

УДК 159

## General Organization Theory

**Yuri N. Belokopytov\***

*Siberian State University of Technology  
82 Mira prospect, Krasnoyarsk, 660049 Russia*

Received 23.05.2013, received in revised form 16.06.2013, accepted 26.06.2013

---

*The article is devoted to the origins of the new postneoclassical paradigm. The basis of the modern foundation of synergetics appearing was the scientific work of A.A. Bogdanov 'Tectology'. For the first this study appeared in Russia and surpassed the Western scientific thoughts in the many decades. The following areas are reflected in the Russian study: the systematic approach, the cybernetic approach to synergetics as the science of self-organization of various systems. They appeared much later in other countries. A.A. Bogdanov introduced new concepts in the self-organizing such as non-linear system, the dynamic equilibrium attractor and revealed their role in the organization. Particular attention is paid to philosophy, dialectics in particular. Specific features of the similarities and differences of the two approaches in thinking are allocated.*

*Keywords: a new paradigm, world view, 'Tectology' by A.A. Bogdanov as a source of new thinking, organization and discipline, methodology and system Western and Eastern thinking, non-linearity and dynamism, synergy and dialectic, the similarities and differences, self-organization and development.*

---

“Synergy” translated from the Greek means a joint or coordinated action. Synergy is expressed by “ $2 + 2 = 5$ ” (Goncharov, 1998: 122). In other words, the synergy leads to multiplication (amplification) of the final result. It is said, that it is “exploring the relationship between elements of the subsystem through the exchange of flows of energy, matter and information in the object and the environment” (Lebedev et al, 1998: 34). It should be borne in mind that if the subsystem is completely consistent in its behavior, it increases the level of self-organization even larger systems.

V.S. Kapustin precisely noticed on this occasion: “Now, at the turn of the century, it can be said with confidence that we almost came to

the area of major paradigm change in the scientific world, and this time they mainly affect the science of wildlife and many of the Humanities” (Kapustin, 1997: 96-97). The scientist regrets that being originated in Russia the theory of self-organization comes back to us from Europe. We are essentially talking about science Tectology and its founder A.A. Bogdanov. It was this science which was the source of modern natural science of synergetics.

The organization is the essence of both the living and the nonliving nature. Therefore A.A. Bogdanov restricted any activity to the organization. According to him humanity has no other activities than organizational one, there are no other problems, other points of view on

life and the world, except for organizational. A.A. Bogdanov tries to create a so-called monistic conception of the Universe. He affirmed: ‘The Universe – is endlessly unfolding fabric of the various types and levels of organization (complete lack of organization does not happen – this concept does not make sense). All these forms of mutual struggle and mutual plexuses form a continuous and unbroken global organizational process’ (Koritskiy et al, 1990: 17). In turn, the scientist believed, that the disorganizational activity is the particular case of the organizational activity.

A.A. Bogdanov attached the importance to the new methods of science. He related all of the methods to organizational, and they, in his opinion, have a universal character both in inanimate nature, wildlife, and in the psychic world (Lytov, 1997: 150-152).

Researcher B.V. Lytov conducted the philosophical analysis of tectology and believed that this science ‘allowed to apply the universal methods of organization to the phenomena of nature, society and human thought and gave the opportunity to study the general regularities inherent in the material and ideal world much deeper’ (Lytov, 1997: 148). And then he continues the argument about its meaning. ‘The emergence and development of tectology is the event of the universal human scale: for the first time (after the philosophy, mathematics and logic) the subject of the study were not things, properties, processes, as it is in traditional science, but attitudes, which are the organizational, invariant with respect to forms of motion, and forms of movement of the spirit. The tectology was immediately given the status of interdisciplinary science – the first science in the XX century’ (Lytov, 1997: 148-149).

In an anthology of the Soviet management thought the approach of A.A. Bogdanov ‘noticeably stood out among the other organizational and technological approaches offered in the 20s’.

Assuming that all types of management (in nature, society, technology) have common features, A.A. Bogdanov tried to describe them in terms of a special science – organizational, and defined its subject matter, main categories and the principles of behaviour of any organizational processes.

