

# Sinergetics as a New Methodological Direction in Modern Times

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## Abstract

This paper investigates the major points of the sinergetics as a new methodological direction in modern times. On this case, research has been conducted in the different research points. Therefore, points of the research were concluded with both methodological and theoretical basis.

**Keywords:** Synergy, new methods, methodology, directions, modern times

## INTRODUCTION

Synergetics is recognized as the newest methodological trend in modern science and we see that it occupies a special place in all disciplines. Indeed, it is advisable to rely on the synergetic approach in the scientific justification of the phenomenon in the world.

Synergetics (Greek synergetics-co-operation) is a scientific orientation, way of thinking about systems of self-organization, self-management, study of adverse events, new interpretation of the world, the nature of complex natural and socio-economic processes.

As the synergy combines the components of the self-organizing system, it allows not only the general laws and principles that underlie the processes of self-organization, but also the ways in which a particular problem can be solved. Synergy is also seen as a "third millennium science."

Synergetics is a more general science than physics, biology and sociology. But dialectics is more general in philosophy than in synergy. Synergetics can never reach the level of

philosophy. Because self-organization, which is the main object of synergetics, is subordinate to the dialectic law, the law of contradiction, and on the other, it does not deal with theories of worldviews, worldviews, objects such as synergetics, philosophy. Indeed, such contradictions as matter-consciousness, materiality-spirituality, good-bad, old-new, progress-regression, denial, quantity-quality, are not synergistic but are dialectical.

Synergetics enables the discovery of a number of fundamental features of development. It shows that: 1) the role of fluctuations in the development process is decisive at the close to the point of quality jump, which increases during the jump and shows about it, At this point, a "choice" of a specific development option from the most likely will occur; 3) As a result of this bifurcated nature of development, there is an irreversible nature of development; 4) the development process is generally associated with the development of imbalanced systems and unbalanced phase transitions, and therefore includes the formation of vibrations, spatial structures and disorders; 5) the

development process includes many other phenomena that have not been covered before, such as coherence, turbulence, dynamic disorder, dynamics of dissipative and autoclave structures, broad spontaneous fluctuations; 6) In the course of development, there is a specificity of determinations and deterministic laws prevail between bifurcation points and probable laws at bifurcation points; 7) there is a limit to the stability of any system, which can be reached through the appropriate balancing effects, then elements of regeneration and new systems are formed and the process is inexhaustible; 8) There is a close relationship between the macro and micro levels of the development process.

### **Main part**

Synergetics as a science is a scientific direction that examines the processes of self-organization in open, unbalanced systems, the phenomena, their properties and regularities that lead to these processes. At the same time, synergistic functions as a theoretical and methodological approach and way of thinking, allowing the synthesis of knowledge, the enhancement of scientific and cultural-spiritual values that are far from each other, and the understanding of common or similar characteristics.

Synergetics provides the scientific justification for the rapid transition of society to the point of quality change, the emergence of various options and the "choice" in the jump. Movement of imbalanced systems during development is the basis for various disorders and the formation of new systems.

Synergetics is one of the most significant and effective results of collaboration and integration in the postclassical disciplines of the modern era. As a result of these activities, he was the successor of methods used in the sciences such as cybernetics, systems theory, and enriched them

with his scientific and ontological ideas and laws on "formation" and "self-organization."

Synergetics has been shaped by the intersection of philosophical reflection culture with special knowledge that has its subject as a non-linear modeling of reality and has become a serious field in networks. Accordingly, since it has become a branch in the wider industries, any evolutionary processes will now naturally fall into the level of synergies.

Synergetics - the theory of self-organization - emerged in the early 1970's as a doctrine that comprehensively analyzes the universal evolutionary process through the use of nonlinear thinking as a novel approach to the development of the universe.

"I called the new science" synergy, "writes G. Haken," not only the study of the interaction of many elements of the system, but the need for cooperation of many different disciplines to find common principles governing self-organization. " In addition, G. Haken explains why the new science is called "synergy". First, it "investigates the interaction of many subsystems that make up the macroscopic level of structure and related activities." Second, it involves a variety of disciplines to find common principles of self-organization of systems. Haken said that due to the crisis in the narrowly specialized fields of knowledge, information should be concentrated to a small number of laws, concepts or ideas, and synergy can be seen as one of those efforts. G. Haken said that different systems have the same principles of self-organization, so it is necessary to talk about finding common determinants of natural and social processes. Synergetics aims to find exactly these common determinants.

