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## REALITY, ONTOLOGY AND SUBSTITUTION IN THE ORGANIZATION THEORY BY ALEXANDR BOGDANOV

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**Abstract.** Alexander Bogdanov's tektology and empiriomonism are treated in this article as an applicable basis for the recovery of structural realism in the study of international politics. Kenneth Waltz, the author of the existent structural realist theory, favored a systemic approach to international relations and acknowledged the problem of "organized complexity", as produced by the activities of free-willed individuals, facing social sciences in particular. Yet, unlike Bogdanov, he seems not to have fully appreciated the reverberations that the advent of quantum physics caused for ideas on human cognition. Previously unambiguous distinction between mental and physical manifestations became blurred. It led to the emergence of a general "quantum" methodological school of structural realism, of which Bogdanov is recognized in this article as an early representative. Tektology is a system science, meant by the author to explore organizational features and principles of organization, inherent to any system complexes (biological, political or psychic). At the same time, as pointed out in this research, Bogdanov paid particular attention to the observer problem in societal studies. Bogdanov (as well as Niklass Luhmann later on), but unlike Kenneth Waltz (or Alexander Wendt), would deem neutral observation of international relations (IR) beyond attainment. It is revealed in particular that the long-term appeal of the Waltz's theory has in fact been sustained by the form of system analysis it involved, based on deductive inference. It carried a promise to allow the IR to generate logically coherent theories about the ways that the international system is organized in. In empiriomonism, a method of "universal substitution" is promoted instead, allowing for new gains in knowledge about the unknown outer (material) reality. A theory of international politics of the latter kind could provide a framework for elaboration of new reasonable hypotheses concerning the international sphere.

**Keywords:** structural realism, Alexander Bogdanov, Kenneth Waltz, tektology, epistemology, system theory, materialist monism, constructivism, methodological individualism, universal substitution.

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## РЕАЛЬНОСТЬ, ОНТОЛОГИЯ И ПОДСТАНОВКА В ТЕОРИИ ОРГАНИЗАЦИИ АЛЕКСАНДРА БОГДАНОВА

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**Аннотация.** Рост нестабильности в международной сфере на первый взгляд подтверждает релевантность реалистской перспективы при изучении мировой политики. Однако школа реализма в международных отношениях руководствуется ограниченными представлениями о процессах осознания людьми окружающей реальности, что снижает ее объяснительную способность. В статье проанализированы возможности актуальной реабилитации теории структурного реализма на базе тектологии Александра Богданова, сочетающей системный анализ и авторскую философскую теорию познания. В результате исследования уточнены онтология, эпистемология и методология его организационного учения.

**Ключевые слова:** структурный реализм, Александр Богданов, Кеннет Уолтц, тектология, эпистемология, системная теория, материалистический монизм, конструктивизм, методологический индивидуализм, универсальная подстановка.

The encyclopedic scientist, writer, doctor, and revolutionary Alexander Bogdanov (Malinovsky, 1873–1928) was long ahead of his own time as an original thinker. He wrote outstanding philosophical works that remain relevant to this day. Bogdanov's creative legacy still attracts the keen interest of enthusiastic scientists of various profiles both in Russia and abroad<sup>1</sup>. However, paradoxically, in general, his ideas are still bypassed by the close attention they deserve.

Not many people are well versed in the specifics of “Tektology” [1] and “Empiriomonism” [2], the main of his published works, which are closely related [3]. They exhibit borderline theorizing, the understanding of which in itself can cause insurmountable obstacles, especially when scientists are too accustomed to narrow professional specializations, while their minds seek unambiguity. In the Soviet Union, Bogdanov's scientific works were hushed up, and he himself became notorious as a pariah, whom Vladimir Lenin, who saw him as a competitor in party affairs, subjected to “defeat” in the book “Materialism and Empirio-criticism” [4] either for “machism” or for positivism. Meanwhile, the research methodology built on an elegant version of structural realism, which appears from Bogdanov's works, could be of the greatest interest for the further development of political science and international relations, in particular, allowing international and social scientists in general to combine useful features of positivism with elements of interpretivism in their research in a productive way.

