specific discipline. The second property means that synergetics investigates a subject that is being studied simultaneously by several scientific disciplines. Among other things, synergetics is the "golden mean" of the private sciences, which examine the functioning of various systems on the basis of a detailed study of their individual parts and disciplines, in whose field of view fall the structures as a single whole mechanism. A. Danilov points out this indisputable circumstance in his work: "In synergetics the consideration occurs at an intermediate, mesoscopic level, and macroscopic manifestations of processes occurring at the microscopic level arise "by themselves", due to self-organization, without a guiding and directing "hand" acting from outside the system. Thus, summarizing the earlier material, we can safely assert that synergetics has an integrative or synthetic value.

Synergetics, whatever its future, has already increased our knowledge of the world and even our ignorance. After all, it makes sense to distinguish not only between different types of knowledge, but also between different types of ignorance. It is one thing when we don't know that we don't know something, and quite another when we know that we don't know something. The first does not bother us, the individual and society take such ignorance for granted, while the second type of ignorance mobilizes researchers to search for the causes of what we do not know.

So, the process of moving thought to truth is not as simple as we recently thought, thinking that research is the essence of moving from ignorance through hypothesis to knowledge. In reality, the movement to truth involves the awareness of not knowing something, after which the ignorance becomes the object of study. Therefore, it is safe to say that the revolutionary breakthrough that synergetics made at the initial stage of formation of its methodological base, will allow it to achieve high results in the field of knowledge of the surrounding world (mainly, this is the sphere of information technology) in the near future, and the fruits of its research findings will be in demand by society.

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