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CONSCIOUS AND UNCONSCIOUS COGNITION IN PSYCHOSEMANTICS

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К проблеме сознания и бессознательного в психосемантике

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Abstract

This article examines the methodology of empirical research in psychology that was developed in Russia to study the structure and content of consciousness at different levels, individual or group, with varying degrees of accessibility for reflection. The psychosemantic method stems from studies implementing Charles Osgood's semantic differential and George Kelly's personal construct theory. The construction of a semantic space is different from measurement procedures in the natural sciences. Rather, a system of categorical structures and connotative meanings serves as a reference for empathy, immersion of oneself in an individual or collective mentality of the other (or, in the case of studying self-understanding and reflection, in one's own). From this perspective, psychosemantic methods are related to projective psychological tests but are more formalized, objective, and verifiable. This paper provides an account of the quantitative operational indicators applied in psychosemantics to conduct comparative studies. These indicators include the dimensionality of semantic space, (i.e., a number of generalized categories that

Резюме

В статье рассматривается методология эмпирических исследований в психологии, которая была разработана в России для изучения структуры и содержания сознания на разных уровнях — индивидуальном или групповом, с разной степенью доступности для рефлексии. В основе психосемантического подхода лежит методология семантического дифференциала Чарльза Осгуда и теория личных конструктов Джорджа Келли. Построение семантического пространства отличается от процедур измерения в естественных науках. Скорее, система категориальных структур и коннотативных значений служит операциональной основой для эмпатии, понимания индивида или коллективного субъекта (погружения себя в сознание этого субъекта или, в случае изучения самопонимания и рефлексии, в свое собственное). С этой точки зрения психосемантические методы связаны с проективными психологическими тестами, но являются более формализованными, объективными и поддающимися проверке. В этой статье представлены количественные операционные индикаторы, применяемые в психосемантике для проведения сравнительных исследований. Эти показатели включают размерность

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form this space, and their hierarchical and organizational structure), and the comparative measures of similarity between spaces. Examples of using the psychosemantic approach in studying the process of categorization and perception in altered states of consciousness under hypnosis, in developmental psychology, political psychology, and psychology of art, are presented. The article presents the research carried out by the authors over different years and does not set itself the task of describing the entirety of Russian psychology on the problem of consciousness and the unconscious.

Keywords: psychosemantics, semantic space, cognitive complexity, similarity, sign, category of perception, group consciousness.

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семантического пространства, т.е. количество обобщенных категорий, образующих это пространство, их иерархическую и организационную структуру, а также сравнительные меры сходства между пространствами. Приведены примеры использования психосемантического подхода при изучении процесса категоризации и восприятия измененных состояний сознания под гипнозом, в психологии развития, политической психологии, психологии искусства. В статье представлены исследования, проведенные авторами в разные годы, и не ставится задача описать всю российскую психологию по проблеме сознания и бессознательного.

Ключевые слова: психосемантика, семантическое пространство, когнитивная сложность, сходство, знак, категория восприятия, групповое сознание.

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Different philosophers, linguists, and psychologists have pointed out a close connection between consciousness and language. For instance, Martin Heidegger (1962) stated: "Language is the house of being", while Ludwig Wittgenstein (1922) wrote that "The limits of my language mean the limits of my world." Alexander Luria (2007) discussed how language "doubles" the world. Here, "language" refers not only to natural human language, but to any system of meanings that describes physical reality, psychological images, and states, or prescribes some activity or behavior. One may speak of the language of facial expressions and gestures, dance and pantomime, the language of cinema and theatre, and the semiotics of ballet and architecture, road signs, and clothes (see Lotman, 1992). Various languages (primarily natural languages) help carry out the processes of thinking and communication, self-awareness and prognosis, reflection, and self-reflection. Through language consciousness, we can express "implicit models" of various domains of the subject, social or inner world of self-awareness. George Kelly (1955) regarded individual cognition as similar to how a scientist gains knowledge about the world. Based on individual or collective experience, he or she constructs hypothetical models of a fragment of reality. When we go shopping and spend money, we all function as naпve economists; when we vote for a certain party or candidate, we act as naпve political scientists; attending theatres or museums, we become spontaneous art critics; and building relationships with others we act as naпve psychologists, etc. However, without being an expert in a certain field, a person is typically unaware of these implicit models and their categorical structure.

