Theory-practice problems of public national security policy related to the concept of "complexity" (methodological aspect)

Volodymyr Abramov * [1 A]; Serhii Mokliak [2 B]; Volodymyr Smolianiuk [3 B]; Ivan Ablazov [4 B]

***Corresponding author:** [1] Dr of Sciences in Philosophy, Professor, Professor of the Department, e-mail: smokliak@ukr.net, ORCID: 0000-0002-4228-4799
[2] Dr of Political Sciences, Professor, Leading Researcher, e-mail: smokliak@ukr.net, ORCID: 0000-0002-5255-8941
[3] Dr of Political Sciences, Professor, Leading Researcher, e-mail: smokliak@ukr.net, ORCID: 0000-0002-4222-813X
[4] Ph.D. in Political Science, Associate Professor, Chief of the Department, e-mail: ablazov@ukr.net, ORCID: 0000-0001-6293-8043

[A] National Academy for Public Administration under the President of Ukraine, Kyiv, Ukraine
[B] Military-Diplomatic Academy named after Yevgeny Bereznyak, Kyiv, Ukraine

Received: December 1, 2021 | Revised: December 19, 2021 | Accepted: December 30, 2021

DOI: 10.5281/zenodo.5809495

Abstract

The article analyzes the theoretical and methodological approaches to substantiate the complexity of the phenomenon of "national security". It concerns the prospects for the application of principles and methods of post-non-classical science in the study of this phenomenon, which are productive in relation to complex, nonlinear, open systems that are self-developing. The factors that determine the differences between classical and non-classical science in terms of revealing the essence of the phenomenon of complexity of national security are identified and characterized. The necessity is substantiated for supplementing the classical theory of national security with post-non-classical scientific exploration as the complexity of the security environment with a number of concepts: "organizational complexity", "complexity as an uncertainty", "complexity as a risk", "information complexity", etc. Post-non-classical ideas of the phenomenon of complexity of national security as a category of political science are developed and a possible typology of diversity of concepts of its complexity is offered. It is determined that the development of the complexity of national security becomes ambiguous and allows many options. On this basis, the fundamental differences between post-non-classical rationality and classical rationality in the study, development and implementation of public national security policy are formulated and substantiated. The preconditions for the implementation of new post-non-classical political practices of national security have been identified and substantiated.

Key words: the complexity of national security, interdisciplinary methodology, post-non-classical science, public policy.

Introduction

Security is one of the qualitative characteristics of the condition of a human, society, country, region, civilization as a whole. The problem of ensuring national security (hereinafter – NS) is of serious concern today to public and state figures, scientists, and all citizens of Ukraine. The multifaceted and complex nature of this problem has made it the subject of research by specialists in almost all fields of scientific knowledge: technology, philosophy, public administration, sociology, law, psychology, economics, mathematics, ecology, biology, health care, etc. Depending on the understanding and interpretation of the security phenomenon, a vision of the strategy and ways to develop and implement public policy to ensure it will be formed.

It should be taken into account that modern security environment is characterized by a high level of dynamism and uncertainty. Traditional

threats are taking on new forms. Hybrid-type threats are spreading and are becoming increasingly difficult to identify. The processes of global interdependence are intensifying. Perhaps one of the main methodological tasks of the study of complex objects is to develop special pictures of reality. Therefore, it seems appropriate to further develop the system of public management of the NS to take into account these threats.

The new situation requires changing the nature of the development and implementation of public policy practices to ensure the NS, and seeking new models of interaction between institutions and organizations that develop and implement it. It has become clear to the whole world that the former conceptual approaches to solving the problems of the NS are largely outdated and do not meet modern needs.

