Бажанов Валентин Александрович – заслуженный деятель науки РФ (2004), доктор философских наук (1989), профессор (1991), действительный член Academie Internationale de Philosophie des Sciences (https//lesacademies.net).
Родился в 1953 г. в Казани.
В 1975 г. с отличием закончил Казанский университет и прошел путь от ассистента до профессора кафедры философии этого университета.
С 1993 г. работает в филиале МГУ в Ульяновске (с 1996 г. в Ульяновском университете).
Сфера интересов: история и философия науки, эпистемология, история русской философии.
Автор более 550 научных трудов, опубликованных в России и за рубежом (Австрия, Бразилия, Великобритания, Германия, Индия, Испания, Италия, США, Швейцария и т.д.).

Личная страница в Интернете:
http://staff.ulsu.ru/bazhanov

Современная когнитивная наука претендует на то, чтобы стать символом XXI столетия, подобно тому как атомная физика явилась символом первой половины и середины XX века, а информационные технологии – символом его последних десятилетий. В настоящей книге показывается, что современные когнитивные исследования (особенно в той части, которая принадлежит нейронауке) ведутся в контексте кантианской программы: мозг, культура и социум оказываются пронизанными системой обратных связей в том смысле, что культура и социум в целом вовлечены в процесс формирования мозга и его познавательного потенциала, а в свою очередь мозг во многом определяет контуры и культуры, и социума.

ISBN 978-5-88373-572-0
9 785883 735720

издательство
КАНОН-ПЛЮС
НЕЗАВИСИМЫЙ АЛЬЯНС

В.А. Бажанов

МОЗГ – КУЛЬТУРА – СОЦИУМ

В.А. Бажанов

МОЗГ – КУЛЬТУРА – СОЦИУМ

Кантианская программа в когнитивных исследованиях

The Brain – Culture – Socium.
Kantian Research Program in Cognitive Science

Valentin A. Bazhanov

Ch. 1. Subject of Cognition from the Angle of Modern Socio-Cultural Neuroscience
Ch. 2. Socio-Cultural Revolution in Neuroscience: Revival of Kantian Research Program
Ch. 3. Socium and the Brain: Concept of Biocultural Co-Constructivism

Part 2. Implementations of Kantian Program

Ch. 4. Neurosociology
Ch. 5. Neuropolitics
Ch. 6. Neurotheology
Ch. 7. Neuroethics
Ch. 8. Music from the Angle of Modern Neuroscience
Ch. 9. Activity Approach and Contemporary Cognitive Research
Ch.10. Modern Neuroscience and Education

Part 3. Adjacent Problems

Ch. 11. Psychologism or Antipsychologism? The Question Still Open
Ch. 12. Has Cultural Neuroscience Already Reached the Post-Non-Classical Stage or is it Still Non-Classical Branch of Psychology?
Ch. 13. Transdisciplinarity Type of Scientific Revolution
Ch. 14. Realism or Antirealism? Third Line Idea in the Philosophy of Mathematics
Ch. 15. Kantian Motives in Logic and Philosophy of Science. The Idea of A Priori and Empirical Knowledge Unity

Modern cognitive science pretends to be the symbol of the XXI century - just as atomic physics was a symbol of the first half and middle of the twentieth century, and the information technology of its last decades. In this book, we dare to claim that modern cognitive studies (especially in the part that belongs to the neuroscience) conducted in the context of the Kantian program. The brain, culture and society are pervaded by a feedback loops in the sense that culture and society as a whole are involved in the process of brain formation and its cognitive potential, and in its turn the brain to large extent determines the contours of both culture and society. As a result, a palette of interconnected and interdependent "brain-culture-society" systems emerges, each element of which influenced by other elements. In order to comprehend the nature of these systems we should use a combination of reductionist and holistic, analytical and synthetic methods, representations adopted by naturalism and sociologism, illustrating the intertwining of biological and the social trajectories of their development, a kind of "sociologization" of biology and the "biologization" of sociology. Thus, these systems are different - referring to the civilization in the "West" and the "East", and in general, within each sociocultural community, they differ in one way or another.

In the book, these positions demonstrated on the examples of neurosociology, neuropolitology, neuro-ethics, neurotheology, neuropedagogy and musical creativity.