It can be compared with differences between the concepts of "language performance" and "language competence". A little child perfectly speaks its native language ("language performance"), but is unaware of its rules of grammar and syntax, ("language competence"), whereas an adult starts learning a foreign language by acquiring formal rules ("language competence") and may never achieve fluency. Similarly, our implicit models of different fragments of reality can operate in a performance mode without being reflected.

At the same time, anyone is capable of using implicit knowledge to produce a variety of specific statements interconnected by the logic of implicit models. Empirical psychosemantics seeks to determine the inner content of these implicit models and describe their categorial structure. This method originated from Ch. Osgood's work on semantic differential (Osgood et al., 1957) and G. Kelley's personal construct psychology (repertory grid technique) (Kelly, 1955)).

In the early seventies V. Petrenko (1983), A. Shmelev (1983), and E. Artemyeva (1999) began to use these methods in the USSR. As the well-known American psychologist Michael Cole writes: "Petrenko uses techniques developed in the United States to address a classic problem in Russian psychology" (Cole, 1993). Indeed, psychosemantics derives its methodological foundations from the school of psychological thought founded by the Soviet psychologists Lev Vygotsky, Alexey Leontiev, and Alexander Luria. But unlike the theory of reflection, our methodological approach emphasizes the activity of an individual (in line with the principles of constructivism), with an individual constructing possible or sometimes alternative models of the reality he or she is exploring (Petrenko, 2002).

By applying various techniques of constructing semantic spaces as operational models of the categorical structure of consciousness, as well as developing new ones, we have significantly expanded their use, employing them in the study of consciousness (Petrenko, 1988, 2009; Petrenko, Mitina, 2014; Suprun et al., 2007), individual and collective mentality in cross-cultural psychology (Petrenko, 2009), developmental psychology (Petrenko, Mitina, 2018a), gender psychology (Mitina, Petrenko, 2010), psychology of art (Petrenko, 2014) and political psychology (Petrenko, Mitina, 2018b).

Parameters of a semantic space represent the cognitive organization of consciousness. For instance, a number of obtained factors show the individual's cognitive complexity regarding a given subject. Human consciousness is heterogeneous, and a person can have a high level of cognitive complexity (the number of factors), say, in the perception of football teams, but may demonstrate a low level in the perception of political parties; similarly, one's level of cognitive complexity can be high in economics, but low in art. Affects "flatten" semantic spaces, while spiritual insights can increase their complexity. The percentage of the variance of each factor (or the perceptual power of category) shows the subjective importance of a category and is closely related to an individual's motivation. For example, if an ambitious person is asked to evaluate others, the factor with the highest variance contribution rate will be associated with their social status. Changes in connotative meanings of a semantic space resulting from some manipulation (such as psychotherapy involving hypnosis, see Petrenko et al., 2006) occur in an orderly manner within the logic of affine transformation, rather than as a chaotic "Brownian motion".

Intercorrelations between factors represent the interrelations of categories in human consciousness. For example, at the dawn of Christianity wealth and virtue were negatively correlated: "It is easier for a camel (or "a rope" in a different translation of the Bible) to go through the eye of a needle than for a rich man to enter the kingdom of God" (The Holy Bible, n.d.). People voluntarily gave away their possessions and lived in virtuous poverty. Thus, the vectors of "virtue" and "wealth" pointed in opposite directions. A millennium after, in Protestant Christianity, the vector of "virtue" reversed its direction and now this quality was attributed to prosperous property owners, while beggars and vagrants in Victorian England were condemned to workhouses. Finally, the coordinates of the analyzed objects in a semantic space demonstrate the so-called connotative meanings (integral individual meaning combined with a personalized meaning) and characterize the individual's attitude to these objects.

