

Research Article

Basic Determinants as Prerequisites for a Culture to form Its Way of Knowing the World

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Abstract

The paper discusses the prerequisites that form the basis for the formation of a way of knowing the world. The author notes that the way of knowing the world is an important condition for the safe existence of a person in the world around them. Despite the fact that the mechanisms of its creation involve the biological programme of a person, which is universal for the entire human species, the way of knowing is unique in each culture. It is this method that makes a culture authentic. Born at the stage of a culture's inception, it is the guiding vector around which culture develops, social relations are built, and relations with the surrounding world are established. In fact, the way of knowing the world is the foundation that shapes the image of reality in the mental reality of each member of a cultural community. The cultural community and the world around it develop only within this image of reality. The way of knowing the world is formed simultaneously with the core of culture and is identified with the peculiarities of thinking. It is formed under the influence of various determinants, the main ones being neurophysiological, neurocognitive, biopsychic and social. The author concludes that all determinants influencing the formation of the way of knowing the world and, accordingly, the core of culture, are potentially consistent with and determined by the work of the human biological programme. Through the way of knowing the world, the world surrounding a person is reflected in their psyche as ideal and objective. Due to the action of neurobiological mechanisms involved in the formation of the way we perceive the world, it can help a person improve the quality of their natural adaptive abilities to the surrounding world, which ensures effective cognitive activity. Cognitive activity is presented as the interconnection between the sensory and the abstract-logical in an ideal reflection of the world. These interconnections vary in each culture, as they are formed on the basis of the way of knowing the world.

Keywords

Way of Knowing the World Neurophysiological Determinants, Neurocognitive Determinants, Biopsychic Determinants, Social Determinants

1. Introduction

The question of mutual understanding between cultures is a burning issue and is still considered to be one of the unresolved questions of modern civilisation. The diversity of cultures and their desire to preserve their authenticity re-

gardless of the civilisational context promotes the research of ways that would help to find mutual understanding between cultures and at the same time preserve their identity. By preserving its identity, culture enriches civilisation with

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Received: 20 July 2025; **Accepted:** 21 August 2025; **Published:** 5 September 2025



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profound knowledge of the natural world and of man himself. Until now, all scientific research in the field of cultural studies has been based on a single model: identifying the universal characteristics of each culture and comparing them with each other. Cultural traditions and linguistic specifics are often compared. There are scientific fields such as comparative linguistics and comparative cultural studies. Such comparisons only show the differences between cultures and, more recently, have begun to confirm the authenticity of each culture. Recently, special attention has been paid to cultural neuroscience, which studies how culture affects the brain and how the brain shapes culture. This research helps to understand the interaction of cultural and biological factors throughout life. Research focuses on how existing cultural norms, values, beliefs, and practices influence cognitive processing, emotions, behaviour, and even the structure and function of the brain. However, considering that most cultures today are polyethnic (formed several centuries or even millennia ago from various tribal units) and cultural norms are not so much a natural process as a substrate constructed by social institutions, which may or may not include all the natural norms formed by each tribal unit belonging to a polyethnic cultural formation, then there is little chance of correctly identifying the causes of cultural differences. None of the areas of research allows us to understand the cause of cultural differences. This study attempts to explain the existing differences not by analysing the consequences, but by analysing the causes, which will allow us to get closer to the source of a culture's authenticity and understand how each culture has formed its norms, traditions, beliefs, etc., which, among other things, determine the thinking of its representatives. Today, there are more than 1,000 cultures in the world. Studying the way of knowing the world, which begins to be created by culture at the dawn of its formation, allows us to get closer to the very essence of this question. The way of knowing the world is a kind of template that has been formed in culture and that allows each member of the cultural community to maintain psychic balance, making the unstable world around a person stable in their psyche. This allows a person to develop, explore the world and maintain both mental and physical health. The question of the need to create a way of knowing the world as a tool for exploring the surrounding world and the necessary prerequisites for its creation has not been considered in science. The way of knowing the world is the first tool that culture uses to gain new knowledge about the nature of the world and human nature. It is both the core of culture and the guiding vector of its development. The way of knowing the world is born at the dawn of the emergence of culture and is the only tool by which culture is able to exist and develop through the acquisition of knowledge about the surrounding world and the creation of those values which are material resources, and which consolidate the acquired knowledge. The consolidation of acquired knowledge is linked to human creative activity. The word 'culture' introduced by Marcus Cato the Elder in his treatise on agriculture

although it implied a special mental attitude, first of all to the land, was still associated with the earlier Greek concept of 'inner culture' or 'culture of the soul'. This shows that special attention in the understanding of the word 'culture' is given to the inner states of man as he experiences in the course of his routine (everyday life). 'For a long time the concept of "culture" and "everyday life" existed autonomously. The semantic aura of the concept of 'culture' is very close to, or even identifies with, the concepts of 'education', "upbringing", 'enlightenment'. 'education', 'enlightenment'. Attempts to overcome the crisis of European science, criticism of technogenic civilisation again prompted to turn to traditionalist values, among which was attention to the everyday life as the most important aspect of human existence" [9]. The concept of everyday life is inextricably linked to three aspects of human relationships: psychic, physiological and social. The study of psychic, physiological and social preconditions on which the way of knowing the world is formed becomes an actual and necessary scientific question today.