The rapid development of cognitive research and the empirical analysis of their achievements raises philosophical problems of a general nature: what is the essence of the activity approach, what is the correlation between psychologism and antipsychologism, realism and antirealism in the foundations of mathematics, is it permissible to assert the emergence of transdisciplinary-type scientific revolutions. We propose approaches to solving these problems.

For anyone who is interested in the contemporary problems of the development of science and monitors the progress of non-classical philosophical thought.

Part 1. Conceptual Foundations

Chapter 1. Subject of Cognition from the Angle of Modern Socio-Cultural Neuroscience

An attempt to reassess from the philosophical standpoint the latest social and cultural neuroscience results done. These results enables to put forward the idea that traditional comprehension of subject of cognition interpretation should be reconstruct radically. We must move from its universalistic interpretation mostly manifested in transcendentalism to interpretation explicitly taking into account socio-cultural context of subject’s activity, and sometimes its biological background.

Chapter 2. Socio-Cultural Revolution in Neuroscience: Revival of Kantian Research Program

Analysis the impact of social and cultural revolution in neuroscience for the modern epistemology presented. The paper claim that this revolution in certain sense takes place in the context of Kant's research program, and urge to clarify the content of some key epistemological concepts. Moreover, it reveal the crucial role of activities based approach for the analysis of the cognitive processes. This fact allows put forward the idea of the activities based type of transcendentalism. We assume that the Kantian research program in the philosophy of language do not directly relate to the genesis of linguistic structures, and should be limited by the scope of their use as a tool of knowledge acquisition.

Chapter 3. Socium and the Brain: Concept of Biocultural Co-Constructivism

In the context of biocultural co-constructivism, the article analyzes the features and results of interaction between society, culture and the brain. We show that society, culture and the brain form an integral system, each element of which actively reconstructed under the influence of other elements, and at the same time determines the nature of their changes, which allows us to claim the existence of the "social brain". Non-biological and non-genetic - sociocultural by its origin and nature - factors have not only a noticeable, but often decisive impact on the functions of neural structures, restructuring of the genetic content and modes of the brain activity. Moreover, sometimes they determine the very existence of such structures and formations even at the macroscopic level. The trajectories of natural and cultural development, which symbolize co-creation, co-generation of meanings, intersect and form a system that ensures their active interaction and determination of each other. From the cognitive point of view, culture serve as a sort of prism that sets the view of the world angle and the modes of its assessment, a filter that enable to weed out those fragments of reality that do not fit into the "categorical grid" of culture. The idea of the transcendental, “cognitive-universal” subject of cognition due to experience deep reassessment under the light of the new empirical material from cultural neuroscience. The subject of cognition from the standpoint of biocultural co-constructivism turns out to be “tied” to a concrete situation that characterizes the peculiarities of the relationship between society, culture and the brain “here and now”. The naturalistic turn, to which the modern neuroscience gives a strong impetus, also speaks in favor of a revision of the rigid standpoints of logocentrism and the prospects for the de-antropologization of knowledge.

Part 2. Implementations of Kantian Program

Chapter 4. Neurosociology

The goal to argument that the intensive development during last decades of cognitive researches and neuroscience (especially historico-cultural neuroscience) resulted in the formation of neurosociology pursued. Neurosociology as a branch of social science in fact follow the Kantian research program in its progressive mode. This means that the analysis of the mechanisms of development and features of different societies and socio-cultural structures under certain conditions should necessary consider the profound and direct impact (and/or correlation with) of certain neural structures traits, which in their turn are transform according to the socio-cultural features of various societies and certain culturally autonomous social groups. Thus, due to the spirit (but not the letter) of the Kantian a priori idea social cognition to a certain extent depends of preset features (ontogenetic and/or by the current activity formed) retrofit neurobiological structures. This tendency reflect once again emerging naturalistic approach in contemporary social thought. We introduce the notion of social psychologism, which summarizes the cognitive aspects defined by epigenetic features of certain social communities.

Chapter 5. Neuropolitics

Abstract. Progress in recent years of cognitive studies revealed empirical neuroscience data, according to which certain neurobiological structures can influence the formation of various political beliefs and / or promote a particular socio-political activity. It gave an impetus to the becoming of neuropolitical researches with the goal of analyzing the impact of neurobiological structures in the sphere of political activity. Before start of neuropolitical studies as a relatively independent branch of socio-political sciences for almost a hundred years this impact this kind of phenomena failed to recognize. Meanwhile a priori type of certain socio-political views and actions revives the idea of Kant's a priorism, in current situation represent a new shape and meaning. The author put forward argument to support this claim.