The construction of a semantic space is different from measurement procedures in the natural sciences. Rather, a system of categorical structures and connotative meanings serves as a reference for empathy, immersion of oneself in the individual or collective mentality of the other (or, in the case of studying self-understanding and reflection, in one's own). From this perspective, psychosemantic methods are related to projective psychological tests but are more formalized, objective, and verifiable.

We have studied the interrelation between consciousness and language in a series of hypnosis experiments, in which a certain meaning was prohibited from

being activated. Hypnotic suggestion blocking a certain object (e.g., a cigarette) results in the loss of an entire subject domain semantically connected with the prohibited object (Petrenko, Kucherenko, 2007). The subject is "blind" not only to the blocked object, e.g., cigarettes, but also to an ashtray filled with cigarette butts, matches, and a lighter, that are related to the process of lighting a cigarette. Or he or she twirls an "unfamiliar object" (a lighter) in their hands, and calls it a medicine tube. I.e., hypnotic manipulation inhibits the object reference of the meaning "lighter".

Our findings were instrumental in distinguishing between "seeing" something and "being aware" of it. Subjects do not stumble into the "invisible" object, i.e., they see it, but are not aware of it. In one of the experiments, after being told to experience a specific emotional state, the hypnotized subject had to fill in some questionnaires. The experiment was held in a room on a university campus, with each room occupied by two students, and the subject's roommate asked permission to be present during the experiment.

The experimenters did not object, but, just as a precaution, they told the hypnotized subject not to see his roommate so that the subject could not be distracted. After being implanted in a particular emotional state, the subject started filling in questionnaires. (Each emotional state was thoroughly "cleaned out" after the experiment and the subject felt well and happy.)

Meanwhile, the "invisible" roommate decided to shave. The electric rattling sound disturbed the hypnotized subject. (The experimenters made the roommate invisible, but they forgot to make him inaudible.) The subject almost exhausted himself trying to identify the source of the buzzing sound. He got up from his chair and took a few steps towards the source of the weird sound. The roommate jumped up from his bed, frightened by the sight of the sleepwalker, but centimeters before reaching him the subject stopped and went into a deeper trance (Petrenko, Mitina, 2014).

We can note that in Zen Buddhism one method of entering altered states of consciousness is the use of logically paradoxical koans (Petrenko, Suprun, 2018). Construction of a paradox leads to altered states of consciousness and can help to expand and overcome what Buddhism calls "duality", or the subject-object opposition. In any case, numerous examples demonstrate that the object of perception can be located right in front of a person without him/her being aware of it. In a scene from Leo Tolstoy's classic novel "War and Peace", the French retreating from Moscow shoot down an exhausted friend of Pierre Bezukhov and Pierre witnesses this tragedy without realizing it. Strong emotions and affects can block consciousness and cause its narrowing. Another way of narrowing consciousness, by blocking its verbal flow, is the repeated recitation of mantras in Hinduism and Buddhism, or the Jesus Prayer in Orthodox Hesychasm. Repeated recitation causes the verbal flow to reach saturation point, halts the stream of verbal consciousness, which then transforms into an intensive stream of visuals, akin to waking dreams. E. Shattock (1994) gives an example of dynamic meditation practiced in the Buddhist monasteries of Burma, which narrows consciousness and leads to a transition to dream-like states similar to prophetic visions. A practitioner, isolated from the world, day after day walks in a confined space, consciously aware of the dynamics of each step.

As a result of repetition and constant reflection, consciousness narrows, and sensory thresholds are lowered. From some point on, the stream of consciousness stops, and inner perception is translated into a stream of parable-like visual dreams that have personal meaning for the practitioner.

The method of constructing semantic spaces as operational analogs of categorial structures of consciousness has been extensively applied in our studies of cross-cultural and gender psychology (Petrenko, 2009; Petrenko, Aliyeva, 1987; Mitina, Petrenko, 2010; Petrenko, Mitina, 2018a). Our studies showed that everyday stereotypes are similar among men and women within one national culture but can be strikingly different from the mentality of other national cultures. We have studied the specifics of categorization and mentality by applying the method of constructing semantic spaces to Russian and Georgian idioms, as well as to several other languages.