Material and methods

There are many different approaches to the study of security issues and of practices using a variety of methodological tools. Studies of the essence and content of public policy to ensure the National Security analyze the domestic and international conditions for determining cultural and humanitarian security strategies, based on the theory of social development, which have proven their relevance in social practices and modern scientific discourse. Based on the contextual approach, we can identify the most significant factors that shape a number of challenges for the individual, society and the state in the security sphere. First, we live in a crisis and conflict world (J. Schumpeter, L. Kozer). Secondly, individual national societies are being transformed towards global integrity (R. Robertson). Third, there is a new way of civilizational development – informationalism (M. Castells). Fourth, such a transition is characterized as “fluid modernity” (Z. Bauman), when social processes begin to dominated by the logic of network development, which loses the stability of hierarchical structures of order, changes are accelerated and become permanent and unpredictable, and people’s lives in such conditions appears as total uncertainty. Fifth, such a society appears to us as a “society of risks” (W. Beck) and danger. Sixth, to ensure a high level of national security, there is a need for understanding and rapid management decisions in times of conflict and rapid change, that is, society appears as a “reflective society” (E. Giddens).

The problem of the role and significance of the **complexity** in the implementation of the NS policy has not yet found its thorough coverage in the professional literature. This problem was raised only superficially in generalizing scientific works on state policy in the spheres of NS, the authors of which are, in particular, I. Ablazov, O. Vlasyuk, M. Karmazina and others. The key motive that motivates us to write this research is the global trend of dissemination of the security complexity issues (and relevant practices to ensure it) over an increasing number of areas of public life. There is a need in the academic environment to justify new trends in the world on the basis of the essential transformation of modern science methodology.

Results and discussion

There is a need in the academic environment to substantiate new trends in changes in the views of the NS on the basis of the essential transformation of modern science methodology, which arose due to the transition from monodisciplinary to interdisciplinary discourses and because of the need for dialogue between the classical, non-classical and post-non-classical cognitive strategies. One of the striking phenomena of this kind is the complexity of the development of security systems due to factors such as nonlinearity, uncertainty, the birth and functioning of social networks. In our opinion, the phenomenon of NS cannot be effectively studied using the existing disciplinary methodologies within

classical and non-classical science, because it has the properties of self-development that require its understanding as a complexity within the post-non-classical type of rationality.

In this regard, it is appropriate to cite a few quotes from the book by Italian sociologist D. Zolo "Democracy and complexity: a realistic approach" (Zolo D., 2010). Discussing the term "complexity" and emphasizing that "even in the most sophisticated use of the concept of complexity, it remains vague and ambiguous", he continues: "The term "complexity" in the sense in which I use it in theoretical matters does not describe objective characteristics of natural or social phenomena. Doesn't this term mean complex objects, as opposed to simple objects? Rather, the term refers to the cognitive situations in which subjects find themselves, both individuals and social groups. The relationships, which actors build and that they project on their environment in an attempt of self-orientation, regulation, prediction, planning, or manipulating will be more or less complex, depending on the circumstances. In the same way, the real connection between the subjects and the environment will be more or less difficult" (Zolo D., 2010, pp. 28, 29, 31–32).

Thus, political actors are observers of the complexity of the NS phenomenon and find themselves in a situation of epistemological complexity. There is a need for a reflexive epistemology based on the recognition of the cognitive relationship of a political subject (or system) and the environment in conditions of increased complexity of the NS. Further, this problem can be considered in different perspectives, in particular in the context of the discourse of the formation of post-non-classical science, which involves expansion, introducing a new conceptual character. Namely: political subjects are introduced as observers of complexity, as reflexive subjects who are observing, including themselves, in the diversity of specific cognitive-project situations of the NS environment constructed by them. In other words, it can be argued that it is the modern post-non-classical science (focused on the convergence of natural science and socio-humanitarian knowledge, their interpenetration, recursive-communicative combination), where appears a new intersubjectivity as a second-order subjectivity, or a new transcendental subjectivity of complexity. We will be writing below about it, in connection with our proposed concept of the observer of complexity and recursive logic of the Laws of Form by G. Spencer-Brown, in which observation is seen as an act of drawing a boundary with a simultaneous distinction between the internal and external. There are many different kinds of comments on this topic, which together form something what N. Luhmann proposed to call the theories of differences or theories of observation of systems (Luhmann N., pp. 66-67).

