Original Article

Synergetic Paradigm In The Study Of Social Processes

Karima Tulenova[1]*, Eshonova Gulchekhra Numonovna[2], Mamajonova Marvarid Kurbonazarovna[3], Mamayusupov Umid Kurbonovich, Phd[4], Nurtulashev Mansur Zhuraboevich[5]

*[1] Doctor of Science, professor. Department of "Social Sciences" Tashkent State Pedagogical University. Nizami;
[2] PhD, Associate Professor of the Department of Social Sciences, Tashkent State Pedagogical University of the University. Nizami;
[3] Senior Lecturer of the Department of Social Sciences, Tashkent State Pedagogical University named after. Nizami;
[4] Associate Professor of the department of Social Sciences, Tashkent State Pedagogical University. Nizami;
[5] Senior Lecturer of the department of Social Sciences, Tashkent State Pedagogical University. Nizami

***Corresponding Author:-**Karima Tulenova

*Doctor of Science, professor. Department of "Social Sciences" Tashkent State Pedagogical University. Nizami
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Abstract

The article provides a philosophical analysis of the role of the synergetic paradigm in the foresight of social processes. The necessity of taking into account the factor of chance, which is a key factor in development, is revealed. The article notes that in the cognition of any developing system, especially a historical one, the need to include a time parameter in the study is required. The article draws attention to the fact that the social system is an ordered, self-governing integrity of a variety of social relations, the bearer of which is the individual and the social groups in which he is included.

Key words: foresight, forecasting, social system, social processes, self-organization, chance, law, development, system, society, nature, research, objective, subjective, science, matter, future, present, past, integration, reality, prospects, humanity , information, computerization, consciousness, complexity, development, unpredictability, culture, dialectics, qualitative changes, reflection, order, chaos, certainty, determinism, disequilibrium, stability, bifurcation, history, cognition, knowledge, regularity.

Today, forecasting is increasingly taking on a social orientation. Along with further specialization in science, there is a growing desire to integrate knowledge both “from below” /biophysics, geochemistry, etc./, and “from above” /cybernetics, ecology, etc./, such integrating branches of knowledge include social forecasting , because there can be no justified social forecasts without taking into account the prospects for economic, environmental, demographic development, scientific and technological progress and the possibilities for the evolution of culture, the dynamics of international relations. Forecasting the future is an interdisciplinary comprehensive study of the prospects of mankind, which can be fruitful only in the process of integrating humanitarian, natural science and technical knowledge.

As you know, in contrast to nature, where objective natural laws operate that exist independently of human consciousness, in society its laws are manifested through the conscious activity of people pursuing their own goals.

Social reality is a special form of the movement of matter, where objective laws are realized through subjective activity. The carrier of subjective activity is an individual, social groups, labor collectives, society, i.e., which is usually expressed in philosophy in the concept of a subject.

At the same time, it should also be taken into account that subjective activity can be mediated by their consciousness, purpose, needs, etc.

Thus, social reality is simultaneously a unity of objective and subjective moments.

All of the above indicates that social processes are a qualitatively new type of matter movement, associated with the conscious activity of people, the presence of more complex systems than in nature, a greater number of elements forming the system. The social system, social processes have a concrete-event character, expressing the actions of large and small people, individuals, pursuing specific goals.

The social system is an ordered, self-governing integrity of a variety of social relations, the bearer of which is the individual and the social groups in which he is included.

One of the theoretical achievements of the 20th century, noted in the philosophical literature, is the idea of a social system. It is understood as everything related to the systemic characteristics of society as a certain integrity that unites individuals with various connections and relationships. A social system is characterized by openness, a certain degree of coherence of its subsystems and, at the same time, a certain non-equilibrium, which makes it possible to describe its dynamics using nonlinear mathematical models.

The processes taking place in society, the scientific and technological revolution, informatization, computerization, telecommunications, etc. - all these are the problems of the modern stage. From the 70s of the XX century. these processes are often called post-industrial.

The main thing here is the growing importance of information in the life of society. This can mainly be attributed to

Western and Japanese civilization, although certain features of these processes are found in other societies. The realities of the information society, the new threats and dangers that it brings to man and humanity, force us to more and more turn to the knowledge of mechanisms for stabilizing sustainable development, minimizing the possibility of unpredictable processes and phenomena. With all the successes of science, engineering, technology, the main hope is still associated with the person himself, with his ability to know the laws of history and the laws of the development of society. Society is a probabilistic system, during the development of which far from all potential possibilities are realized, and the unpredictability of many events is a general pattern. [1] Thus, society is a systemic formation, a joint life activity of people. Social is the systemic characteristics of society.

The idea of self-organization, unpredictability of development, may find further development in synergetics. Synergetics, as you know, means “joint or cooperative action”, and studies such a joint action of individual parts of any disordered system, as a result of which self-organization occurs.

It should be noted that "synergetics does not oppose dialectics, and dialectics manifests itself both in cybernetics and synergetics." [2]. In the process of developing a social system, it is necessary to represent the boundaries of the application of synergetics, where self-organization is one of the aspects of the development process. Dialectics, on the other hand, describes the process of development, where it is impossible to replace it with synergetics.