According to the synergetic approach, such dynamic objects are created, interacted, and, finally, reconstructed, creating more dynamic objects that are more complex in the information sense than the important elements they generate.

appears. This is why synergies are noted to have a system and its constituents, mainly dynamic structures. Also, according to the synergistic approach, the orientation of the processes of self-organization is determined by the individual and collective manifestation of the internal features of the object, as well as by the effects of the system being sunk or surrounding.

Dialectically, self-organization processes occur in parallel with other processes in the environment, especially in the opposite direction, and may overlap or collapse in some aspects of the system's existence. At the same time, the whole system is susceptible to stability, evolution or degradation and fragmentation or even extinction. Thus, we were convinced that the structure that emerged as a result of the initial synergistic analysis could change, disintegrate, and disappear on its own. It follows that the concept of self-organization of synergetics is closely linked to the notion of dissipative structures. After all, the essence of dissipation is that the open system regularly exchanges energy with the external environment, thus maintaining its stability. However, in this process, its entropy should not have been able to increase and develop due to dynamic movement, but after the exchange of energy, it dissolves into the external environment, and the entropy remains low due to the constant exchange of matter, energy, and information. It can be seen from this that the unbalanced dynamic state in the synergy is reflected by these changes. At the same time, it should be noted that the unbalanced dynamic state of the synergy is reflected by these changes. It should be noted that though the synergetic system is stable, its components remain intact, interconnected, and interconnected. Under these conditions, the system is self-organized.

Synergetics have created laws and laws that allow us to clarify the evolutionary picture of world development. From a philosophical point of view, the synergistic has eroded our knowledge of the

development of the universe from a single dogmatic view. Therefore, there are great opportunities for the formation of different methodological approaches to the development of the world. The synergistic approach to the study of the universe is of particular importance.

Synergetics is a new scientific approach to the self-organization of the universe, the recognition of the existence of time and space in the temporal and temporal order of things and events through the causal links between certain complex systems. It mainly seeks to find the regularity of the direction in such cases as physical, chemical, biological, and nonlinear.

The synergetics are characterized by fundamental words such as spontaneous organization, spatial structure, nonlinearity, open systems. Synergetics explores systems that exchange matter, energy, and information with the external environment. The synergistic picture of the universe is dominated by multivariate and irreversible formation. Being and formation are combined into one concept. Creates time or, in other words, performs a constructive function.

The main theme of synergetics is expressed in the following ideas: degradation and creativity, degradation and evolutionary processes are equal in the universe, and the complexity and confusion in the processes of creation are based on a single algorithm and do not depend on the essence of the systems. Any system cannot be studied as an object of synergy. The presence of a synergetic object must be open, that is, the exchange of matter or energy with the external environment, and that it is far away from the state of imbalance or thermodynamic equilibrium.

According to the synergistic approach, such dynamic objects emerge as a result of self-organization in the universe, as well as interconnectedness and, eventually, re-emergence, which dynamically appear in the information sense from the elements of their environment.

Therefore, synergies are often said to be dynamic structures of the system and its constituents. Also, according to the synergetic approach, the orientation of self-organization processes is determined by the individual and collective manifestation of the internal properties of the object, that is, the effects of the environment surrounding the system.

The development of the problem of self-organization, which is the basis of the new interdisciplinary field of knowledge, has become a new theoretical basis of the methodology of science. Synergetics promotes a view of mechanisms of self-organization in various disciplines. This is because the emergence of a new field of science in the process of self-organization is mainly related to the emergence of new discoveries and inventions. The emergence of a new paradigm also gave rise to a new vision of the further development of post-classical science. This provided an opportunity for further analysis of new areas of science. This is the opportunity for the development of a new branch of science. Therefore, these problems cannot be solved without interdisciplinary research methods.

After all, the development of philosophy and science is characterized by the fact that the new synergetic ideas of scientific thought cover many problems related to the human worldview. In its aim, synergetics identifies common ideas, methods and regularities of self-organization in various fields of science. In this sense, it is our duty to master the ideas of synergetics to rise to a new level of worldview and understanding of reality.