As a separate perspective in the methodology of science, positivism proceeds from the assumption that genuine knowledge is subject to verification by purely scientific methods (such as observation, experiment, or logical-mathematical proof). Being one of the research methodologies used only in the social sciences, interpretivism, for its part, assumes that reality does not exist in isolation from how it is seen by people (here, in other words, a neutral view of reality is considered as impossible); accordingly, it prefers other methods (mainly qualitative ones) in order to get closer to understanding the meanings and the motives of human actions. However, in addition to such extreme positions, borderline methodological

<sup>1</sup> In December 2021, Moscow hosted the regular international scientific and practical conference-biennale “The Systemic World of A.A. Bogdanov”, organized by the Department of “System Analysis in Economics” at the Financial University under the Government of the Russian Federation in cooperation with the Central Economic and Mathematical Institute of the Russian Academy of Sciences and the University of Hull (Great Britain). Available at: <https://bogdanov.systemeconomics.ru/> (accessed March 16, 2022).

schools have also developed by now, striving to merge different approaches, thus facilitating their combinations. It seems that they may contain composite tools of scientific knowledge that have not yet been fully used, but in principle may in the future give the opportunity to increase the governability of processes in international relations.

One such school is the school of structural realism [5], rooted in the development of physical science since the beginning of the 20th century, that is, since the advent of quantum mechanics, when physics ceased to be a discipline from which an objective description of reality is expected from a third (neutral) person. Thus, a completely new perspective has opened up in science as a whole, which has blurred the previous clear distinction between mental and physical phenomena. Both emerged as equally resulting from interaction between parts of the physical world [6]. In international relations, such views were evidently circumstantially reflected in Kenneth Waltz's structural realism [7].

Not unlike Bogdanov, Waltz was assessed by many critics as an incorrigible positivist, although he himself criticized positivist views. Waltz wrote that due to the complexity of human interaction, the methods of classical physics are inapplicable to international relations. Therefore, he considered it illogical and sciolistic to use them in this way. Waltz described the “organized complexity” of social and political systems that differ from natural systems, stemming from the activities of individuals with free will, which excludes traditional ways of research [8].

According to Waltz, scientific explanation necessarily takes a systematic form, whether we deal with natural or social sciences. However, international relations, as he noted, should adopt other procedures for accumulating knowledge due to the specifics of their object of research. It is characteristic that the system theory proposed by Waltz was intended, in his own words, not to give a direct explanation of what exists, but to offer useful representations that allow, in an extremely simplified form, to organize for scientists and experts the incredibly complex chaos of empirical reality into more understandable and easily manageable forms.

Meanwhile, the general school of structural realism, which was developed under the influence of new achievements in physics, has acquired *ontic* and *epistemic* variations [9]. In the first case, it is assumed that the real world consists exclusively of structures that are largely independent of the influence of people. Ultimately, neorealism developed by Waltz came

closer to this version. In the second case, we deal with the point of view which was, probably, firstly expressed by the French mathematician and physicist Henri Poincaré [10]; according to it, people have access to some knowledge of the real but unobserved world, concerning the relationships between real things, but this knowledge is formed and restrained by the structures of human cognition. Alexander Bogdanov was extremely interested in the modern achievements of physics and, earlier than many others, he managed to come close to understanding their far-reaching philosophical significance [11]. In order to acquaint the reader in more detail with his epistemic version of structural realism, the author of this article will now consider the methodology of scientific analysis proposed by Bogdanov in detail and from different angles.

This article continues the analysis of organizational science (tektology) by Alexander Bogdanov, started in the author's previous works [12, 13], which confirm its continuous high-potential importance for the social sciences. In this case, the focus of attention, along with the general methodological framework of monistic organizational theory, which expands the scope of theoretical understanding of world politics, is the special model of causality proposed by Bogdanov (closely related to this framework), the latter serving as a basis for his idea of the universal substitution. This idea may be applicable for the scientific explanation of international reality.