I.Prigozhin, I. Stengers, G. Nicolis, O. Toffler, G. Haken and others made a great contribution to the formation and development of synergetics. Prigogine, while studying complex systems, drew attention to a moment in the dynamics of these systems, which reveals the mechanism of their self-organization: matter is not a passive substance, it is characterized by spontaneous activity caused by the instability of non-equilibrium states, into which any system sooner or later comes as a result of interaction with the environment. [3]

Synergetics studies non-equilibrium phase transitions - in general, the creation of order out of chaos. According to the concept of I. Prigogine, in a system exchanging matter, energy and information with the external environment, fluctuations of the deviation of the system characteristics from the values that determine stability gradually accumulate.

This leads to the fact that the system in its development reaches the point of bifurcation / the moment when the development of the system can only be predicted statistically /. When the system reaches the bifurcation point, rigid determinism is unsuitable. Fluctuation pushes to change the nature of the process. Bifurcation is the result of chance. The new state of the system can only be predicted probabilistically [4].

The word "bifurcation" means bifurcation and is used in a broad sense to refer to all kinds of qualitative rearrangements or metamorphoses of various objects when the parameters on which they depend change [5].

Thus, in synergetics, the mechanisms of the emergence of new states, structures and forms in the process of self-organization are studied. Therefore, it relies on the principle of positive feedback. In this case, the changes gradually accumulate and, in the end, lead to the destruction of the old and the emergence of a new system. In general, such complexly organized systems are open and non-equilibrium. “According to I. Prigogine, G. Nicolis and O. Toffler, there are both closed and open systems in the Universe, moreover, closed systems belong to inorganic nature, and open systems belong to biological and social life. The main feature of an open system is the input, output, exchange of matter, energy and information” [6].

“Dissipative structures are open systems far from equilibrium. Small fluctuations, small changes, random influences lead to bifurcations, i.e. sudden changes in the state of the system. Which path the system chooses depends largely on random factors, and the behavior of the system cannot be predicted with certainty” [7]. This concept is also characterized by the fact that “determinism, which seems to be an inevitable consequence of the rationalistic model of dynamics, is now reduced to a property that manifests itself only in individual cases” [8]. The understanding of randomness changes, the factor of its influence becomes decisive in further development. It is possible to take into account all accidents and predict their action only with a certain degree of certainty [9]. Synergetic methodology helps to more accurately understand what is possible and what is not possible in nature and in general in the world around us. The synergetic paradigm provides practical recommendations, general guidelines for forecasting and modeling processes in complex social systems. Synergetics shows that for complex systems there are several alternative ways of development and reveals the mechanism for choosing these alternatives.

A characteristic feature of the biology of the twentieth century. is the development of genetics. Genetics was based on the laws of heredity discovered by G. Mendel during a series of experiments on crossing different varieties of peas. G. Mendel proposed the gamete frequency hypothesis, which establishes that the splitting law is the result of a random combination of gametes carrying different genes. With the random nature of the connection of gametes, the overall result turns out to be natural. Here you can see a statistical regularity (the law of splitting), determined by a large number of equiprobable meetings of gametes. Thus, the action of chance characterizes the probabilistic nature of the development of the foresight process in complex systems [10].

Thus, randomness is a key factor in development. Speaking of foresight, the factor of chance becomes key, and this is perhaps the difference between the modern approach and the former one, where in the process of foresight everything was reduced to determinism. In modern conditions, perhaps, chance can take the place of necessity. On the basis of non-equilibrium thermodynamics, two conclusions were made, the first of them is the possibility and necessity of the emergence from chaotic systemic matter, which develops according to the laws of reproduction. The second is that the evolution of systems contains "both deterministic and stochastic elements", representing a "mixture of necessity and

chance" [11].

The instability of the system at a certain time interval of its evolution is considered an intermediate state in the transition to a new self-organized system.

I. Prigogine considers all processes to be unstable: "... there are no limits to structural stability. Instabilities can arise in any system, it is only necessary to introduce suitable perturbations. Consequently, the story of structural stability does not and cannot have an end" [12].

In fact, S. K. Betyaev believes, "in forecasting, one should distinguish between stability with respect to small disturbances and stability with respect to large disturbances. The former are uncontrollable due to the fact that their amplitude is small; the latter are controllable and should be taken into account by the mathematical model of the forecast" [13].

Thus, a forecast is not yet a reality, but rather a tendency that warns of danger, of the need to control the process, although this control is not always effective. G. Jung noted: "... we know that the wisdom that could make us able to betray our lives in a predetermined direction is possible only on short stretches of the path" [14].

Thus, development is not unilinear, it is carried out in the real world, and it can be influenced by both internal causes and external circumstances. Randomness determines the time and form of manifestation of events, reflecting the factor of development ambiguity, which acts as a whole range of possibilities and options for implementing patterns. Synergetics proceeds from the fact that, under certain conditions, chance can determine the general direction of the further development of a social system.