Chapter 6. Neurotheology

We ponder over the phenomenon of religion from the standpoint of the of modern neuroscience progress. We claim that the emergence and expansion of different religions as well as religious activity, happened due to external (social and cultural) and internal (neurobiological) reasons. The results of neuroscience research support the ontogenetic sources and foundations of religion, which are to flourish in a certain socio-cultural atmosphere. When social item is growing the religion gain greater capacity to carry out further expansion. Within the society religion play an effective role of socialization, being the gluing factor and regulator of social relations. From the standpoint of social psychology and cultural neuroscience, the emergence of religion conceived as the result of the process of human adaptation to the environment, with a result in which both neurophysiological and socio-cultural factors intertwined. The main reason is that the chance to survive of an individual in an environment that harbors a host of dangers increases significantly if he is a member of a particular social group and, therefore, can expect in difficult situations backing by its members. The increase in the plasticity of brain structures and their complication, expressed in the increase in brain size, occurred in response to requests on the side of socio-cultural factors. The more numerous the

social group was, the more it acquired the greater number of degrees of survival. The achievement by a certain community of the dimensions of a "big society" naturally attracted the expansion of the areas of religion. The arguments are presented in favor of the claim that if we take into account empirical basis of modern neuroscience, then the nature of religion imply the factors of its genesis by natural (and in this sense predetermined, a priori) features of the human brain (the ontogenetic foundations of religiosity), and features of supra-individual, cultural, and activity factors (regulation of intragroup relations).

Chapter 7. Neuroethics

This chapter deals with the current state of neuroethics, which can be defined (due to the concept of T. Kuhn) as pre-paradigmatic, characterized by quest for systematic theory and basic principles, criteria for analyzing and interpreting the results of measurement procedures. Among the key questions that this theory should cover, the problem of the neurophysiological foundations of morality especially highlighted. We claim that the search for such grounds lies largely along the continuation of the “discussion” of the Kantian rationalistic tradition of treating morality, and the standpoint of D. Hume, which stresses the emotional bases of moral actions. In the very focus of the article is the state of the second level theories (metaethics) in neuroethics: the idea of the emotionally-intuitive foundations of moral judgments, and criticism of J. Green's deontological theory of honesty and dishonesty, and M. Hauser and J. Mikhail's “Universal Moral Grammar”. Particular emphasis placed upon comprehension the nature of moral judgments and the influence of feelings of disgust on moral decisions. It speak for the fact that there is a close interaction between emotional-sensory and rational in moral judgments. The results of neuroethical studies pondered over through the prism of Kantian motifs associated with the dilemma of psychologism and antipsychologism. An attempt made to analyze the idea of a priori under the angle of current experimental data related to the neurophysiological foundations of morality.

Chapter 8. Music from the Angle of Modern Neuroscience

The article has the goal to comprehend the latest achievements in the subfield of neuroscience – neuroaesthetics, which analyzes the nature of music and musical creativity under the angle of ontogenetic features of the human brain. Numerous examples reveal that the key ideas of neuroaesthetics correspond to the spirit of Kantian apriorism, reassessed in modern terms of cognitive neuroscience.

The idea of the common traits of the neurobiological foundations of natural languages and the musical-speech continuum confirmed by the data of neuroscience studies on the colocalization of brain regions responsible for linguistic and musical functions. Since music traditionally related to physical activity, dance, the idea of the mirror neurons of the brain role in perception of the rhythm due to musical sounds in the modalities of consonance and dissonance is expressed.

The concept of a music module that correlates with the cognitive neurostructure proposed. In its formation certain cultural and ethnic features of the environment where it is generated and continues to be generated are involved. An assumption is made about the nature of the difference between the Western (homophonic-harmonic, and polyphonic) and Eastern (monodic) musical traditions. This difference can be due to the predominance in the West of analytical, and in the East, holistic thinking, which relates to the differences in the activity of certain areas of the brain.