To simplify, we can say that the observation of complexity is a certain network process that takes place between politics and science, or rather – between "conceptual characters" and "partial observers". As for the possibility of other intermediaries, such as, for example, logic, thus its possibilities in this capacity are under suspicion, because logic is characterized by reductionism – the transformation of a concept into a function. From our point of view, this reduction is impossible, because by becoming a proposition, the concept loses the characteristics it had before. The reason is that the principle of indivisibility is replaced by the principle of independence (independence of variables, axioms and unsolvable propositions), and therefore the formal logic becomes unarmed. In our opinion, the application of fuzzy logic for risk analysis in the complexity of the NS is important for political and managerial decisions.

This statement makes it clearer the difference between the positions of such philosophers of "uncertainty and complexity" as G. Deleuze and F. Guattari from the position of E. Morin, who tried to develop a method that connects politics and science (Deleuze G., Guattari F., p. 170; 175-176).

But what is this method in the understanding of E. Morin? It is possible that in this case it would be appropriate to refer to his five-volume treatise "Method". And yet, if we briefly answer this question, how much it allows us to stay in

the discourse of the paradigm of complexity, this method could be called the method of recursion, as a kind of "method of method", understanding of understanding in a complex world. (Morin E., pp. 40–41). E. Moren was one of the first to embark on the path "from the concept of the system to the paradigm of complexity". At the same time, when G. Haken's synergetics and I. Prigogine's theory of dissipative structures appeared, the dynamic chaos was "invented" as well as its representation with the assistance of a mathematical construction known as "strange attractors", which is also based on the idea of recursion.

Thus, the path to the paradigm of complexity began with a conscious rejection of simplification. Simplifying the phenomenon of security is the disconnection of separate and closed entities, the reduction to a simple element, and the rejection of what does not fit into a linear scheme. The denial of reductionism as a principle of finding an explanation for the phenomenon of NS at the level of elementary components, and, accordingly, replacing it with the principle of holism as a principle of finding an explanation at the level of total integrity, stimulates the principle of simplification. The only difference is that in this case we are talking about the reduction opposite to the whole, about a positive feedback in cognition, which turns the vicious circle into an effective cycle and becomes reflective and generating the complex thinking environment for implementing the NS policy.

The next way to understand the complexity of the NS is the principle of cyclic dependence. Cyclicality is the discovery of the possibility of a method that forces terms to influence each other and produce in the course of these processes the complex knowledge, which carries with it its own reflection of the NS policy (Morin E. 1992, P. 371.]. By maintaining a cyclical dependence, we thus probably open up the possibility of knowing the complexity of the NS, which reflects itself. In fact, the object-subject cyclical dependence can lead to reflections on the cultural and social characteristics of science, one's own consciousness and lead to questions about the essence of the complexity of the NS. Policy actors emerge through a reflexive movement of thought about thoughts.

We assume to consider these questions in more detail in the following article. And here we just note that currently the very concept of complexity has many interpretations, which is quite natural for the paradigm of complexity of the NS, of which it is a part. We understand it as a constructive attempt to introduce the concept of observers (political subjects) of complexity into the scientific and political discourse, which opens new opportunities for the process of understanding intersubjectivity.

To reveal the reality of the complexity of the NS or the complexity of its reality is the second task of our article. There are many concepts of the complexity of reality and information about it in science. In this research, we will be interested not so much in their diversity as in the possibility of the existence of some common point of view on the reality of the complexity of the NS as an object of its policy. We will proceed from the fact that, regardless of the type and stage of development of science, it implements the principle of objectivity, that is, the independent existence of the object of political science, separate from its actor and subject, and describes one or another type of objective determination. We will further understand the reality of the complexity of the NS (real being) in the narrow sense, as an objective reality (materiality) or ontology. The "temptation of teleology", like the temptation of reductionism, are related processes associated with the processes of expanding the boundaries of the subject area of a particular type of scientific knowledge and the realization of the epistemological ideal of monism. We will call this tendency as "monisation". We note two directly opposite main tendencies in the primary "monisation": 1) reduction of complex, integral to simple and elementary, which means reduction; 2) reduction of simple, primitive, elementary to complex, system-organized. We call this trend "extraduction" or "elevation". The main purpose of this part of the article is to identify the essence and content of the NS phenomenon as a complexity, to study the

differentiation of ideas about the reality of the NS (its complexity) on the example of researching ways to understand the feasibility, information and complexity in modern political science.

