

WORLD POLITICS: A NONLINEAR ANALYSIS

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Annotation: The article describes world politics through the method of non-linear analysis, discusses the advantages and disadvantages of this research method.

Key words: world politics, system, nonlinear dynamics, synergetic, linear extrapolation, nonlinear analysis, bifurcation.

МИРОВАЯ ПОЛИТИКА: НЕЛИНЕЙНЫЙ АНАЛИЗ

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Аннотация: В статье описывается мировая политика через метод нелинейного анализа, обсуждаются преимущества и недостатки этого метода исследования.

Ключевые слова: мировая политика, система, нелинейная динамика, синергетика, линейная экстраполяция, нелинейный анализ, бифуркация.

World players are increasingly actively using methods of non-linear influence on processes in politics and economics, which follows from the chaotic, unstable situation in the world.

The major events clearly demonstrated large-scale changes in world politics, the change of evolutionary epochs of the international political system. At the turn of the XX-XXI centuries. In connection with the contradictory consequences of globalization processes, violent political transformations that have engulfed various regions of the world, and the aggravation of many international conflicts, studies of cycles and waves of political dynamics have become relevant.

In addition, in practical and political terms, with the beginning of the XXI century. There has been a sharp increase in the need to predict in good time the emerging sharp turns in domestic and international politics in order to avoid catastrophic socio-political upheavals and wars as far as possible. Many previously widespread approaches to political forecasting (scenario approach, Delphi method, linear extrapolation of political development trends, comparative political analysis, etc.) have shown their insufficient effectiveness in the context of major socio-political upheavals, rapid and profound changes in domestic and international politics.

Nonlinear analysis turns out to be an effective tool for studying processes in world politics. At the same time, non-linearity means the possibility of evolutionary transitions between different states of the socio-political system, the presence of non-linear direct and feedback links between its elements, as well as the periodic passage by it of the so-called turning points of development, in which the dominant trend or the very vector (direction) of political development changes.

Nonlinear analysis has a special focus: firstly, to show on a computer model how a complex of interactions within a system affects individual political subjects; secondly, to identify at what point the international system is on the verge of unpredictability, fraught with upheavals or global war. The "behavior" of the model, which is assessed using calculated indicators, should predict an approaching crisis in international relations. Methods of nonlinear analysis are used by many political scientists in their scientific research. not only neo-realists (R. Jervis), but also globalists (J. Rosenau).

At the same time, supporters of this direction share the neorealist postulates about the conflict nature of the international system, about the dependence of the policy of the state and other political actors on systemic influence. They agree that the state remains the main element of international politics, but in interaction with many other actors at all levels. The last aspect is given special attention.

The basis of the scientific worldview of the supporters of this direction is the postulate that the entire surrounding world is a non-linear complex system that is constantly in a state of not always predictable changes. Actions in conditions of unpredictability are in the focus of studying non-linear processes of the widest range: the theory of catastrophes, weather changes, strategy and tactics of military operations, problems of ensuring international security.

In a non-linear world, the connection of phenomena is not necessarily proportional and unambiguous; cause and effect are not universal; the system as a whole is not reduced to the sum of parts and their functions. Nonlinearity means that events cannot be predicted with a given certainty, but at the same time, within certain

limits, the flow of events has the property of ordering, or self-organization. At the same time, the limits of predictability are mobile. The latter makes planning and management in the usual, linear sense inadequate. The most effective strategy of behavior in such a system is to manage on the basis of knowledge about the limits of its stability.

The interest in nonlinear systems in the social sciences is not accidental. Social systems are inherently unstable, uncertain, and non-linear—just what the analysis of non-linear systems deals with. Of particular relevance to this direction was the inability of political science to explain the unexpected collapse of the USSR and the dramatic changes in Eastern Europe, as well as a noticeable increase in chaos in international relations, which is marked by a redistribution of spheres of influence and the emergence of many new sources of conflict. Therefore, if nonlinear analysis is mastered by the humanities, significant progress in their development is expected. The latest mathematical methods for solving nonlinear differential equations look attractive for systems analysis of humanitarian problems due to a number of advantages:

- The described phenomenon is assumed to be integral, indecomposable into parts.
- The solutions obtained from equations with few variables can become chaotic over time, just as social systems, with relative simplicity of design, are capable of complex behavior.
- Nonlinear systems behave linearly for some time, but then the ratios of variables change in such a way that alternatives for further development (bifurcations) ripen.
- Nonlinear modeling allows you to track the history of the development of the system, which is determined through the interaction of the main elements, taking into account the random factor, which rejects its evolution .

Thus, various social systems, including international politics, can be considered as complex adaptive systems. They are given special complexity and dynamics by the fact that the subjects of the system are not passive. The source of their active behavior lies in the possession of self-consciousness, in the ability to self-learn and actively interact with the environment.

Nonlinear analysis makes it possible to take into account the existence of the international system, both synchronous and diachronic. Elements appear and disappear as part of a process that also has a beginning and an end. States, armies, military blocs, public associations are born and disappear as a result of conflicts between states, wars, economic development and other processes.

The transfer of the concept of nonlinearity to the sphere of international politics implies that the international system, like any subsystem included in it, is in one of

three states: relative stability, transition to a state of instability and chaos. If the system is stable, then the impacts can only have a local impact on it. In a state of chaos, unrest spreads quickly, often leading to destructive processes. The boundary state between stability and chaos is most favorable for the development, adaptation and circulation of information in the system. Indeed, the concepts of "international crisis" and "chaos" have much in common in meaning. The crisis means that the old relations have exhausted themselves, that destructive political processes are beginning to prevail, revealing new development opportunities and institutional forms for the subjects of politics and the international system as a whole, based on the principle of self-organization.

Researchers identify several attributes of complex adaptive systems. One of them is self-organization and accumulation of new properties. Self-organization is understood as the ability of a system to reproduce its behavior in a stable manner under changing conditions. At the same time, in response to external stimuli, it gradually forms new properties of its own. This is done through the accumulation of information about the surrounding conditions and the subsequent formation of new patterns of behavior. However, from the point of view of the theory of complex systems, this process does not mean a transition to another quality, but only a constant change.

The limitation of non-linear analysis is that it cannot give the probability of specific events under specific conditions or unambiguously predict the state of the international system in the future. Therefore, in the social sciences, this method has a more limited application than in the natural sciences. Another difficulty is related to the fact that the chaotic behavior of political systems is difficult to isolate due to the influence of non-political factors.

Since non-linear analysis is still used to analyze certain aspects of international politics, it is not always possible to single out a conceptual core in the works of this direction, which would allow us to talk about proximity to one or another TMT paradigm.

In conclusion, we note once again that the condition for the successful assimilation of non-linear analysis methods by political sciences is the mutual adaptation of basic concepts. Not only humanists will have to understand complex mathematical tools, but also scientists using mathematical methods must take into account the specifics of political sciences to the necessary extent.

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