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**MENTAL ASPECTS OF THE PERSON'S SUBJECTIVITY IN THE  
CONTEXT OF DECISION-MAKING PARADIGM**

Maret M. Betilmerzaeva (a, b) \*, Makhmud M. Kerimov (b), Lyda U. Kurbanova (b) Radima  
Kh. Denilkhanova (b), Larisa R. Elbieva (b)

\*Corresponding author

(a) Chechen state pedagogical university, 364068, Kh. Isaev Avenue, 62, Grozny, Russia

(b) Chechen state university, 364024, A. Sheripov Street, 32, Grozny, Russia,

***Abstract***

A person as an independent individual and as a member of a social group is an object of investigation of multiple sciences. In recent decades, a number of interdisciplinary fields of knowledge have been developed, which, by adapting the methodology of various sciences, make an attempt to deepen the knowledge about a person as a physical, spiritual, psychological, economic, political, and social being in general. Philosophical understanding of a person as a social being in the research process cannot be productive in isolation from social reality, which has its own structure. One of the most important structural elements of social reality is social space and social time, the dialectical interaction of which constructs a particular cultural-historical continuum. A person becomes the subject of this continuum in cognitive process, the content of which is determined by individual experience, social environment, and genetic potential. Human subjectivity is a unique form of expression of human self, the productive study of which requires the return of a subject of analysis to a certain space-time continuum in which the history of a subject (individual or social community) proceeded. This proposition is recognized.

The main thesis of the authors is that the subjectivity of a person as a biopsychosocial being is formed in a constant decision-making process. The novelty of our approach in the framework of the above mentioned aspect is the explication of mental peculiarities of decision making in the newest paradigm of cognitive sciences.

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**Keywords:** Subjectivity of a person, mental aspects, cognitive science, cognitive paradigm.



## 1. Introduction

At the beginning of the research, it is necessary to determine the content of the terminology used in our work. Cognitive science is “an area of interdisciplinary research that investigates cognition and higher cognitive functions with the help of cognitive information processing models”. More precisely, it is “the field of interdisciplinary research of knowledge as the acquisition, storage, transformation and use of knowledge by living and artificial systems” (Falikman, 2015), the science of knowledge acquisition and application. As one of the experts of cognitive sciences, George A. Miller, noted, that their emergence is reasoned by the idea of a single science, “which would explore how the human mind represents the world and processes information,” and which functional structures of the human brain reflect these possibilities (Miller, 2005).

Cognitive science is occurred due to the invention of a computer, the development of experimental psychology and the theory of generative grammar. The basis of cognitive science is presented by six sciences (“cognitive hexagon”): computer science, psychology and linguistics, which represented the main field of interdisciplinary research of knowledge during the first decades of the formation and development of cognitive science; philosophy, anthropology and neuroscience, the main directions of interdisciplinary research of the beginning of the XXI century (Miller, 2005; Falikman, 2015).

During the first decades of its development, cognitive science attracted the computer metaphor of cognition, which interpreted human cognitive processes as processes of information processing and transmission, carried out by the brain. Subsequently, there was an “intraparadigmatic shift from information processing models to the study of brain substrate of cognitive processes and functions caused by the development of new methods for recording brain activity”, which attracted behavioral economics and aesthetics into cognitive science (Falikman, 2015).

Over the past decades, in connection with the inventions of various diagnostic methods (methods of functional magnetic resonance tomography, magnetic encephalography, transcranial magnetic stimulation), the content of the paradigm of cognitive science has changed (Falikman, 2015). New methods made it possible to visualize the picture of the working brain in solving various cognitive tasks.

Moreover in neuroscience, in which neural processes are investigated on the basis of original scientific technologies, fundamentally new areas of interdisciplinary research have occurred. For example, transcranial magnetic stimulation (TMS) makes it possible to test cause-and-effect hypotheses about the contribution of certain areas of the brain to the performance of cognitive tasks through the influence of magnetic fields directly in the course of problems solution. The active use of the TMS method led to the development of a new research field of cognitive science - “neuroeconomics”, which focused on the brain mechanisms for making choices and decisions not only related to economic, but also moral aspects (Falikman, 2015).

The term “neuroeconomics” defines the interdisciplinary field of neuroscience and economics, the subject of research of which is the processes of brain interaction with its external environment in order to produce economic behavior (Slanevskaya, 2012). In a broad sense, according to V.A. Klyucharyov neuroeconomics is the neurobiology of decision-making (Klyucharyov, 2011). The emergence of neuroeconomics, or the neurobiology of decision-making, was the result of neuroscience achievements, which allowed revealing the biological basis of decision-making.