### TEKTOLOGY AS A SYSTEMS THEORY

In his works, Bogdanov usually writes not about the system, but about system complexes (apparently taking over in this sense from Giordano Bruno with his idea of a plurality of worlds). For Bogdanov they do not exist outside of how thinking beings perceive them. Such complexes make up the horizon of a person's observation of the real world, against which a person sets himself as an observer. At the same time, tectological science was intended by its author to study not system objects as such, but the processes of transformation of their organizational forms. It was meant to encourage the exploration of the nature of "cooperation" and "conflict" between system complexes, the nature of stability in their relations, as well as the crises they might undergo, thereby opening the way to a more dynamic picture of the existing forms.

Bogdanov's idea of tektology rests upon the concept of organization, while organization can mean: 1) a group of people (states, actors, etc.) united

for a specific purpose and endowed with rights denied to outsiders; 2) an assessment of the state of the inner structure of the complex taken in liaison with its environment (as organized, disorganized or neutral); 3) taxis as a man-made order – in contrast to the (dis) order, independent of human plans, as defined by the term "cosmos"<sup>2</sup>.

Bogdanov's tektology also introduces the concept of a biregulator, in fact, an operationally closed system complex. The means through which such a complex communicates with the environment, "inhabiting" it, reproduce the internal structural qualities of this complex itself. The concept of biregulator anticipated the idea of autopoiesis, or "self-reproduction", which was introduced into scientific circulation in the 1970s by biologists Umberto Maturana and Francisco Varela.

In the interpretation of these authors, only biological living systems are capable of autopoiesis, which differentiates them from inanimate systems [14]. Maturana and Varela did not classify social systems as autopoietic ones. However, their idea was later accepted and assimilated by sociologist Niklas Luhmann [15]. For Luhmann, in his turn, living systems are only one of the forms of autopoietic systems, and among other such forms, he also indicates social and mental systems. Thanks to him autopoiesis began to be accepted as a herald of a new systems theory, which, however, has not yet reached the same degree of influence on a par with the theorizing about open systems [16], of which Ludwig von Bertalanffy is considered to be the "founding father".

Applying the concept of autopoiesis in sociology, Luhmann came to the conclusion that a system is to be defined by the boundary between its environment and itself. He attributes the closedness of the system (including political or mental) to issues of its internal organization and identity, and associates openness with its ability to extract energy from the environment.

Bogdanov, distinguishing operationally closed and operationally open ("mechanical") systems (that is, those that are controlled from the outside), fundamentally avoided organizational metaphors that liken a society or a political system to a living being. His main idea in relation to systems science was to study possible patterns, as well as general organizational features and principles of organization, which one way or another may be inherent in any system complexes, regardless of whether they are biological, political,

<sup>2</sup> In biology, taxis implies an intrinsic reaction of an organism in response to stimuli from the environment, when it demonstrates spontaneous and directed (ordered) movement toward a stimulating source or away from it.

or mental. Thus, Orsan Senalp quite rightly notes that “all piecemeal developments and discoveries of systems concepts, mechanisms, and principles: like open-closed systems, bifurcation, emergence, self-organization, self-regulation or feedback mechanism, autopoiesis as well as a concrete methodology for studying the variety of systems were addressed and explicitly described in Tektology” [17].

At the same time, Bogdanov does not envisage a direct opposition between “living” and “mechanical” systems; he describes overcoming by reason the boundaries between them, which previously seemed impassable [1, p. 303; 18]. This, as well as his initial position, according to which structural relations can be generalized to the same degree of formal graphical clarity as quantitative relations in mathematics, which is why organizational tasks can be solved by methods that are similar to mathematical ones, provoked a negative response to the “Tektology” of the odious German professor Johann Plenge back in 1927 [19, pp. 39-42] for allegedly giving in it an “inorganic picture of a mechanico-materialistic universal organization” and for the fact that Bogdanov did not pay due attention to the problems of the mystical spirit [20, p. 24].

