



## THE NONLINEAR NATURE OF SOCIAL PROCESSES: A HISTORICAL AND PHILOSOPHICAL ANALYSIS

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**Abstract:** Understanding the nature of social processes has become a pressing issue in philosophy and the social sciences. Traditional views often interpret social development as a linear and lawful process. However, starting in the second half of the 20th century, the theory of nonlinearity and methods of synergetics developed in natural science began to be applied in the social sciences, which allowed for a new understanding of the nature of social processes.

The article reveals a philosophical analysis of the nonlinear nature of social processes and its historical manifestations, as well as the methodological significance of this problem.

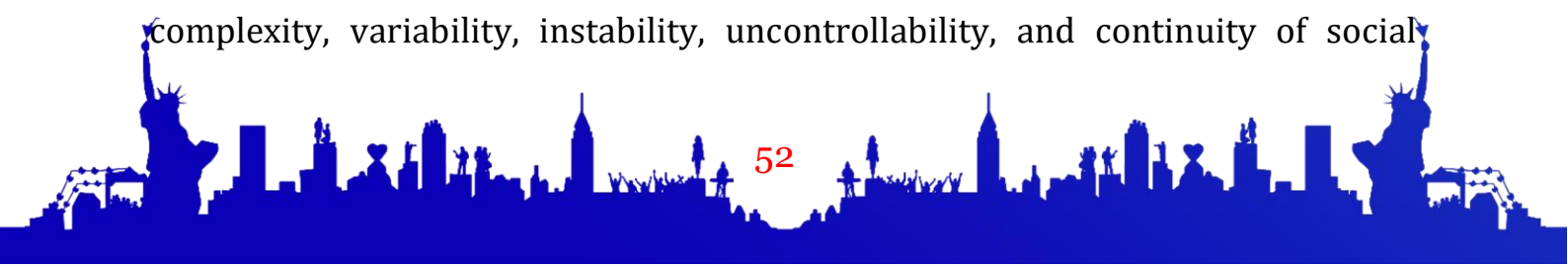
**Keywords:** nonlinearity of social processes, socio-historical analysis, social instability, social order, synergetics.

The issue of understanding the nature of social processes has always been regarded as one of the central topics in philosophy and the social sciences. In traditional theories, historical development has often been interpreted as a linear and consistent process. However, since the second half of the 20th century, the theory of nonlinearity and the methods of synergetics, which had been developed in the natural sciences, have also been applied to the social sciences. [1]. This, in turn, made it possible to perceive the nature of social processes in a new way.

The present article provides a philosophical analysis of the nonlinear nature of social processes and their historical manifestations, as well as reveals the methodological significance of this issue.

The idea of nonlinearity first emerged in ancient Babylon and ancient India, and later developed in Central Asia with the discovery of quadratic equations and the development of methods for solving them by the mathematician Al-Khorazmi.

In the history of philosophy, although the concept of nonlinearity itself was not frequently used in relation to social processes, ideas concerning the complexity, variability, instability, uncontrollability, and continuity of social





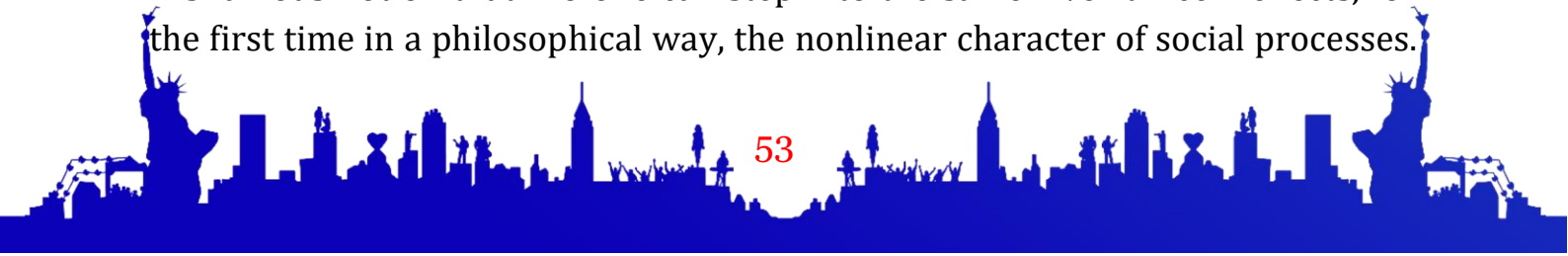
existence were put forward. These issues were first explored in the philosophical teachings of ancient India, China, and Central Asia.