We consider the complexity of the NS as an object of policy through a number of concepts, namely: "organizational complexity", "complexity as uncertainty", "complexity as risk", "information complexity".

The organizational complexity of security environment. Most concepts of the NS complexity have a pronounced classical rational orientation (almost all classifications of types of systems by degree of complexity are objective). Let's dwell on this in more detail. The classical general epistemological and ontological position is as follows: the world (object, reality, referent) not only exists independently of the subject who perceives, explores, acts and communicates. This world is commensurate with this subject's exploration and understanding. For all the differences in the understanding of sense, the rational as meaningful is an extremely broad and general point of view, which allows at least somehow to combine different types of rationality. Then the classical idea of rationality as an order merges with the new one: the rational, orderly is that which is somehow organized, comprehended.

Postclassical vision of the problem can be formulated as follows: the category of irrational captures the conceptual and factual balance, which does not accept the scheme of comprehended and systematized scientific knowledge. It is an attribute of cognitive activity and its results. The irrational forms an opposition to the rational as the unconscious – to the conscious, the meaningless – to the meaningful, the inexplicable – to the expressive, the unsolvable – to the solved. These or those theoretical constructions, being rational in one sense, can appear irrational in another. Rationality and the forms that oppose it do not form a dilemma, but a three-member series: rationality – nonrationality – irrationality. In this series, the "nonrational" serves as an indirect link. Then the classical pair: complex-simple can be transformed into a postclassical triad: complex (unattainable) – complicated (difficult, unfulfilled) – simple (elementary, achievable).

Thus, the given theoretical generalizations give grounds to speak about the expansion of the epistemological and ontological position on the structure of the security environment, including the environment of the NS as an object of development and implementation of public policy.

The complexity of the NS as uncertainty. The most important characteristic that makes the political decision-making process by no means simple is uncertainty. Note that this circumstance characterizes most of the problems associated with human activity, be it economics, politics, management, science. Risk and uncertainty are companions to ensuring the security. Understanding this circumstance is one of the prerequisites for the study of political decision-making processes. Every day people have to make risky decisions, because the stochastic nature of natural and social phenomena does not allow to unambiguously predict the course of events. The future is always open and uncertain. There have been many studies in the history of political science on the problem of uncertainty, but they have focused on whether uncertainty is a subjective or objective characteristic of political life. According to the first approach, uncertainty is the state of mind of a political actor or the level of knowledge about a particular situation. According to the second approach, uncertainty is independent and objective in respect of a person.

Today, the term "uncertainty" is widely used in various fields of knowledge, especially in economics, political science, management, psychology, sociology, it is used in mathematics, technology and other sciences (disciplines). The category "uncertainty" is often considered synonymous with the term "risk" and those are used as equivalents. The analysis of scientific sources shows that they all offer approximately the same definitions of uncertainty as lack of information, completely or partially missing information, ignorance, and so on. In short, uncertainty is characterized as the lack of sufficient information. Certainty as an antonym

of uncertainty is characterized by the presence of accurate information. A common disadvantage of such definitions is that they all have methodological limitations, as they do not take into account the existence of objective uncertainty of the NS, which will be discussed further.

There is objective uncertainty and randomness that does not depend on the subject. Thus, uncertainty and randomness are not always the result of our incomplete knowledge. The situation of uncertainty can be described as problematic in terms of purpose, alternatives, means, conditions, criteria for implementing the NS policy, or their various combinations. Within the decision-making tasks, the following main types of uncertainty can be distinguished: objective uncertainty ("uncertainty of nature"); uncertainty as the lack of sufficient relevant information (epistemological uncertainty); strategic uncertainty as a dependence on the actions of others (partners, opponents, organizations); uncertainty caused by poorly structured problems; uncertainty caused by the ambiguity and vagueness of both the processes and phenomena of the global, regional and national security environment, and of the information that describes them.