Much more accurate is the opinion of academician Nikita Moiseev about the widespread claims of the connection of tektology to the general theory of (open) systems authored by von Bertalanffy being only partially true [21]. Although von Bertalanffy was hardly unfamiliar in advance with the content of “Tektology”, published in Berlin in German translation in 1928–1929, those ideas where von Bertalanffy’s text literally conforms to “Tektology”, despite promises involved, have not “introduced any new methodological methods or constructive procedures to the analysis of complex systems. New mechanisms were not exposed, while mathematical methods of analysis remained being premised on the ideas from the bifurcation theory and *Poincaré and Tikhonov* parameters, on theory of graphs and other traditional methods of analysis of complex systems introduced in mathematics irrespective of the ideas of the systems theory”. Mathematician Moiseev, who in principle had high regard for Bogdanov’s tektology, thus contended, apparently, that above all its importance consisted not in expectancy of future achievements in mathematics, but in what one could rather define as analog thinking (it assumes the presence of diverse variations undergoing continuous transformations) [22].

As is known, Bogdanov found the key mechanisms of system organization (ordering) in conjugation

(coupling), chain connection (coarticulation), ingression (splicing)<sup>3</sup>, and disingression (a state in which connected activities mutually paralyze each other, leading to the appearance of a “border” between them) [24]. He defined the main mechanism of regulation as “fitting”, calling natural selection according to Darwin a special case of fitting, which can be attributed to the processes of preservation and disintegration of organizations of any possible types. The terms “egression” (coming out of the series) and “degression” (going down) in tektology characterize the centralistic and skeletal types of organization. They define the contours of different systems, making it possible to distinguish hierarchically organized complexes from those that are arranged according to the network principle [25, pp. 82-88]. This is extremely useful when studying the processes of differentiated (dis)integration observed on the basis of the European Union or any other regional grouping, as well as security spaces – for example, the transatlantic one.

Applied to the sociological field, Bogdanov and Luhmann’s systems theories are similar in the point that both authors attached great importance to the creativity of individuals (mental systems) in the evolutionary selection of collective responses in closed self-organizing systems to environmental challenges, but they differ in some key methodological aspects. Luhmann considers functionally differentiated autopoietic subsystems (economic, legal, political, scientific, and others) to be objects whose behavior is accessible to empirical observation from the outside. This forces him to get rid of a privileged external “observer” endowed with authority, who would explain and describe the external reality in the only correct and compulsory way for everyone who is “inside” [26]. In his turn, Bogdanov places his “observer”-collectivist at the center of the processes of organization and disorganization, understood as a source and a way to achieve the desired material social progress through the development of a closed (autonomic) system complex of a chaotic external environment in which, in principle, no order can exist outside the human gaze [27, p. 133]. It is noteworthy that such an organizational view differs considerably from the more traditional for experts in international relations (and at the same time rather contradictory) picture of a closed and anarchic interstate system, the external environment of which, in principle, remains undefined.

<sup>3</sup> The type of “chain connection” between heterogeneous elements in the structure of the complex, which is carried out with the help of “mediating” elements for its stabilization [23].

### ONTOLOGY: MATERIALIST MONISM

The canonical position of Russian Marxists at the beginning of the 20th century consisted in “appointing” Benedict Spinoza as the ancestor of materialism. Starting with Georgy Plekhanov, they narrowed down the role of Spinoza to establishing materialism as the basic principle of Marxist philosophy with his assistance [28]. Bogdanov disagreed, because it was clear to him that the word “matter” in Spinoza’s time, that is, in the 17th century, had a fundamentally different meaning, and the practice from which he proceeded was very different from the modern one.

In fact, the concepts of matter and spirit (reflecting matter), from Bogdanov’s point of view, are devoid of a clearly distinguishing definiteness. At the same time, the mental experience is organized individually, and the physical experience is organized socially. In other words, for him these are two phases of the organizational process, both taking place in the external world relative to the thinking individual. Individually organized experience is an integral part of socially organized experience, which gives what is called objective reality, that is, people place experience (practice) between the external object itself and their ideas about it. The idea in this case is not a passive reflection of the real object, but a stimulus of action for the social subject, free in his understanding of the object. Thus, for Bogdanov, experience is not the result of physical influence on the human mind, it is derived from the interaction of the physical and mental.