In the Avesta, the philosophical dualism reflected in the idea of the struggle between dichotomic forces—Ahriman and Ahura Mazda—provides the basis for notions about the constant change, contradictions, and nonlinear nature of social processes. Any stability within society is the result of a temporary balance. In the Gathas, human beings are granted the freedom to choose between falsehood (Druj) and truth (Asha). This choice is a continuous process that imparts a nonlinear, dynamic, and rapidly changing character to social processes. The struggle between dualistic forces, the dynamics of human choice, and the cyclical nature of time in the philosophy of the Avesta demonstrate the nonlinear and complex nature of social processes. These ideas serve as a philosophical foundation for modern systemic analyses and synergetic models.

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Eastern philosophers—such as Ibn Khaldun, Al-Ghazali, and Al-Farabi—deeply analyzed the changing, contradictory, and complex nature of social processes. They understood society not as a linear and stable state, but as a system that changes under the influence of waves, instability, spatial, and spiritual factors. For example, Al-Ghazali describes the human soul as unstable and contradictory. In his view, since the souls of individuals that make up society are in constant change, social order is also prone to continuous unstable (nonlinear) transformation. Ibn Khaldun, on the other hand, defines historical and social processes as cyclical, repeating in the form of the strengthening of social unity, the development of the state, decline, and eventual collapse—all presented as a nonlinear dynamic model. Al-Farabi developed the theory of the ideal society. However, he also emphasized that, due to changes in real societies and the varying levels of human perfection, social processes tend to develop in unstable and uncertain ways. According to Al-Farabi, only an ideal leader and knowledgeable individuals are capable of balancing these processes. In his concept lies the idea of social processes striving from nonlinearity toward linearity and stability.

In Greek philosophy, this idea can be found in the teachings of Heraclitus. His famous notion that “no one can step into the same river twice” reflects, for the first time in a philosophical way, the nonlinear character of social processes.





According to him, society is in constant motion and change, and this process cannot be expressed in a linear form. In other words, social reality is continuously being reshaped.

The eminent classical philosopher Hegel describes social change as a dialectical process: any given state (thesis) comes into conflict with its opposing state (antithesis), and this confrontation produces a new quality (synthesis). This process is not simple or linear, like pressing a button, but rather represents nonlinear development through contradictions.

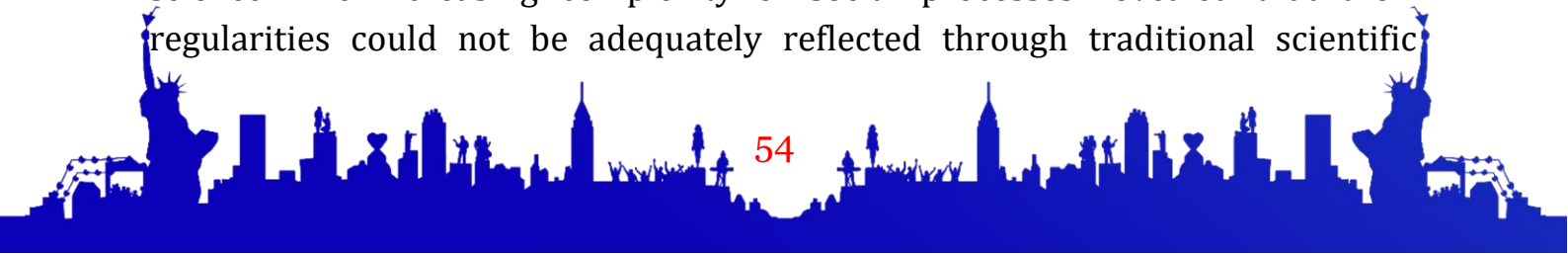
F. Nietzsche opposed understanding society in a logical and linear manner. He viewed history as a process shaped by irrational forces and the voluntary actions of humankind. This approach laid the foundation for perceiving historical and social events as unpredictable, unstable, and continuously recurring processes.

Michel Foucault describes social processes as uncertain, structureless, and nonlinear phenomena shaped by regimes of knowledge and power relations. His concept of the “epistemic break” points to the idea that historical processes do not unfold in a straight line but rather through unpredictable “ruptures” and “crises.”