The algorithms employed by ethnopsychology to identify the specifics of mentality have proven to be an efficient tool in political psychology (Petrenko, Mitina, 2018a). They can be used to study the values of political parties, as well as to analyze the dynamics of political mentality, types of political mentality, geopolitical images of foreign states and their political leaders, and representation of the life quality in various periods of Soviet and Russian history.

The collapse of the Soviet Union and global changes in the economic and political systems in Russia in the early 90s led to changes in the political mentality both at the levels of society and the individual. These processes and the changes associated with them required a psychological interpretation. To meet this demand, an almost new field of research emerged in Russian psychological science, namely, political psychology.

An important factor that allows answers to many questions about social and political mentality, values of society, and so on, is the reconstruction of the semantic spaces of political parties. Here we are not interested in their legal registration or the presence of a large number of members and supporters; instead, our interest is in the existence of common political views, common positions concerning the most pressing political issues, expressed in party documents as a result of their political activity. This means that we study all groups that exist de jure or de facto as political parties. Recalling Vygotsky's definition, "the meaning is an altered form of action", it is possible to say that the positions of political parties are the meanings in the psychosemantic space of the political consciousness.

Political parties, as unions of politically active individuals who pursue comparable political goals and maintain relatively similar political attitudes, act as collective carriers of particular ideologies. Psychologically, political parties may be seen as the groups that convert various interests of different social groups into the language of political demands and programs available for rational comprehension and contemplation. Furthermore, through the struggle of ideas, political parties can stimulate the creation of new cognitive constructs and new systems of meanings in individuals. Analyses of both individual and collective meanings of political parties can provide researchers with an opportunity to predict the dynamics of attitudes and their formation, and forecast some political development in society.

Several models can be used for the political parties' semantic spaces' construction and investigation (Petrenko, Mitina, 2018a).

Construction of the semantic spaces of political parties. To construct a semantic space, we evaluate the ideological unity of the parties, identify and interpret the bases for similarities and differences between political parties, and determine the dimensionality of the semantic space of political parties as an index of the diversity of political sphere in society and the cognitive complexity/simplicity of political consciousness. Determining the coordinates of parties in the semantic space provides for the awareness of how much a particular political aspect is expressed in a party's position, represented by the content of a factor, as well as similarities with other parties. In addition, clustering is performed, representing the groupings of parties based on the similarity of their political attitudes that enables the prediction of possible political alliances. The studies were done in 1991 (in the USSR, Kazakhstan), 1993 (in Russia).

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Construction of the semantic space of political parties' images. In contrast to the previous task, here respondents are ordinary voters evaluating the parties' policies as "outside observers" according to multiple descriptor scales (e.g., "This party enjoys broad popular support", "This party represents the interests of small and medium-sized businesses", "This party is backed by the President", "This party represents left-wing ideology", etc.). With this procedure, the evaluation of parties is more subjective and dependent on political propaganda, mass media, and political advertising. In contrast to political parties' members who are a more homogeneous sample, parties' evaluation by the "people from the street" is more diverse, the variance is higher, and it seems reasonable for some specific tasks (for example, to assess the image of parties as perceived by different social groups) to construct semantic spaces of images for homogeneous groups of respondents. The study was conducted in Russia in 1995.

Evaluation of the electoral power of political parties. We assess the degree of support for a particular party by the population using the procedure of projection of voters' positions onto the semantic space of parties. Each respondent answers all the items of the questionnaire that representatives of political parties have already answered. As a result, it is possible to determine the coordinates of the political position of a given subject in the space of political parties and to calculate which party he/she is closer to in terms of political beliefs. This procedure allows researchers to build a sort of electoral cloud of citizens' political positions, and to determine around which parties the density of voters is the highest, as well as to build up their demographic profiles. In our studies, the electoral density of parties, as defined by the methods of psychosemantics, has demonstrated a high correlation with the actual data from parliamentary elections.