Bogdanov’s position undoubtedly echoes the views of Kenneth Waltz (the author of the structural-realist theory of international relations) that theories and the minds generating them are inextricably linked with the reality they are exploring. It is no accident that Patrick Jackson speaks directly about Waltz’s inherent monism and adds: “For a monist, the objects of scientific research are not inert and meaningless entities that impress themselves on our <...> senses or on our theory-informed awareness, but are instead always and already intermixed with conceptual and intentional content” [29, p. 124]. Such a statement of the question, however, still contradicts most of the modern theoretical and international studies, in which the separation of the mental sphere and the external “world” is taken for granted.

In the case of ontology, it is necessary to clarify that we are talking about materialist monism [30], which does not reject the existence of a reality

independent of reason, but does not assign a separate ontological position to identity or language.

### EPISTEMOLOGY: CONSTRUCTIVISM

The interaction of the observer with the reality contemplated by him is hardly possible to “turn off” at someone’s discretion. The observer, according to Bogdanov, at the same time requires improvised “pointers” (representations) in order to endow the surrounding reality with a kind of systematized, understandable meaning. Representations, unlike presentations (direct imprints of reality), are constructed in accordance with the standards of thinking of a particular social group and do not coincide with the laws of the existence of that part of reality that remains unknown to the observer. Under such conditions, the biregulator follows the principle in accordance to which representations emanating from its individual observers and confirmed by its cultural norms are accepted as something that really exists (are objectified), but continue to be constantly refined or rebuilt. Thus, the mind manifests itself relationally, namely as the relationship between the individual mental system and the group socio-cultural system.

Not only the established forms of socio-cultural experience and cognition but also the currently accepted scientific principles, methods, and theories are important for determining the boundaries of available knowledge about the emerging environment for a particular closed system. The further advance of the mind on the unknown is gradually achieved by people moving to more and more accurate representations of the external space through many alternating stages (from the mental system to the physical and backwards again).

Famously, Alexander Wendt attempted to take a new look at the theory of international relations as it was presented by Waltz, from a constructivist standpoint. In 1999, Wendt presented the work “Social Theory of International Politics”, which attracted the detailed attention of specialists, where he presented a general criticism of neorealism in a new, “moderately” constructivist way. As for Wendt, the meaning and content of power and interests are determined primarily by ideas and culture. At the same time, he denies that constructivism is poorly compatible with positivist epistemology: there is nothing in the intellectual activity required to explain the processes of social construction that would differ epistemologically from the intellectual activity in which natural scientists are involved [31]. According

to Wendt, both social and natural sciences are equally aimed at explaining patterns expressing causality, as well as the resulting effects. Thus, in this matter, he disagrees not only with Bogdanov but also with Waltz. In epistemological terms, Wendt, on the contrary, focuses on the scientist's mind as an autonomously functioning unit (an external observer), and the question of what social factors can shape his mental processes is completely ignored by him. Strictly speaking, it is difficult to call such a position constructivist in principle. Naturally, Wendt's intention to build a new theory of international relations in accordance with the principles of quantum mechanics has not yet brought a clear result.

#### METHODOLOGY: INDIVIDUALISM

Interpretive political science, borrowing its special methods from sociology, claims to study the "notional load" of human action. It also applies to international politics. From this point of view, international political behavior is ultimately the behavior of people that is intentional. In other words, it contains a subjective component. At the same time, according to the principle of methodological individualism as defined by Max Weber, only an individual action is "subjectively comprehensible" (that is, it lends itself to a hypothetical causal interpretation by a third party, which, in order to meet the criteria of scientific character, is nevertheless still subject to verification) [32].

It seems important that methodological individualism, according to Weber, is different from atomism (denoting in sociology or social psychology the discreteness of an object or process) in the sense that it does not entail the need for a complete reduction of sociological approaches to psychological ones, paying tribute to the autonomous existence of interpersonal relationships that are not completely reducible to the state of the psyche or the individual mental state of their individual participants. Also useful is the distinction that Weber draws between the observer's direct understanding of the meaning of what is happening, from the point of view of the participants (*aktuelles Verstehen*), and the explanatory understanding (*erklärendes Verstehen*) as a more sophisticated interpretation of the motives of an individual action. In order to achieve it the action must be placed by the observer in a comprehensible/conceptual sense bearing context.