Representatives of emergent evolution - K.L. Morgan, A. Whitehead, Teilhard de Chardin believed that all changes occurring in nature can be reduced to changes of two kinds: some results are predictable and mathematically computable, others are emergent, that is, these changes are unforeseen, unpredictable emergent - an English word meaning "appearance, unexpected, unanticipated appearance." From this it is concluded that the emergence of a new level of being is associated with a qualitative leap. Emergent evolutionism has played a well-known role in the formation of such general scientific areas as general systems theory and cybernetics [15].

As you know, complex systems consist of a large number of variables and, therefore, a large number between them, and this presents a certain difficulty in deriving the patterns of functioning of a given object. Difficulties in studying these systems are also related to the fact that "the more complex the system, the more so-called emergent properties it has, i.e. properties that its parts do not have and which are a consequence of the effect of the integrity of the system" [16].

When analyzing the qualitative features of a social system, it should be taken into account that society is not only a complexly organized, but also a self-developing system.

Self-organization is an obligatory sign (foundation) of any objectively necessary, naturally occurring social system, the natural-historical state of any historically real society. A self-organizing system - in the ideal sense - is a system that ensures development (self-realization) through the successive formation of the basic elements inherent in this system. Without additional influence from the outside, those "bearing" fundamental properties that form its qualities should organically manifest themselves. Such a system exists and is strengthened by its internal potentialities. Its structure and the ratio of parts (subsystems) are dynamic, but internally balanced. In relation to other similar systems and systems of a more general order, it is autonomous and stable.

The principle of self-organization, that is, the principle of natural-historical development, real social dialectics presupposes the obligatory and complete interaction of all elements of society in their movement, change, development. [17]

The object of cognitive reflection is a developing system that defines the features of cognition as a process that fixes the development of society, as well as a change in practical activity itself.

Reflection does not simply reproduce a moment, a stage in the existence of an external object, but expresses it in integrity, dynamics. A holistic reflection of an object is not reduced only to the reproduction of simultaneously existing components of its structure. The integrity of the system, for example, in a particular socio-economic system is manifested in the fact that it is a process deployed at a certain time interval, it has its own present, as well as past and future.

In this sense, integrity represents the internal within a historically defined framework, the temporal unity of all the main stages of the development of an object - the present, past and future. Therefore, in the cognition of any developing system, especially a historical one, it is necessary to include a time parameter in the study.

Thus, the image of the present is not reduced only to the reproduction of the current stage of development of the object, it includes knowledge of the past and future, although the leading role in the image is played by the reflection of the

current state of the object, past and future, occupying, as it were, a subordinate position, however, also ensure the implementation of the main function of knowledge. Without correlation with the past and future, penetration into the essence of the present is impossible, knowledge in this case will also be superficial, the real properties, functions of the object under study, its role in the natural historical process are not revealed.

Knowledge of the past is not an end in itself, but a means of explaining the present, reflecting the past, sheds light on the present. This, in essence, explains the great interest that is shown in the study of the history of the peoples of Central Asia, in particular, the era of Timur and the Timurids, the organization of a center for creating a new history of Uzbekistan and other measures taken in the Republic of Uzbekistan.

Thus, the possibility of knowing the past is determined in its basis by the presence of an internal connection between the present and the past. The present, being a continuation of the past, develops many features inherent in it, makes them mature. Therefore, proceeding from the present, which, as a rule, represents a more developed phenomenon, it is easier to penetrate into the secret of its past, history.

In this regard, it seems to us, the thoughts of the famous historian-philosopher R. J. Collingwood are very fruitful. Criticizing those who deny the connection between the present and the past, he wrote: "'If the task of history is to tell people about the past, and this past itself is understood as a dead past, then history can help a person in his activity very little. But if its task is to tell people about the present insofar as the past, its obvious subject, is hidden in the present and is a part of it that is not immediately noticeable to the untrained eye, then history is in the closest connection with practical life" [18].

Cognition of the future is the most complex process, since its contours are unclear, since it does not yet exist. But we must not forget that the future, despite its immediate absence in the life of society, is a temporary form of objective reality. In other words, the future is a form of becoming reality. In the present, the future exists in the form of prerequisites - opportunities, trends, development, in which the contours of the emerging new are outlined. Of course, since the object of foresight contains various development possibilities, the future is not unambiguously predetermined by the present.

Cognition of the future, foresight is a reflection of the becoming object. One of the distinguishing features of this form is the anticipatory function of the image that arises in a person, since knowledge of the present includes a reflection of the development possibilities of the object, its most important tendencies. The anticipatory function of the image is thus based on a solid foundation of relations existing at a given moment in time, as well as knowledge about them. Separation from the present, the inability to find the current patterns that form development trends do not allow looking into the future [19].

And vice versa, only with a thorough analysis of modernity, its structure of possibilities, the contours of the future are revealed, its scientific picture is formed. Thus, the knowledge of the future is a reflection of the object in its development, the formation of new forms of being. Its possibility is provided by the analysis of modernity. The present enters internally into the knowledge of the future. It should also be taken into account that in the knowledge of the future, not only the present, but also an appeal to the past is of great importance. Both social and natural tendencies, regularities that are realized in a certain time interval of development, can be known by referring not only to the present and future, but also to the past.

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