The political semantic space obtained from the analysis of group data represents the positions of people with different political views. Such a common group space

(constructed using the results of the studies of representative samples) allows us to make a heuristic parliamentary or presidential election forecast, however this can be as misleading as reporting the average group temperature of patients in a hospital. For a variety of socio-psychological and socio-political studies, it is important to pay attention to political ideas (ideologems), political constructs that circulate within society, rather than the average opinion. Here, the aim is to develop a political typology of the nation and define different types of political mentality. Analysis of the political mentality dynamics is necessary to predict the development of political processes taking place in society, ensuring informed choice of "a model of the desired future" from a variety of possible scenarios and conscious elimination of undesirable scenarios.

We solve the problem of establishing the genetic relationship of semantic spaces representing the mentality of society at different time stages, by establishing correction factor relationships of descriptors on the assumption of low variability of the ideology of a party (i.e., objects) over a fairly short time interval, and then describe the dynamics of the objects of the analysis themselves in the combined space of descriptors.

Analysis of people's perceptions about the quality of life. The quality of life depends on many components. Among them are the level of well-being, social freedoms, good ecology, the warm human contact in one's family, at work environment, and in society. It includes the absence of military threats and natural disasters, as well as belief in a happy future for yourself and your children, the opportunity to receive a good education and qualified medical care, etc. Thus, the quality of life is a multidimensional construct that includes various aspects of individual and social life. In our studies devoted to the perceptions of the Russian population about the quality of life in different periods of the country's history, we used images of governments (from Lenin's to Putin's) as role positions, and several dozen judgments about various aspects of the quality of life were used as descriptors. Respondents of different ages were asked to rate the quality of life of the population under a given government on a gradual scale.

The analysis has revealed that the numerous indicators of the quality of life can be reduced to three independent factors: "Political Freedoms", "Material Well-being" and "Meaningfulness of Life". The first two factors have proven to be quite stable across samples from different age groups and with various political affiliations. The first studies were conducted in 1992 and 1994 in Russia. Their dynamic trajectory was reproduced twice in the follow-up surveys conducted 10–15 years later. However, the situation is different for the perceived meaningfulness of life.

Local peaks and troughs for the older and younger generations are significantly different. Also of interest is a significant discrepancy among people of different ages in the indicators for the Meaningfulness of Life factor for the periods when Stalin and Yeltsin governed. The study shows that awareness of the history of one's own country, which is extremely necessary for the formation of the political position of a citizen, nevertheless, does not rigidly determine his/her attitudes to this history. There is some kind of age-related inbreeding of the spiritual atmosphere inherent in various historical stages, a certain spiritual tuning fork that adjusts the

passionarity of society (L. Gumilyov's term), relatively independent from the levels of material wealth and political freedoms.

Also, the dynamics of this factor were different in the follow-up measurements. It is noteworthy that respondents invariably positively evaluate the current period on this factor, while a retrospective look at the not-so-distant past tends to be rather critical.

Analysis of geopolitical perceptions allows us to see (and evaluate) national foreign policy through the eyes of Russian citizens. In this regard, it is interesting (as well as important for supporting foreign policy, to analyze the population's ideas about the geopolitical map of the world; analysis of images of different countries; an assessment of the degree of friendliness towards Russia and its citizens on the part of the governments and citizens of these countries and, finally, analysis of auto stereotypes, i.e., the images of Russia and its population as perceived by Russian citizens themselves. The task of studying the stereotypes of perception of countries that are subjects of international politics, as well as the study of the system of categories through the prism of which the perception and assessment of these countries are carried out is solved by constructing semantic spaces, where the objects of assessments by a set of descriptors (characterizing the level of development of the freedoms and democratic principles, the state of the armed forces, the religiosity of society, etc.) are the images of countries (their auto- and hetero-stereotypes).