Heidegger emphasizes that human existence (Dasein) can only be understood in its present state, within contextual and contemporary relations. According to this approach, social processes do not develop according to a predetermined scenario; rather, they arise solely through human experience in real time—this constitutes the foundation of the nonlinear model.

Throughout the history of philosophy, many thinkers have advanced the view that social processes develop not linearly, but in circular, contradictory, irrational, and uncertain forms. Contemporary approaches such as systems theory and synergetics rely precisely on these philosophical foundations to create modern methods of analysis. In particular, 20th-century philosophy examined the nonlinear characteristics of phenomena and events in the world on the basis of physical, chemical, and mathematical models. For example, foreign scholars such as H.Haken, I.Prigogine, I.Nicolis, R.Thom, V.Arnold, W.Ashby, M.Eigen, E.Laszlo, K.Mainzer, B.Mandelbrot, and others have conducted research in this field.

At the end of the 20th century and the beginning of the 21st, it was recognized that fundamental changes had taken place in the methodology of science. The increasing complexity of social processes revealed that their regularities could not be adequately reflected through traditional scientific





methodology. This, in turn, gave rise to the necessity of developing alternative methods for studying the complexity of social processes.

In contemporary epistemology and the methodology of science, paradigms such as complex dissipative systems (I.Prigogine), complex self-organizing systems (H.Haken), “complex-systems thinking,” the “science of complexity” (K. Mainzer), and the “complexity paradigm” (E.Morin) have been developed.[2] .

Among the scholars of the CIS countries who have studied this issue, we can mention L.Klimontovich, V.I.Moiseev, S.P.Kurdyumov, I.A.Dobronravova, E.N.Knyazeva, G.G.Malinetsky, Yu.M.Romanovsky, A.A.Samarsky, B.P.Bezruchko, A.A.Koronovsky, D.I.Trubetskov, K.M.Alieva, and others. In their works, the physical, chemical, ontological, gnoseological, and socio-philosophical aspects of nonlinearity have been explored.

For example, the significance of conceptual notions such as complexity, self-organization, nonlinearity, bifurcation, spontaneity, chance, and chaos in scientific knowledge has been emphasized, while the concepts of nonlinearity and “nonlinear science” have been studied in the scientific works of A.Poincare, L.I.Mandelstam, A.A.Andronov, and N.G.Basov.

I. Dobronravova focused on nonlinear thinking, E.Knyazeva developed the idea of innovative complexity in the context of social processes, and E.Bransky paid attention to the aspects of society as a nonlinear system.

Among local scholars, the scientific activities of A.Fayzullaev, M.N.Abdullaeva, B.Turaev, E.Izzetova, G.Ghaffarova, M.Niyazimbetov, D.Bazarov, G.Jalalova, A.Orazbaev, and others have reflected these ideas. In particular, M. N. Abdullaeva has studied the synergetic aspects of social processes, national ideology, and modernization processes, while M.Q.Niyazimbetov has researched the ontological and gnoseological aspects of the nonlinear, uncertain, and fractal characteristics of social existence. For example, M.Niyazimbetov emphasizes: “The theory of nonlinear dynamics regards the development of all social systems as strictly determined and considers describing them through linear laws as an overly simplified model of complex social systems. In the dynamics of complex systems, uncertainty, unpredictability, chaotic behavior, instability, and asymmetries are regarded as their integral attributes.” [3]

The historical-philosophical analysis of the nonlinear nature of social processes shows that, although the idea of nonlinearity was not directly applied in the philosophical understanding of society, its main attributes were revealed. History demonstrates that society does not develop in a stable state but rather through turning points, crises, and processes of reformation. Therefore, in





comprehending social processes, the theory of nonlinearity and synergetic approaches possess not only theoretical but also practical significance

**References:**

1. Пригожин И., Стенгерс И. Порядок из хаоса. Москва: Прогресс, 1986.
2. Майнцер К. Сложность и самоорганизация // Синергетическая парадигма. -М.: Прогресс-Традиция, 2000.
3. Ниязимбетов М.Қ. Мураккаб тизимларни моделлаштиришнинг замонавий парадигмалари. // фалс.фан.докт. илмий дараж.олиш учун ёзилган автореферат. Тошкент, 2019.