As the author (Bogdanova, 2018) notes, “at the present stage of the development of cognitive science, which is called neural network or connectionist, the determination of consciousness and cognition is associated with the regulatory participation of culture in the functioning of consciousness and human cognition”. The cognitive system finds expression in an isosceles triangle, the vertices of which are represented by the brain, the body, external environment or culture.

Consciousness is “the ability of the ideal reflection of reality, the transformation of the objective content of an object into the subjective content of human spiritual life” (Spirkin, 1972). Consciousness is explicated “as a complex phenomenon, not reducible to the anatomy or neurophysiology of the brain”, which is being formed at the junction of natural and cultural components. One of the supporters of connectionism, D. Dennett, is convinced of the equal causation of consciousness by nature and culture: “To the great extent human consciousness is a product of not only natural selection, but also cultural evolution” (Dennett, 1991).

In addition to consciousness, a mental layer is distinguished in the structure of the human mind (Betilmerzaeva, 2017), the essence of which is presented by the fact that it correlates the individual experience of a person with a collective representation. Human society exists in specific conditions that determine the formation and development of individual consciousness and determine the historical diversity of human culture. Human being in all its aspects can be represented as a single cultural matrix.

In the structure of sociocultural matrix, as the author (Betilmerzaeva, 2016) points out, the semantic mechanisms of mentality transmission present cult, myth, religion, tradition, language, values, norms, fashion, physical facts (such as material things, processes, phenomena), which on the one hand, present the mentality, and, on the other hand, they determine its nature. V.Kh. Akayev (Akayev, 2017) correctly noted that “folk culture is concentrated in the minds and hearts of people”. The study of folk culture and its mentality requires an appeal to a lively conversation, sayings, legends, laugh, revealing the soul of the people. Along with the mentioned forms of culture, in which mentality finds its expression, the decision-making process in a particular ethnoculture is characterized by the same mental features.

The life of a subject is represented by a series of daily decisions on global and local, significant and every day, total and personal events.

Philosophers, as noted by the authors (Radchenko & Rang, 2012), understand the system quality of a subject under the concept of “subjectivity”, the presence of which makes a subject what it is. The human subjectivity is characterized by the implantation into social reality in a certain space-time continuum. A person is not a passive element of the system. A person actively interacts with other system elements, organizing them around him. A person's subjectivity is found in the process of consciously unfolding his cognitive abilities (Betilmerzaeva, 2014)

## **2. Problem Statement**

The problem of the study is in the need to understand mental and cognitive aspects of formal and content reasons of social activity of a subject in various social decision-making processes, which is determined by the increasing systemic threats of falsification of historical realities and (or) reversion to historically significant periods of subject's tragic (stressful) experience in the situation of certain social cataclysms.

### 3. Research Questions

The subject of the research is mental and cognitive aspects of human subjectivity, which are investigated in the context of basic neuroeconomic neural model of decision theory. The model is about “a sensory, motivational, cognitive or any other signal arrives at the input of a neural network and at the output we get the result of comparison in favor of the most optimal solution” (Bogdanova, 2018). Researchers identify a number of stages in the decision-making process: the formulation of a problem and idea representation about the purpose and the context of decision (1); the determination of the value of choosing one or another behavioral alternative (2); the comparison of alternative solutions and selection of the best one (3); the processing of the results of chosen action and evaluating the effectiveness (4); the updating of the information stored in memory for the most effective further actions (5).

Neuroeconomic studies are primarily aimed at the investigation of the stage of the determination of subjective value of alternatives, where the assessment and choice of action takes place. Classical neuroscience has shown that there are parallel systems for the evaluation of the value of behavior and, consequently, behavior is determined by the system of assessment used at a given time. As the most important systems for the assessment of utility, the authors (Bogdanova, 2018) highlight the classic Pavlov conditioned reflex and the concept of purposeful behavior. The Pavlov's classical conditioned reflex (stimulus - response) captures the moment of automatic processes and the adaptive value of behavior is genetically encoded and fixed. Purposeful behavior is reasoned by calculated actions and has greater flexibility. In the future, purposeful behavior can transform into a habit and turn into automatism.

Thus, in the decision-making process, the Pavlov conditioned reflex, automatisms, and purposeful behavior are involved, which can take concerted and unconcerted actions. Making the best decision requires the dominance of purposeful behavior, but often the triumph of habits or automatisms is observed. The question of the nature of irrational human behavior is still relevant.

The researcher Daniel Kahneman, Nobel Prize winner (1973), suggested the existence of a dualistic model for decision making: a) fast, automatic, or unconscious, and b) slow, focused, voluntary. The authors Bogdanova, 2018 connected the proposed three biological value determination systems with the model of D. Kahneman, and an active study of the interaction of rational and emotional systems within the framework of Kahneman dualism is currently performing.