According to A.A. Bogdanov, ‘the subject of organizational science should be the general organizational principles and laws by which the organization processes take place in all areas of organic and inorganic world, in the work of natural forces and human conscious activity. They operate in the technique (organization of things), the economy (organization of people), the ideology (organization of ideas)’ (Koritskiy, 1990: 14). We agree with this assessment and believe that this is indeed the beginning of a new vision of the world. At the same time, the priority in the research was not one of philosophy and dialectics, as all attention was given to the tectology as the universal organizational science. In his main work A.A. Bogdanov singled out the first elements, so called prototypes of the tectology and pays much attention to their description: ‘The first attempt at a universal methodology belongs to Hegel. In his dialectic he tried to find a general method for the world, and saw it not as a method of organization, but more vague and abstract, as the method of “development.” With this vagueness and abstraction the objective success of the attempt was eliminated, but in addition, as a method taken from the special, the ideological sphere, the sphere of thought, dialectics in fact was not quite universal. Nevertheless, the systematization of experience made by Hegel with the help of dialectic, surpassed all its grandeur ever made in philosophy and had an enormous influence on the further progress of organizing thoughts. Universal evolutionary scheme of Herbert Spencer and especially the materialist dialectic were the following approximations to the current formulation of the problem. This last

statement, firstly, is based on the elucidation of its organizational entities, and secondly, is in the fact that it is fully universal and embraces practical and theoretical methods, the conscious human and natural methods of nature. One another highlights and explains, it is also impossible the problem solution out of that kind of integral formulation of the question, for the part taken out of the whole can not be made whole, or be understood apart from the whole. Universal organizational science we call “Tectology”. The literal translation from the Greek means “the doctrine of construction”. “Construction” is the most comprehensive and the best synonym for the modern concept of “organization” (Bogdanov, 1989: 112).

Although A.A. Bogdanov mistakenly believed that the developed “Tectology” should replace philosophy and become a common methodological basis among all the other sciences, but “Universal Organizational Science” has not been widespread. It was criticized both fairly and sometimes unfairly for abstraction, loose coupling with the urgent problems of economic management. However, it is now recognized that A.A. Bogdanov made many valuable ideas on organization theory, cybernetics, network management techniques, that requires clarification assess of the significance of his research (Koritskiy et al, 1990: 19).

At the same time, the emergence of science tectology triggered a cascade of multiple birth (several dozen) of different systems and theories of science (Lytov, 1997: 148-149). It is necessary to note among them the general theory of systems and cybernetics, system technique and computer science, synergetics and the co-evolution theory. In addition, the ideas of tectology had a direct influence on the “organizational consciousness” for practitioners, especially management training with a modern style of thinking.

The Industrial Revolution, which was accomplished in the West for more than two

hundred years ago, has led to the discovery of new laws of nature, which could then be used for human progress. Western way of thinking is essentially analytical, and Eastern one is complex. Paradoxically, the Chinese scientists, despite their high level of civilization never know the basic laws of Newton. At the same time, they found thousands of differences in character, although the Western world uses only about thirty types.

Theoretical science can benefit from analytical thinking, but management practices are mainly based on the art of synthesis. At one time Confucius said on this point: ‘Good leadership consists of a collection of all efforts’. The results of Western analytical technologies are now available to everyone. The Eastern culture is no need to use these technologies in practice. Japanese management, Japanese officials in particular have become famous because of their pragmatic synthesis (Hofstede, 1997: 170-173).

It should be noted that in Tectology the original theory of self-organizing system is seen. V.S. Kapustin, trying to restore justice, made the great analytical scientific work concerning the origins of tectology as a science and proved that the idea of a Russian scientist A.A. Bogdanov is the first in this area of expertise. He said that ‘in fact, it is the same “order out of chaos” about which Ilya Prigogine wrote. L. Bertalanffy reformulated this idea 30 years later, but without reference to Bogdanov, and 50 years later H. Haken expressed the idea of self-organization based on the corporate behavior of nonlinear dynamical processes in open systems, and also without references to the first-mover’ (Kapustin, 1997: 100). Consequently, we are seeing in the development of organizational theory of A.A. Bogdanov the dialectics of historical and logical. At this stage, synergy emerges as a modern principle of development, which includes directions and specific aspects of science. By analogy with the dialectic

(Lenin: 298), the history of the formation of synergistic patterns of thinking coincides with the formation of the methodological foundations of synergetics.