Chapter 9. Activity Approach and Contemporary Cognitive Research

The main goal of this chapter is to reveal the essence of the activity approach in psychology and provide its interpretation, which inforce by modern cognitive science. This essence is that the activity igiven more fundamental ontological status than the fact of the existence of individual objects; knowledge must be analyzed from the standpoint of generating its structures and activity features. It is shown that neuro- and biological factors of life factors are not just closely intertwined with the socio-cultural factors and activity of its existence, but are deeply interdependent. In terms of cognitive activity this allows to introduce the concept of the activity type transcendentalism.

Chapter 10. Modern Neuroscience and Education

Vigorous development of neuroscience in the early twentieth century, which is commonly regarded as a scientific revolution, has spawned many disciplines (neurosociology, neuro political science, neuroeconomics, etc.). Now the outlines of neuropedagogy ("educational neuroscience", "neuroeducation") are emerging, which dispels some established myths in education, allows deeper understanding of the features of the educational process, and at the same time justifies certain pedagogical methods and techniques at the neurophysiological level. This chapter analyzes some problems of education from the perspective of modern neuroscience, as well as suggests specific recommendations for implementation in the practice of education.

Part 3. Adjacent Problems

Chapter 11. Psychologism or Antipsychologism? The Question Still Open

This chapter deals with the dramatic opposition of psychologism and antipsychologism. Due to the evident success of classical branches of mathematical logic in XX century psychologism was eliminated for its conceptual insolvency. However, non-classical logics and recent neuroscience vigorous development has again brought psychologism again to the proscenium of science. We are making attempt to analyze the reasons for the revival psychologism and vistas to preserve its position as one of modern cognitive science leading conceptions.

Chapter 12. Has Cultural Neuroscience Already Reached the Post-Non-Classical Stage or is it Still Non-Classical Branch of Psychology?

We provide arguments in favor of achieving by cultural neuroscience of nonclassical status (not post-non-classical as claimed by I.V. Vachkov and S.N. Vachkova) of psychology. We show that such an assessment can rationally explain the low degree of reproducibility of certain of psychological experiments. It has been suggested that a key role in cultural neuroscience achieved the status of the non-classical science due to research methods, which make presuppose the fundamental principle of non-classical science - the principle of relativity (including the principle of relativity to the means of measurement). It is shown that in the field of research related to cultural neuroscience, to increase the degree of reliability of the results it is important to not be limited to European habitat collection of empirical data, and need to significantly expand this area by the analysis is not fully covered by the analysis of the population of non-European territories. We judge that in the field of research related to cultural neuroscience, might significantly increase the degree of reliability and importance of the results when the analysis will be to not be limited to European range of empirical data collection. Thus, we need significantly expand this range by the analysis of not fully covered by the current analysis of non-European territories population.

Chapter 13. Transdisciplinarity Type of Scientific Revolution

This chapter claims that along with scientific revolutions in T. Kuhn sense the transdisciplinary type scientific revolutions exist. These revolutions manifest themselves in changing of style of reasoning which enables this style to conquer vast areas of science due to cognitive schemes. Such schemes provide means of researches synthesis into certain wholeness. New type of reasoning imply new types of objects and new modes of explanation. Scientific practice based upon new style presupposes multidisciplinarity, creation of new scientific institutes and thus has visible socials impact.

Chapter 14. Realism or Antirealism? Third Line Idea in the Philosophy of Mathematics

This chapter deals with ordering of various versions of mathematical realism (Platonism) and antirealism (nominalism) and vistas of synthesis of mathematical realism and antirealism in the form of emergence of ‘third’, medium line are outlined on the ground of triple determination idea of mathematical reality (mathematical objects).

Chapter 15. Kantian Motives in Logic and Philosophy of Science. The Idea of A Priori and Empirical Knowledge Unity

Kant insisted on the inherent unity of a priori and empirical elements of cognition. To what extent further progress of philosophy and exact sciences confirmed (or modified) original Kant ideas?

I'm inclined to judge that apriorism in its modest version do not contradict to modest type of empiricism. Real practice of logical and mathematical reasoning provides pry conjunctions of a priori and empirical elements of cognitive processes. We can find their harmonic combinations of mentioned standpoints and thus to confirm the validity of Kant idea related to inherent unity of a priori and empirical elements within contemporary philosophy of science. Apriorism along with empiricism contain powerful heuristic potential.