Our research has revealed the existence of an invariant categorical structure underlying the perception of foreign countries by respondents from different countries. At the same time, perception of both closest regional neighbors and the world's most powerful nations is affected not only by cultural identification with the country (civic identity) but also by long-term residence in another country, even if the original civic identity is preserved. The multiple studies were performed on various samples from different countries between 1992 and 2019.

As with the images of political parties, the images of political leaders represent a variety of political and moral values in a semantic space, along with professional and personal characteristics that a performer on the political stage, consciously or unconsciously, conveys to ordinary citizens via mass media. Psychosemantic methods of multidimensional assessment of a political leader's image allow us to provide a differentiated picture of how a politician's personality is perceived. Respondents evaluate images of various political leaders according to a set of primary constructs that characterize politicians on personal, professional, and ideological levels. By applying multivariate analysis procedures (e.g., factor analysis, discriminant analysis, cluster analysis, structural equation modeling), the set of initial attributes can be compressed into a limited number of characteristics that can subsequently be used to analyze the similarities between political leaders, as well as their advantages over each other.

Normally a category emerges related to the assessment of a politician's public performance in terms of morality, and determination to improve the quality of life on a national or even global level. Another category is charisma, an essential professional quality in political leaders, along with professional skills that enable them to handle their job efficiently.

These two characteristics seem to be universal for all countries, although additional culturally specific qualities can be identified. For instance, in Russia in 2012–2015 such characteristics were approval of a strong-hand policy, as well as the attitude towards the West (the traditional philosophical dichotomy between pro-Westernism and Slavophilia). On the whole, multiple studies of image perception of political leaders were done using different samples from different countries between 1991 and 2018.

Within psychosemantics, we studied the ontogeny of child cognitions in the domain of interpersonal perception using the method of constructing semantic spaces on fairy-tale characters (Petrenko, 1988).

The Fairy-Tale Semantic Differential (FSD) was designed for children 4–10 years old (i.e. of preschool and primary school age) to reconstruct the semantic space of a child's interpersonal perception and to reveal categories of this semantic space (personal constructs), its content, and the number of these categories. The number of personal constructs correlates with the child's cognitive complexity. Also, the use of FSD enables the determination of the levels of self-evaluation and socialization. This method can be used in paper-pencil mode and computer mode (Petrenko et al., 2016).

During the survey session, which can be done personally by a specialist, the child shares with the interviewer his/her opinions about some fairy characters from a fixed list according to a formalized list of personal traits. The items corresponding to these traits are verbal expressions that can be easily understood by children of this age.

If the child agrees that a character possesses a certain trait, his/her response is coded as 1; disagreement is coded as -1. The question can also be evaded by choosing a "Somewhat so" answer. In this case, the response is coded as 0.

Along with fairy-tale characters, the child assesses himself/herself and can also additionally assess significant adults (parents, kindergarten, or school teachers) and peers.

Each child can determine significant correlations between traits and then reveal common correlations for different subgroups of children formed according to gender, ethnicity, social problems in the family, and so on. For example, boys use the variable "crybaby" most often as the opposite (negatively correlating) to "loyal friend" and "bold", while for girls "crybaby" can be the opposite of "evil" and "rude".

The individual protocol of fulfilling the FSD is a table that contains the number of rows equal to the number of evaluated characters and the number of columns equal to the number of personal traits. This data matrix can be processed using principal component analysis. Each extracted principal component corresponds to the personal construct of this individual. The set of traits that have the highest factor loadings on this component fosters understanding the content of the corresponding personal construct. The impact of each component in total variance shows their hierarchy. The child's semantic space is reconstructed based on results of answering the FSD. The fairy-tale characters' images, and images of self and (optionally) significant adults (parents, teachers) are presented by their coordinates in this space as dots. Such a graph helps the specialist (counselor, psychologist) to

reconstruct the child's worldview in the field of interpersonal communication and look at this world through the child's eyes and understand this child much better.

By analyzing the position of "Myself" in the semantic space and by comparing it with those of other characters we can determine the child's self-esteem.