Neither Waltz's structural realism, nor Alexander Wend's social theory of international politics corresponds to the principle of methodological

individualism [33]. These are holistic theories focused on considering the whole greater (more important) than the sum of its parts. The (main) parts of the whole are states interpreted as "individuals" (from the Latin *Individuum* – indivisible) and artificially endowed with individual mentality and goal-setting. According to Waltz, the structure of international relations serves as the generating concept in this case. The system itself, in fact, carries out the selection, eliminating (*sic!*) "units" that do not meet the imperatives of the system [7, p. 73]. Not much freedom of choice is left to these units themselves: it is assumed that uncertainty about the future intentions of the opposite side hinders cooperation between states, making conflict dynamics in international relations as a whole almost inevitable [7, p. 105].

According to Bogdanov, the selection of organizational forms by trial and error can be carried out by creative individuals in interaction with their collective and in constructive opposition to the pressure of the external environment, from which comes the inevitable resistance to these efforts in any case. In addition, Bogdanov insists on the reasoning equality of individuals of different statuses, not only professional scientists, in epistemic coordination (that is, anticipating the ideas of Jurgen Habermas, he takes the position of cognitional democracy): "Individuals with their statements are 'epistemologically' equal and equivalent to each other as 'central' elements of the system; statements of others for everyone, in principle, have the same cognitive value as their own statements" [34, pp. 74-75].

Empiriomonism does not require reducing the complexity of international interactions to the level of analysis of individual behavior. However, Bogdanov insists on something different: in addition to the dynamics of organizational forms, including state ones, which are subject to certain regular patterns, there is something else that can be scientifically cognizable as well. That is, what is meant here is a weak version of epistemic structural realism [35], which does not exclude following methodological individualism according to Weber. Such a (mixed) methodology is especially appropriate to use, including when studying international negotiation processes and foreign policy decision-making processes.

#### METHOD OF INQUIRY: SUBSTITUTION

In order to act, people need some (plausible, convincing) explanations "at hand" about the unknown. Bogdanov points out that at the same time,

on the basis of previous experience and practice, people usually apply not for logical conclusions, but for (phenomenological) substitution: “Substitution gives people the opportunity to understand and mutually anticipate, and based on this, to critically coordinate their actions” [36, p. 224]. Vadim Sadovsky, for whom the main thing in tektology consists in the opportunities it opens up for systems research, called Bogdanov’s substitution the prototype of the modelling method that has become so widespread in science and philosophy of the 20th century [37]. It seems that such a characteristic is not quite accurate, since in tektology we can see a predominant orientation toward (hypothetical) analog modelling.

Substitution, according to Bogdanov, comes down to one object or phenomenon being replaced for the purpose of cognition by another one, real or mental. Essentially, he means reduction of the unknown in the external environment to the supposedly better known, of the incomprehensible to the understandable, of the implicit to the definite, already encountered or mastered earlier, albeit under different conditions, completely new to the already familiar or experienced before.

In “Empiriomonism” five possible substitutions are mentioned: substituting the mental for the physical, the physical for the mental, the physical for the physical, the metaphysically indefinite for the physical and mental, and the empirically indefinite for physical, unorganized processes. A typical example of substitution in action can be found, for example, in the discussions of British politicians and experts about Global Britain, the Anglosphere, and the Indo-Pacific, aimed at supporting the modern international subjectivity of Britain in the radically changed external context of its existence after Brexit, which includes many unknowns [38]. Upon careful consideration, their arguments give quite convincing grounds for confirmation of the special interest of the British government in the emergence of such a structure as *AUKUS*<sup>4</sup>. According to Natalia Poluyan’s conclusion, the substitution method is admittedly applied whenever an observer seeks for an explanation of the observed, in which much remains uncertain. Without using it, one can only “describe” what is happening and how, but nothing can be explained. This refers both to practice in general and to science in particular. Hence Bogdanov’s conclusion about the “universal” nature of the substitution method [39, p. 29].