The aim of the study was to identify biological and social determinants as a basis for the construction of the way of knowing the world and their direct participation in the formation of the core of culture. The objectives of the study were formulated. 1. To determine the most important determinants that influence the processes of creating the core of culture and its individualisation. 2. To explain the relationship between biological and social determinants within culture. 3. Demonstrate the influence of the human biological programme on all processes occurring at the origin of culture. 4. Explain the influence of neural and social mechanisms of world perception in shaping a culture's way of knowing the world. 5. Determine the role of abstract-logical and sense perception in the formation of the way of knowing the world.

Research Hypothesis. The nuclei of culture are formed under the direct influence of neurophysiological, neuropsychic and social factors that arise as a result of the activity of the human biological programme. The task of the programme is to adapt the biological system to the world surrounding the human being. The process of adaptation is realised in human psychic activity, which is aimed at safe cognition of the human environment. The way of knowing the world is formed simultaneously with the core of culture and is a vector of its development, is identified with the features of thinking and affects the definition by culture of its authenticity.

The research was carried out in an interdisciplinary field. It involved the results of scientific research in the field of neurosciences, medicine, psychology, language, art. The methods used to obtain the result are.

Complex method by analysing research in the field of medicine, neurophysiology, neuropsychology, biopsychology, neuropsychology to identify and describe the main determinants that are prerequisites for the formation of the core culture and the creation of its way of knowing the world.

The method of comparison made it possible to carry out a comparative analysis of the action of the selected determi-

nants within different cultural formations, which made it possible to see regularities in the influence of determinants on culture and to determine the roots of the culture's authenticity.

The axiomatic method made it possible to determine the role of the human biological programme in the formation of the core of culture and to show how the relationship between the human biological programme and the world around him influences the processes of sensory perception of the world and how this affected the psycho-emotional resource of the cultural society. In addition, the method allowed us to see that neural and social mechanisms of world perception are based on the human biological programme, and the ways of perception are directly related to the needs of culture.

The descriptive method was used to explain the existing real and potential links between the psychoemotional resources of different cultures.

The component approach allowed us to identify important components of culture, on the basis of which its way of knowing the world is formed.

The results of the study showed that the way of cognition of the world is formed simultaneously with the core of culture and is a vector for its development and determines the direction of cognitive activity for members of a cultural community. The choice of direction is identified with the peculiarities of thinking as a psychic process in which the world around a person is subject to ideal objectification.

Further research will address several important questions. 1. What mechanisms of individual and collective psyche are involved in the formation of the way of knowing the world? 2. How does the way of knowing the world as a kind of mental formation, which is determined by the interconnection of biological and psychic matter, set the depth of cultural space? 3. How does the way of perceiving the world influence the characteristics of human thinking and determine its specificity? 4. How are the norms and values first formed in tribal units preserved in the mental field of ancestors over many generations, even in the case of ethnosymbiosis, when cultures mixed and some disappeared and others appeared in their place, etc.?

2. Biological and Social Preconditions for the Construction of the Way of Knowing the World

The way of knowing the world began to form at the dawn of culture. Its formation was influenced by the biological programme of man and his environment. All the factors described below are interrelated and play a decisive role in the formation of the core of culture and the way of knowing the world.

2.1. Neurophysiological Determinants

Any type of human psychic activity is the result of coordinated work of the limbic system of the brain, which is

responsible for the control of basic drives and emotions, and the cerebral cortex, which is responsible for human cognitive activity and is essential in the processes of learning, predicting consequences and choosing reactions. This constant work is facilitated by ongoing neurodynamic processes, the endocrine system, one of the functions of which is to ensure the interconnection of the human organism with the natural world, and a number of genetic factors. Neurons transmit signals that regulate movement, emotion, and cognition. Neurotransmitters and hormones influence mood, motivation and stress response [15]. Together they are responsible, on the one hand, for the human biological programme, which is connected with the instinct of survival and adaptability to the surrounding world, and, on the other hand, determine the psychic activity of the human being.