Information complexity of the NS. Speaking of the role of information in decision-making, it should be noted that the problematic situations associated with uncertainty arise not only when there is a shortage of information, but also when it is redundant. Lack of information makes it difficult to understand the relationship between the elements of the problem situation, to get a holistic and adequate picture of it. The excess of information due to the multiple links between the various elements of the problem situation also complicates the process of orientation in these conditions, which necessarily requires the selection of the most important elements, determining their share.

The complexity of the security environment can be identified with the amount of information contained in it, and / or with the amount of information required for its complete theoretical and experimental description. Thus, the static complexity of the NS environment is estimated by the minimum amount of information required to fully describe its static characteristics; the dynamic complexity – by the amount of information contained in its uncertain parameters, characteristics. The complexity of the NS environment has a combinatorial origin. It is generated by the combination, interconnection of elements and states in each fixed and sequential moment of time. Large dimension, heterogeneity, diversity are factors that increase their complexity. The category of complexity is objective. The objective absolute nature of the category of complexity is determined by the existence in the system of many interconnected parts and elements that can be in different states, uniquely defining both components of complexity. In research, design, the complexity of systems can be relative, subjective, because the policy due to the limited capabilities of methods or for simplification can add simplicity or add complexity to the system.

The scope of the article does not allow to widely consider the problem of information complexity of the NS environment. However, it should be emphasized that modern warfare, including hybrid warfare, does not change its essence. It is a continuation of politics, but the means of violence today include information weapons. That is why it can be constituted that together with the land, sea and air space of the war, the information space has become full. Together, they also create the complexity of global, regional and national security spaces.

The dynamic complexity of the NS. The socio-political complexity of the NS has a semiotic nature of information connections, as opposed to a simple nature, where only functional connections are present. The complexity of the NS is characterized by the possibility of behavior based not so much on the structure of goals as on the system of common values. Therefore, the value-symbolic aspects of the existence of such a system require a third element – a new ideal-reflexive language, in comparison with the second – structural-functional language (representation) of the NS system (in a broad sense) and the first – physical

and mathematical language. The complexity of the NS can be differently represented as a plurality. The procedure of division into elements is included in the concept of the NS system. But the choice of relations between these elements also depends on the observer, on the way the system is described. What appears to one observer who has identified certain relationships between elements as well-organized may seem like primordial chaos to another observer (who uses a different set of relationships to describe them). The concept of the complexity of the NS has a polytheoretical and anti-reductionist character, as it is associated with the study of the specifics of socio-reflexive systems, and therefore is poorly formalized, but remains productive in the field of political science. Thus, the integrative concepts of NS complexity are complex in nature and cannot be reduced to a single basis.

Let's try to link the variety of concepts of complexity into some minimal typology. Based on the criteria of unpredictability and complexity, it is possible to introduce a typology of complexity according to the degree of predictability / freedom. Thus, the complexity can be: 1. Strictly and unambiguously determined (predictable). 2. Indeterminate (unpredictable) rigidly and unambiguously: 2.1. probably predictable (accidental), 2.2. probably unpredictable (free), 2.2.1. relatively free, 2.2.2. absolutely free. If to introduce a symbolic measure of the complexity of Complex. (Deg.), Then for group 1 Complex. (0); 2.1. – Complex. ($0 < Deg < 1$); 2.2.1. – Complex. ($1 < Deg < \infty$); 2.2.2. Complex. (∞).