Substitution bases itself on a special form of causality (the relationship between cause and

effect), which includes a model of socially organized knowledge. This model is consonant with the postulates of interpretativism, making it possible to consider cause and effect on equal grounds [40, p. 512], as a result of which they act as analogous to each other, if rather perceived differently: whereas *A* is the cause of *B*, then it only means that *A* turns into *B* in a way that is analogous and borrowed from the technical transformation of coal into heat (produced by humans) [41].

The transformation in question in this case refers to creation and changes initially brought to life by active human efforts to resist nature (the external environment). The advantage of such causality is that it allows researchers to move forward and expand their understanding of abduction techniques in scientific explanations, including those which refer to international reality. If one builds a theory on such a basis, she is able to set herself the initial framework for putting forward new hypotheses in that way. Abduction as a procedure for putting forward hypotheses and suppositions (a separate way of inferencing) was first developed in the works by Charles Peirce. He treated it along with deduction and induction. Abduction implies an inference as to the circumstances that led to the result we know, which is founded on a general rule. The application of abduction as a means for making the international research methodology higher-end was proposed by Friedrichs and Kratochvil [42].

It has to be noted that the overriding effect of Waltz’s theory among contemporary Western international scholars was significantly fueled by the attractiveness of the analysis based on deductive reasoning. This (ultimately positivist) approach seemed to promise to make international relations a truly scientific discipline capable of generating logically coherent theories, dealing with how the international sphere works, and then testing their explanatory power against empirical observation. In any case, Waltz himself preferred a deduction as a reliable corollary, with the conclusion logically following from the premises. After the anthropologist Claude Levi-Strauss, he also labelled as “an inductivist illusion” [7, p. 4] the trust in the achievability of an explanation through the concentration of more and more data and the study of more and more cases. In fact, deduction is unable to provide new knowledge about reality, which is external in respect to the closed system. It can only provide additional knowledge about this closed system itself [43, p. 63]. In this sense, the deductive method deviates from the analytical orientations of materialist monism and therefore could hardly be the main one for Bogdanov.

Tektology allows to get a more differentiated picture of the systemic organization of the world on the

<sup>4</sup> A trilateral alliance formed in 2021 by Australia, the United Kingdom and the United States.

basis of structural realism, since its author fully took into account that the complexity generated by human interactions requires a transformational approach to the structure instead of its reification: “Reality can greatly depend on which side the observer is on, and what is true on the one side, is far from being the same on the other <...> Thus structural sciences can incline us to the dangerous illusion about reality as a structure that can be managed and controlled. But in order to clearly understand our situation, we must learn to follow with one eye our perceptions and theoretical constructions (mental in Bogdanov’s terminology), and with the other – the (physical) reality surrounding us” [44, pp. 445-446].

### CONCLUSION

The present study has shown that in the methodology of structural realism, according to Alexander Bogdanov, a harmonious and relevant combination has been found of activity-based materialist monism (correlating the concept of matter with collective human activity), epistemological constructivism (in which knowledge is recognized as a necessary part of autopoiesis processes), and adherence to individualist doctrine in determining the scope of consideration for a scientific problem in social sciences. Such a complex combination nevertheless acquires a coherent logic and meaning based on the idea of Bogdanov’s universal substitution

and in the context of the scheme of systemic causality he proposed, in which one organizational social state follows from another one not because of objective necessity, but because people strive for it and can achieve the desired transformation once having come together in the creative process.

In this article, the idea has found confirmation about the widely recognized low explanatory power of Kenneth Waltz’s neorealist theory being due to the omission by both the author himself and, moreover, his followers of questions related to the philosophy of cognition. Consequently, his theory did not realize all the methodological potencies inherent in it initially, since in the process of its development, and especially in the interpretations of its followers, it underwent a radical tilt in the positivist direction. As a result, realists in international relations started paying excessive and overweighted attention mainly to external material structural moments. While trying to further develop the theory of world politics in Russia, it makes sense to take such experience into consideration.

Tektology, focused on the phenomenological variety of the philosophy of Marxism, deserves not the usual routine mention in the first lines of the opuses of Russian international theorists as the forerunner of a later systems theory, but a return to the beginning of its close study. With systems analysis in the social sciences, in particular, an observer problem emerges, which Bogdanov and Luhman developed effectively, although from different angles.

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