Phylogenetic impulses as chains of unconditional reflexes link phylogenetic events in the sequence 'impulse - reaction to impulse'. They arise when an object/object 'unrecognised' by a person appears, triggering a reaction from the human motor system and leading the person to a state of internal tension. This tension simultaneously causes fear, anxiety, anger and irritability. To get rid of this 'cocktail' of emotional feelings the motor system receives commands: attack or run. These two basic reactions to the threat of danger are embedded in the human biological programme. The human brain must choose one option from the two. Once the choice is made, the sense of danger disappears and aggression gradually fades. This biological mechanism of adaptability exists for the whole animal world.

Human psychic activity is influenced by both internal and external factors. The human endocrine system 'adjusts' the internal environment of a person to the surrounding world, thus creating an optimal inter-environmental biological balance for human life activity. The peculiarities of neurodynamic processes determine individual characteristics of psyche related to the processes of excitation and inhibition. Individual characteristics are rather conservative and stable, as they are given to a person from birth. They determine the speed of occurrence of psychic processes and their stability (e.g., speed of perception and speed of thinking), psychic tempo and rhythm, intensity of processes (e.g., strength of emotions, activity of will), orientation of psychic activity to certain objects.

Scientific research of the last decade has proved that the human biological programme is supported by the coherence of the processes occurring between the central nervous system and the enteric centre. The quality of biochemical processes, and therefore the quality of neural impulses, depends on the inhabiting microorganisms of the enteric centre. For example, the state of happiness, the emotional manifestation of which is observed in behavioural patterns, is provided by the serotonin neurotransmitter system. The state of happiness is ensured by a sufficient level of serotonin, which: a) is synthesised in the brainstem nuclei from tryptophan, which the organism obtains from food, b) by microorganisms that mediate the synthesis of

serotonin. Consequently, happiness levels are influenced not only by food availability but also by the body's ability to maximise its benefits. The serotonin system is important for maintaining brain functions, in particular for modulating emotional behaviour, emotional and cognitive disorders and their avoidance [11]. As pairing is a biological necessity of the natural world, so also the first gods of ancient civilisations personified pairing - macrocosm and microcosm. Thus, in Ancient Egypt, pairing was personified by the sun god and the god of healing. Four sons (2 by 2) of the god of sun and sky were responsible for internal organs - stomach, liver, intestines (which modern science calls enteric centre) and lungs. It is no coincidence that all the cuisines of ancient cultures use different spices in their dishes. In many cultures they are considered sacred. This is due to two reasons: 1) spices protect the body from the penetration of various bacteria, viruses and parasites, i.e. maintain the balance of microbiota in the enteric centre; 2) it improves the taste qualities of the dish and expands the gustatory range of a person, which directly affects the cognitive development of a person. Thus, the balance of microbiota in the enteric centre creates unimpeded passage of nerve impulses to areas of taste sensation, the wide range of which increases cognitive function. All these processes create a sense of happiness in the individual. The constituents of nutrition and richness of flavour variety was one of the bases of the internal well-being of man, which determined the potential of his cognitive activity.

Thus, human psychic activity is a part of its biological program and is regulated by the nervous system, in which neural processes take place and impulses are transmitted, and by the enteric centre, whose microbiome ensures/ does not ensure normal passage of impulses. The quality of a person's psychic activity also depends on the harmonious work of these two systems.

2.2. Biopsychic Determinants

The biological programme of a human being includes his/her psychic activity. The biological structure of a person is the conditions of psychic activity initially set by the organism, nature, on which, together with the acquired life experience in society, features, properties, traits are superimposed. All this together forms a unique picture of personality [16]. Human psychic activity is primarily aimed at adaptation to the world around him and implies its cognition through perception. The results of this activity affect the internal state of a person. A person feels the world around him through states. In spite of the fact that nature inherent in man is creative psychic activity, society can distort the biological programme, triggering destructive mechanisms. Thus, not only is the connection between the nervous system and the enteric centre broken, as mentioned above, which leads to destructive patterns of behaviour, but also the integrity of society and its ability to survive in a challenging environment is threatened. Neuro-psychologists wonder about the causes of destructive human

activity, since patterns of destructive behaviour violate social norms and destroy the stereotypes formed by the community that maintain its integrity.