In the study of D. Kahneman, it is important that “when making a decision, the available information is estimated using different neural networks -“cognitive”and“emotional”” Bogdanova, 2018. The final decision is reasoned by the difference in the results of the comparison of cognitive and emotional assessments. The researchers note that the irrational behavior of a person is explained by the activity of the emotional zones of the brain, which have several advantages over cognitive ones.

Neuroeconomic studies of the interaction of systems of involuntary and voluntary information processing during the process of decision-making turned out to be applicable to the study of decision-making processes related to the system of moral norms. The research in this area made it possible to identify two competing systems of the normative (“thou shalt not kill”) and utilitarian approach (“choose what is better”) to morality.

It is essential that, a person as a social being is involved in the process of social interaction. Human behavior is regulated by social norms. A person experiences a constant social influence, determining the

formation of his personal status. The decision-making process is determined by the biological, psychological, spiritual, and social systems that, in interaction, form the identity of a person

#### **4. Purpose of the Study**

The purpose of the study is to determine mental and cognitive aspects of human subjectivity in the decision-making paradigm.

#### **5. Research Methods**

The theoretical and methodological basis of the article is presented by dialectic principles of cognition of reality, regarding the subject of consideration on the basis of the principles of objectivity, universal communication and development. The methods of phenomenological and system analysis of key concepts of the proposed research are also used.

#### **6. Findings**

Social space and social time are social categories that are organized by human experience, playing a fundamental role in social organization and occupying a certain position in social hierarchy. However, as French researcher P. Bourdieu writes (Bourdieu, 2007), social space is a complex of objective relations of forces imposed on everyone who is in the cycle of social events, regardless of the immediate intentions of a subject.

The author shares the position of P. Bourdieu, who interprets social space as a structure of social positions that are in a state of interaction. The existing properties that organize social space present “different types of power or capital”. The properties acquire power over a subject, drawing it into the cycle of events and actions, and are objectified in economic, cultural, social and symbolic capital (Bourdieu, 2007). In the context of social field, represented by spatial multidimensionality of subject positions, the criterion for assessing the content of society is the total amount of capital and the relative weight of a particular type of capital in the practice of expressing an individual or ethnic group. For example, economic capital reflects the economic activities of a company; cultural capital reflects all the cultural resources available to a subject, such as institutionalized, objectified, and incorporated (Rossel & Collins, 2006).

Social capital, according to P. Bourdieu, is “the resources based on kinship relationship and relations in a group of membership” (Bourdieu, 1986). The American sociologist James Coleman interprets social capital as a potential of mutual trust and mutual assistance (Schwery, 1996), contributing to the socialization of a subject. As the researchers point out the understanding of the symbolic capital of P. Bourdieu is identical to the interpretation of social capital by J. Coleman, so it is associated with a trust that facilitates an act of social exchange (Nestik, 2004). In most cases, such intangible aspects as prestige, reputation and honor belong to symbolic capital (Jenkins, 1992).

Time, as well as space, is one of the basic aspects of social interaction. Time, as well as space, fixes social life. Time, as the author (Sztompka, 1996) notes, is “not only a universal dimension of social change”, but is also “its foundation, a constitutive factor”. P. Sztompka (Sztompka, 1996) distinguishes two kinds of time: quantitative and qualitative time. Quantitative time serves as “a kind of external framework for measuring events and processes,” helping a person to navigate in social space. Qualitative time is reasoned

by the “nature of social processes,” and in terms of its type, qualitative time may be longer or shorter. When we talk about the quantitative measurement of time, it is chronological in a certain framework of years, centuries, millennia. Qualitative time does not always coincide with the usual time boundaries and its course and perception is determined by the content of social events experienced by subjects.

The concept of social time formed the basis of the historical concept of the French researcher F. Braudel (Braudel, 2018), who presented the “historical time” of different speeds: the short time for changing events, the time of average duration and the time of long duration.

The study of the process of formation of subjectivity within the framework of historically determined social space and social time provides information about mental and cognitive characteristics of a subject.

The subjectivity of a person is reflected in active process of self-perception and existential place of a person. The content of reflection over its inceptions, in opposition and in interaction with the environment, characterizes a subject as a carrier of certain information. A subject is realized in a series of everyday decisions about global and local, significant and every day, total and personal events. The adaptation of cognitive terminology to the study of social processes reveals the deep logic of the formation and development of subjectivity as a phenomenon. The phenomenality of subjectivity is reasoned by the control over oneself, decisions and intersubjective interaction.

The subjectivity of a person is reflected in his social behavior, which is structured and regulated by a combination of various factors determining human existence: genetic potential and his human environment. Genetic potential determines hereditary opportunities which manifest in the process of education and training. The environment is presented not only by biological living conditions, but also by social environment, contributing to the disclosure of genetic potential of a person.