In self-organizing processes these situations are observed, which means that "the system will lose its stability due to strong instability. Parameters that recommend this condition are called critical and jump from this critical state to one of the possible new stable states. This sort of system development path is known as the bifurcation point. It is a matter of chance to go to any of the

possible cases. A large number of fluctuations occur at the bifurcation point, one of which inadvertently brings the system to a new stable state ». Self-organization is a way of maintaining complexity and creating new structures. Systems with such properties are self-organizing systems.

Self-organization is manifested in spontaneous propagation and the establishment of a new stable structure by bringing bifurcation of fluctuations in the system (lot.bifurkus - division). Here, structural change and regeneration signify system evolution. Therefore, self-organization is the basis of system evolution. Fluctuations are random microstructures (deviations from the average position) that lead to bifurcation. Fluctuations, bifurcation and consequent formation of new structures in imbalance systems are the main stages of the evolution of the system itself. Once the microwave fluctuations are crossed, the bifurcation moves to a new dynamic state, which is reflected in the macro-level.

Thus, the whole evolution of an unbalanced system can be viewed as a combination of coincidence and necessity as two distinct processes that complement each other.

The concept of self-organization and the theory of dissipative structures show that it is capable of explaining many evolutionary processes occurring in geological, chemical, biological, environmental, and even socio-cultural systems. Of course, there are many unsolved problems on this path as well. But the synergistic thinking paradigm, which includes the idea of self-organization and the theory of dissipative structures, shows how the emergence and development of "entanglement" (intangible) life is an emerging, emerging force of the universe and its systems. ), without the involvement of the so-called mystical forces.

The instability shows the regularities of vibration that give a new perception of determinism.

In our view, young talented scientist Synergetologist Dilmurod Bozorov says that

synergy is a new paradigm from a philosophical point of view, which includes new scientific ideas on human nature, society, and thinking about self.

The development of synergetics has not only brought new meaning to dialectical thinking, but has also had a positive impact on changing the ideals of positivism, ontology, reductivity, relativism, and postmodernism. Therefore, it is possible to identify integrative research methods for the new description, analysis, classification, observation and interpretation of nature, society, human, spiritual and aesthetic environment, information and technological activities.

The synergetics, by their research and object, show us a new scientific picture of the world. These include instability, inaccuracy, open system, evolutionary integrity, bifurcation tilt, fluctuating change, attractor position, dissipative system state, and more. It turns out that synergetics, through its basic concepts and principles, act as an ontological and gnoseologically important universal law in philosophy. At the same time, synergistic has philosophical methodological implications for the study of things and phenomena in the universe as an open and closed system of interconnected and interconnected systems, which can accumulate elements that form a whole.

### Discussions

Synergetics is not an independent scientific field, it is a new interdisciplinary field of science, with the aim of co-operation of various special disciplines within the field of natural science, as well as the emergence of common laws and common ideas and methods in sociology and even linguistics.

Synergetics as a new scientific approach also arouses the general public's understanding of the emerging principles of self-organization in open systems and the study of collective, cooperative interactions in the process of supporting them.

Recently, we have seen that representatives of various fields of knowledge about synergy carry out their research on a synergistic approach. In addition, synergies have been interpreted by some scholars as being scientific, while others are interpreting interdisciplinary science as a new way of thinking, in terms of a new world view, a new way of thinking.

### Conclusions

Many scholars also suggest that synergy should be replaced by dialectics. In our opinion, synergetics enriches various aspects of dialectics, and is a new approach that helps to elevate philosophical outlook.

In conclusion, we see that synergy is a new methodological method that helps us to enrich our vision of nature, society and human thinking with new meaning and meaning.

### References

- [1] Bozorov D. Synergetics paradigm. T.: Tafakkur 2010.
- [2] Budanov V.G. Synergetic Methodology // Questions of Philosophy. 2006 No. 5.
- [3] Kurdyukov S.P., Knyazova E.N. The basic principles of a synergistic worldview. M., 2004.
- [4] Prigogine I. Philosophy of instability // Questions of philosophy. 1991. No.6.
- [5] Haken G. Synergetics. M., 1986.
- [6] Haken G. Information and self-organization: a microscopic approach to complex systems. M., 2005.