G.G. Kirilenko, by reviewing some concepts of Anglo-American “philosophy of science”, and revealing the natural-philosophical way of thinking in the development of human knowledge, concludes that ‘the principle of unity of philosophy and special sciences involves more than the identity of their objects and methods, but just consider philosophy as a special branch of scientific knowledge, identifying its specific selection, involves a special domain of philosophical inquiry, its difference from a special study not only the level of generality of its provisions, but the choice aspect of the study, does not coincide with the subject of any specific discipline, even the very general nature. However, this approach conflicts with the natural-philosophical style of thinking and leads to its elimination, as the latter does not account for the complexity, multi-level cognitive process, based on the idea of the homogeneity of cognitive processes. So, with the disappearance of the practice of scientific knowledge is already outdated in their roles, communication method of philosophy and science, there appeared the new way of communication, based on understanding of philosophy and special studies as special branches of scientific knowledge, the specific levels of development of the world’ (Kirilenko, 1982: 112). In our point of view, this requires further philosophical understanding of some of the problems of synergetics.

Such an understanding is particularly true of the seventh element of the dialectic (Lenin: 202), where the combined processes of analysis and synthesis, is their summation. In a study of the phenomenon of “synergy” can be traced not only differences but also the general trends in the interaction of Eastern and Western thought.

This view is held by E.N. Knyazev, who noted that ‘thanks to recent results of synergy (or the theory of self-organization) there are beginning to install internal connections between the natural and human sciences, Eastern and Western worldview, a new science (the science of complexity, nonlinearity and chaos) and the old culture, science and art, science and philosophy. Synergetics is an integrative or synthetic value’ (Knyazev, 2000: 243).

All of the above acts as the basis of the hypothetical assumption that synergy could make the basis for an interdisciplinary synthesis of knowledge. This view is reinforced in philosophical studies of Ervin Laszlo, who stated that ‘today we have many highly specialized and independent research conducted by the evolution of specific entities, such as stars, butterflies, culture or identity, but have very few (if you have any) a truly universal concepts of evolution as a fundamental process’ (Laszlo, 2000: 330).

The scientist concludes further that theory ‘which attempts to unify our understanding of the transdisciplinary physical, biological and psychological phenomena that give rise to a fundamental change in our attitudes to ourselves and the world. The most fundamental premise of narrow disciplinary theories undergo subtle but significant changes. This process is described in detail in the literature on paradigms, the new paradigm is, in our view, the importance of making changes in certain assumptions about the deeper nature of the phenomena under study’ (Laszlo, 2000: 333).

A specialist in politics A. Vengerov predicted the further dialectic interaction and synergy. ‘Apparently, the new paradigm in social science methodology, among other things, whether include the dialectic method as a special synergy, and then only for certain areas, or even replace it with a fundamentally new approaches to reality’ (Venger Synergetics..., 1993: 56). In

our opinion, this was a very bold statement, but A. Vengerov is based on the fact that synergy is quite different than the dialectic materialism in its modification, and solves the problem of ontology and epistemology. In his opinion, if ‘for supporters of the materialistic modification all directions – dialectic, epistemology and logic are one and the same, but the universe “lives” on the same dialectical laws, for the synergistic worldview these postulates are not conclusive, and the dialectical unity of ontology and epistemology is not detected.

In addition, it should be admitted that many of the origins of the crisis of ideology and practice of Marxist theory, including its political and legal segment, are in the depths of the dialectic, which was based on this theory. Apparently, the materialist dialectic, with its primacy over the required random and other postulates of new knowledge under the pressure of the end of XX century and the historical experience of the exhaust is mainly cognitive and prognostic potential, at least in the social sphere. We should not forget how cleverly, though in many ways, of course, artificial, it was adapted for the hostile and sometimes genocidal policy targets in our country, especially in the 20’s and 30’s. What did it cost, for example, only one study of political inference ‘about the aggravation of class struggle as the victory of socialism’, referring to the dialectical position ‘of the struggle of opposites as a source of

development’! (Venger Synergetics..., 1993: 56) Further the scientist stopped on the differences between the underlying synergy and dialectic and brings it into a unified scheme (Venger Synergetics..., 1993: 57) .