During the process of education and training, the conformity of individual qualities of a person to certain sociocultural values of society is formed. An individual, in the process of education and training, consciously or unconsciously tests the environment in order to establish the boundaries of the permitted, possible interaction and makes a choice in favor of one or another mode of social behavior. On the one hand, an individual acts as an object of education and training, on the other hand, he is the subject of a social process that builds a whole network of cognitive relationships around him that transform the environment in accordance with its own orientation. According to D.N. Uznadze (Uznadze, 2001) we understand under orientation a specific state of readiness for a particular situation, for the emergence of which “two elementary conditions are enough - some actual need of a subject and the situation of satisfaction”. Mental peculiarities form the palette of the needs of a subject.

The actual needs of a subject determine his subjective position, in which human self finds the unique form of expression. A productive study of the factors that determine a person’s subjectivity requires the return of the subject of analysis to a certain spatial-temporal continuum in which the history of a subject (individual or social community) took place. The orientation to one or another social act is a consequence, on the one hand, of individual experience, and on the other hand, of collective ideas, the formation factor of which is presented by mentality. The mental peculiarities that form the orientation characterize the ethnocultural specificity of the deflection of the objective world in subjective picture of the world in human mind. The mental characteristics of a person's subjectivity are deflected in the cognitive processes of a

subject, such as feelings, memory, thinking, speech, attention, imagination, and the ability to make decisions.

Thus, if traditional humanitarian studies focused on the study of “reflecting the objective world in language and thinking,” then within the cognitive paradigm there appears the possibility of complex, interdisciplinary development of the problem of world perception by a subject (Bogdanova, 2018). The subject position of an individual is determined by its cognitive potential, which is revealed in the process of subject-to-object interaction. In a series of cognitive processes of a subject, the ability to make decisions plays the most significant role and consolidates all the actual cognitive resources of an individual. The ability to make decisions, which determines the quality of subjectivity and its historical mission, is formed in the context of social space and social time.

## 7. Conclusion

The use of neuroeconomic terminology during the explication of social facts shows great results. Every ethnic culture has universal features and specific mental peculiarities that create a unique local charm of its representatives. The study of mental features of decision making in the paradigm of neuroeconomics allows tracing the historical and cultural peculiarities of the choice of a particular path of development by a subject. The characteristic features of the decision-making process are expressed in language, speech and subject behavior.

If we imagine the scheme of decision-making mechanisms from the point of view of neurobiology, then it is presented as follows: genes - neuron - brain - perception - society - environment. Voluntary and involuntary value assessment systems, which determine the functioning of rational and emotional systems of the brain, play a leading role in the decision-making process. The main properties of these two systems are that the  $\beta$  - “emotional” system prefers immediate reward;  $\delta$  - “rational” system is designed for long-term effect. In the theory of decision making, with the dominance of a rational system, the category “utility” is actualized - this is a measure of the attractiveness of a decision or an action.

When making a decision, we notice only a portion of the information. That is why a person is inclined to ignore the information that he does not expect in this context. The decision-making systems are often in a state of conflict and, accordingly, when choosing a decision, the subject relies either on experience, or intuition. Sometimes the choice is random. An important place in the decision-making process is occupied by social influence.

R. Dawkins (Dawkins, 2013) suggested the existence of an evolutionarily stable behavior of the majority of people in a particular social context, which, while experiencing constant testing for optimality in a given environment, is preferable. Therefore, in a traditional society, the most acceptable option is to follow the majority in order to obtain general approval or support.

The logic of the decision-making process in a national culture, due to the interaction of both individual experience, social environment and neurobiological systems, finds its most vivid expression at critical periods of the life of a subject. The authors Dadashev and Muskhanova (2017) investigating the ethnic system of Chechens in the context of modern synergetic processes, drew attention to the main causes of the socio-cultural crisis that was observed in the 90s of the 20th century: “during the period of military campaigns (1994–2000) the development of ethnic system was characterized by a complex trajectory, the

processes of association caused by external aggression, were replaced by the development in the direction of socio-cultural crisis. As a result, a sociocultural crisis occurred in the ethnic system with all the consequences, such as: the split within the ethnic group, the retreat from national customs and traditions, the devaluation of ethnic and cultural values, the violation of internal order of ethnic group, etc.”

To conclude with, it is necessary to note that the investigation of mental peculiarities of decision-making in the paradigm of cognitive sciences significantly expands the methodological background and has a fundamental and integral character, contributing to the convergence of social and neurobiological sciences. The understanding of the context of the formation of human mind in a particular culture and deep investigation of the relation between cultural facts and biological systems allows developing mechanisms for the adaptation and intercultural interaction of actors of social existence.

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