The main unreduced types of NS complexity and complexity concepts are as follows. 1. Complexity as addition, sum of parts, is reduced to elements of NS and allows to introduce formalization (often metric). 2. The complexity of the NS as a structured integrity that is not reduced to the sum of the elements, which allows formalization in the extreme case in the form of their infinite sum. 3. The complexity of the NS as a structured integrity, which requires the introduction in addition to spatio-temporal-causal relationships the others – structural-functional, not reduced to the first. 4. The complexity of the NS, which develops as a self-organized integrity (synergetics). In some cases, either an alternative or an additional organic security system is introduced, where complexity appears in two guises: a) which reproduces its structure (preconditions) in time and space; b) which evolves in time and space, in this case the evolutionary connections are added to the two connections described above. 5. The complexity of the NS as a socio-reflexive system that connects nature, society and spirit together and is not reduced to the above three objective connections. 6. The complexity of the NS as an individual subject of development and implementation of public policy in the field of security. At the same time, the appearance of unique features leads not only to non-objectified, but also to non-intersubjectified connections, which means the complexity of a political subject always carries a sense that cannot always be expressed in the meaning. The complexity is always the result of a "contradiction of conjunction" between the subject and the object of the NS (or their "non-conjunction"). Therefore, summing up the results of comprehension of the NS complexity, we can admit that the entire security environment (global, regional, national) is a complexity, but not everything that is complex, is taken into account in modern socio-political practices.

Conclusions

The differentiation of the reality of the NS is objective in nature, which leads to the objective differentiation of sciences and basic research methods and demonstrates not only the complexity of cognition, but also the complexity of reality. Thus, the reality of complexity as the impossibility of reducing the existence and cognition to a single basis is the main feature of post-classical rationality. The analysis of the processes of differentiation and integration of scientific knowledge on the example of the analysis of the NS while maintaining the tendency to monism has its main result in the secondary pluralization of primary concepts. It is

implemented in a stable set of meanings of the concept of NS, which is system-forming for the corresponding type of ontology. The application of extradisciplinary (general scientific) dynamic and system-cybernetic approaches and integration information concepts of the complexity convinces in the need for their mutual complementarity, which demonstrates the inescapable complexity of ideas about the reality even when using the integration approach.

Post-non-classical science has significant heuristic potential, which makes it possible to study the development of society as a whole and its individual structures, including contributing to the NS theory. In the post-non-classical paradigm, the consideration of the NS appears as a complexity – a dynamic, non-equilibrium, open self-developing system, which is characterized by processes of self-organization, deterministic chaos, uncertainty and inevitable crises. An essential characteristic of the nonlinear development of the NS system is the polyvariety and multistability, which determine the possibility of choosing the optimal mode of its development. The post-non-classical concept of nonlinear development of the NS makes significant adjustments to the known classical social laws and models, reserving the right and opportunity to study the whole complexity of its development. Thus, the trajectory of development of any nonlinear social systems (namely the NS) is a complex line that is not subject to classical schemes and models of formation. And only non-trivial typological constructions, strange attractors and fractals are able to convey the complexity of its dynamics, which requires particularly careful study.

This research is a preliminary “sketch” of the post-non-classical theory of the NS complexity. Prospects for further research on this issue are to clarify the content of post-non-classical and communicative methodology, to establish principles, types of methodological attitudes of political science concerning the implementation of political practices of the NS as a direction that provides the possibility of developing and implementing the public policy for complex nonlinear social processes management. It should be noted that the change of initial conditions allows to choose one of the possible managerial influences, which is determined by the environment of the NS development. But at the same time, we do not create it at all, but only change the management of the NS to the paradigm “subject – multi-subject NS environment”, which corresponds to the post-non-classical practices of public policy.

References

Deleuze G., Guattari F. Shcho take filosofiia? [What Is Philosophy?]. Lviv, Astroliabiia. 2015. 272 p.

Zolo D. Demokratyia i slozhnost. Realystycheskyi podkhod [Democracy and Complexity. A Realist Approach]. Moscow: Yzd-vo HU VShE, 2010. 320 p. Retrieved from: https://id.hse.ru/data/2010/11/24/1209958604/1.pdf.

Luhmann N. Vvedenye v systemnuiu teoryiu [Introduction to systems theory]. Moscow. Lohos, 2007. 360 p. Retrieved from: https://knima.ru/pages/biblio_book/214775

Morin E. Metod. Pryroda pryrody [Method. The nature of nature]. Moscow: KANON+, 2013. 373 p.

Morin E. (1992). From the concept of system to the paradigm of complexity. *Journal of Social and Evolutionary Systems*, № 15(4) P. 371.