Based on comparative analysis the scientist concludes that ‘this scheme, like any other, is rather conventional. Many positions could be supplemented. The diversity of certain provisions of the dialectic and the synergy of the characteristics of dynamic processes (development) is discussable. And these characteristics can be challenged. Nevertheless, that scheme has some cognitive value because of its clarity and structure’ (Venger Synergetics..., 1993: 57). In this case, there is the other extreme of exaggerating the capabilities of the potential synergy of the dialectic. We believe that the dialectic and synergy are complementary, each has its own subject of study.

After examining the various points of view on the subject of research, we are inclined to believe that synergies should be considered on two levels: firstly, as a method of philosophical inquiry, which serves the principle of subsidiarity to the dialectic, as currently there is a gradual and irreversible process of establishing synergy, but it can not be called an independent science, and secondly, as a dialectic methodology is directed from above, as well as the synergy integrative approach seeks specific disciplines below. They need to be considered holistically.

### References

1. Goncharov V.V. *The most important concepts and concepts in modern management*. Moscow: MNIIP, 1998. P. 122.
2. Lebedev O.T., Kankovskaya A.R. *Principles of Management*. St. Petersburg.: ID “Master and Margarita”, 1998. P. 34.
3. Kapustin V. *Management views AA Bogdanov in the light of Synergetics*. The Origins of the Russian management. Moscow: Publishing House of the “Ray”, 1997. 172 p.
4. Koritskiy E.B., Lavrikov Yu., Omar A.M. *Soviet management thought the 20s: a short name directory* Moscow: Economics, 1990. 233 p.

5. Lytov B.V. Application. *The Origins of the Russian management*. Moscow: Publishing House of the "Ray", 1997. 172 p.
6. Bogdanov A.A. *Tectology* (General Organization Science). In the 2 books.: Book. 1. Moscow: Economics, 1989. P. 112.
7. Hofstede G.H. *Cultures and organizations: software of the mind*. New York. McGRAW-HILL, 1997. P. 170-173.
8. Lenin V.I. Full. Works. Op. V. 29. 782 p.
9. Kirilenko G.G. *Crisis methodological foundations of bourgeois «philosophy of science»* (natural-philosophical way of thinking and its modern version). Moscow: Mosk. University Press, 1982. P. 112.
10. Knyazev E.N. *Synergistic call culture. Synergetic paradigm*. The variety of quests and approaches. Moscow: Progress Tradition, 2000. P. 243.
11. Laszlo E. *Grounds transdisciplinary unified theory*. Synergetic paradigm. The variety of quests and approaches. Moscow: Progress Tradition, 2000. 536 p.
12. Venger A. Synergetics and policy. *Social Sciences and the present*. 1993. № 4. P. 55-69.

## **Всеобщая организационная теория**

**Ю.Н. Белокопытов**

*Сибирский государственный технологический университет  
Россия 660049, Красноярск, пр. Мира, 82*

---

*Статья посвящена истокам возникновения новой постнеклассической парадигмы. Основопологающим фактором в возникновении современной синергетики является научный труд А.А. Богданова "Тектология". Это исследование впервые появилось именно в России и на многие десятки лет опередило западную научную мысль. Кроме того, в российском исследовании были заложены следующие направления: системный подход, кибернетический подход, синергетика как наука о самоорганизации самых различных систем. Эти направления исследования появились за рубежом гораздо позже. В самоорганизации А.А. Богданов вводит новые понятия, такие как нелинейная система, динамическое равновесие, аттрактор, и раскрывает их влияние на организованность. Особое внимание в статье уделено философии, в частности диалектике. Выделяются характерные особенности сходства и различия двух подходов в мышлении.*

*Ключевые слова: новая парадигма, картина мира, тектология А.А. Богданова, источник нового мышления, организация и организованность, методология и система, западное и восточное мышление, Л. Бергаланфи и Г. Хакен, нелинейность и динамичность, синергетика и диалектика, сходство и различия, самоорганизация и развитие.*

---