Moreover, by analyzing the positions of additional personages and identifying the degree of their closeness to the positions of the fairy-tale characters the nature of the child's attitude to a certain adult can be determined.

The calculated indicators of cognitive complexity, socialization, and self-evaluation allow us to compare children with norms and determine the levels of their cognitive development. Cognitive complexity is defined as the dimensionality of the multidimensional space of primary variables, while socialization is seen as a measure of the similarity of the ratings that a child ascribes to characters with the ratings that are considered standard in the society in which his or her socialization is taking place.

The results obtained demonstrate that these indicators vary by age and gender and that the social situation of child's development determines their levels.

Psychosemantics has also gained wide application in the psychology of art, where it can be used to analyze a work of art, as well as its perception by the viewer. A series of studies were conducted to examine the perception of painting and cinema (Petrenko, 2014).

According to Yu. Lotman, a self-portrait explicates an inner dialogue of the artist within himself, and such a dialogue unfolds when translating the meaning of work from the language of painting into an ordinary verbal language. An empirical study of the artist's personality was carried out based on a psychosemantic analysis of his self-portraits. The psychosemantic analysis of the artist's comments about his 72 self-portraits, combined with the positions of the self-portraits in the semantic space built on their basis, makes it possible to identify a system of personal constructs, along the "channels" of which the process of self-awareness is carried out, to explicate a person's ideas concerning themselves. Thus, the methodology used has acted as a powerful means of self-knowledge and reflection of the artist's self (Petrenko, Mitina, 2016).

By studying the perception of films in terms of their psychological content and the audience's ability to discover the underlying deeper meanings we can get a more refined understanding of the translational characteristics of art in general and cinema art in particular in conveying various sociocultural meanings to an individual. The phenomenon of art is largely based on empathy or intuition: the viewer, capable of identification and empathy, can adopt the characters' perspectives or engage in an internal dialogue with them, either supporting or questioning their value systems. The work required to develop meaning and understand a work of art is carried out both in a dialogue with an external interlocutor and as a dialogue of introjects (images of significant others) inside one's mind and demands much more effort than common empathy. The psychosemantic methods used to analyze the process of perception include the multiple identification methods, when respondents are asked to evaluate characters according to a comprehensive set of characteristics (describing their personality, value system, etc.), and the attributive

motive scheme, in which respondents explain the characters' actions by various motives. The resulting individual motive spaces can act as a certain test of the viewer's internal motivation.

Consciousness is characterized by its intention and subject; it defines the world through causal links and functions within the categories of space and time. To study the content of individual and collective consciousness we construct multidimensional semantic spaces in a Cartesian coordinate system.

More often Euclidean distance is used to determine the similarity between evaluated objects, but it is also possible to use the Minkowski metric of any degree (Euclidean distance is a specific case of Minkowski for degree equals 2) (Mitina, Petrenko, 1999; Petrenko, 2013).

The research into the collective unconscious resonates with the principles of quantum physics, where synchronous resonant states that exist beyond time and space are dominant (Jung, 1952; Pauli, 1933; Lindorf, 2011; Petrenko, Suprun, 2017). Such states are defined in the language of a Hilbert space. A holographic model of brain function was developed based on the research on wave processes (Pribram, 1971).

Both Buddhist philosophers and modern physicists (Penrose, 1994; Bohm, 1957) define being as non-local, considering it to be a complex multidimensional system, where "everything is interconnected with everything" and the physical and mental worlds are inextricably linked. Creative ideas are formed in the unconscious or as a result of categorization (Bruner, 1973), and then reduced to a perceptual image or a rational scheme of thought. This process resembles the reduction of the wave function in quantum physics (von Neumann, 1932), and in psychology, it represents the process of translating a mental state into the language of an objective and conscious view of the world (Petrenko, Suprun, 2017).

Thus, psychosemantics is developed both in the research of individual consciousness and social mentality and in studies of the individual, collective, and even, possibly cosmic unconsciousness.

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