From the point of view of neurophysiology, positive psychic activity of a person is associated with unimpeded passage of neural impulses to the brain through the neural network. Destructive psychic activity occurs when there are changes in the speed of neural impulses. Scientists believe that the speed of their passage is related to the influence of the protein enzyme monoamine oxidase (MAO gene), which is responsible for breaking down neurotransmitter molecules that act on nerve cells in an inhibitory or depressing manner. The sufficiency of this enzyme depends on a balanced diet and movement. It is not by chance that many ancient cultures created systems of active practices of physical movements, be it ritual dance, sports competition, etc., which supported the dynamics of the body. For example, in African cultures and Dravidian cultures, ritual dances dedicated to the gods as gratitude for the gift of a state of satisfaction were and still are active. In addition, elegant dancing in the form of repetitive rhythmic flowing movements was not only a physical exercise but came to be seen as an art form that, on the one hand, guides the body towards perfection, that is, a high state of physical flexibility, but, on the other hand, is a set of psychophysical practices to calm the fluctuations of the mind. Dravidian cultures have created a system of yoga (translated as connection, unity, harmony) for this purpose, among which hatha yoga, in which the Sun (ha) and the Moon (tha), the masculine and the feminine, are united, is considered basic. Round dance is also one of the forms of psychophysical practices, which not only had a physical effect on the body (strokes, claps, various oscillating movements), but also psychic, contributing to the interaction of people with each other (remember the functions of mirror neurons) and the inner development of a person, while calming his mind and leading to a state of peace. Martial arts fulfil the same function. For tribal cultures of antiquity and those still remaining today, the practice of martial arts was not only a biological survival practice, such as the repetition of the movements of a hunted beast, or the psychophysical practice of concentrating strength in the event of a beast attacking a person or people from another tribe, but also an art form. It was the art of flexibility of the body, on which depended the flexibility of the mind, and, consequently, quickness in decision-making, breadth of auditory range and tactile senses. Ancient Greek culture called all physical exercises athletics, which developed flexibility, agility, dexterity, etc., i.e. flexibility of the body was the basis of cognitive ability of a person to cope with different things quickly. Examples of all these psychophysical practices influenced the enzyme monoamino-oxidase, located in the outer membrane of mitochondria (which produce energy for the proper functioning of cells), which frees up space for the unimpeded passage of nerve impulses. Decreased levels of this enzyme lead to a buildup of neurotransmitters and overexcitation of the brain, causing neurological disorder.

ders that influence the formation of disruptive patterns of behaviour. Scientists also link a low-active variant of this gene to a traumatic childhood experience that triggers a prolonged cascade of inhibition processes, disrupting the balance of inhibition-excitation during the passage of neural impulses along nerve fibres. The influence of the endocrine system is not so important. Although the endocrine system maintains a balance between the internal environment and the external environment (temperature, humidity, airflow dynamics, etc.), hormones are able to maintain the speed of neural impulses, thus ensuring energy balance in the body and thus positive psychic activity. If there is an imbalance in the rate of neural impulses, hormones must produce more energy to ensure more or less stable brain function and thus maintain the human biological system. Nature has created all conditions for maintaining the biological programme of man, starting from his inception to his extinction. Human extinction begins with an imbalance in the speed of neural impulses. The psychic is a derivative of the biological programme and depends on the speed of neural processes. Despite the fact that hormones increase the production of energy to support brain activity, but the imbalance in the speed of neural impulses still leads to changes in the amount of neurotransmitters and hormones, which contributes to endogenous stress. It is this stress that becomes the basis for destructive psychic activity. E. Berne believes that the real purpose of hormones produced by the glands of internal secretion is that "... they give aspirations to create or destroy additional fervour, and for their implementation release additional energy. It is likely that to promote increased destructiveness, hormones must interact with social factors [3].

Destructive psychic activity does not serve biological adaptability. It is peculiar only to man. "In most animals, with the exception of social insects, rats, and chimpanzees, the population instinct forbids the destruction of one's own kind. As a rule, highly organised animals resolve their hierarchical and territorial problems through ritual combat or demonstrative behaviour. Territorial animals engage in bloody fights with members of their own species only when the size of the population significantly exceeds the food resources of the environment. An analogue of destructive activity we can observe only in some species of insects (ants, bees), which destroy representatives of other colonies that invade them, as well as in rats and chimpanzees, leading an organised struggle of one community against another" [3].

Safe psycho-emotional interaction is key in a biologically homogeneous but psychic heterogeneous social environment. Psychophysical techniques developed by cultures over many millennia ensure the collective psycho-emotional safety of its bearers. Only in the presence of such safety is culture and society capable of its sustainable development. Psycho-emotional safety (or insecurity) begins to form in the act of a child's acceptance by the mother through the exchange of their energies of love for each other. The child's perception of the pleasantness of its own energy and the pleasant-

ness/unpleasantness of the mother's energy affect the formation of neural connections, the processes of excitation and inhibition, which affects the individual development of the brain, in which the psychic future of the person is created. 'Nor should we deny the existence of specific environmental stimuli that can either inhibit or enhance brain development, resulting in short- or long-term emotional, social, behavioural or cognitive functioning' [17]. During the process of brain development, an individual can acquire neuropsychiatric defects and metabolic disorders, resulting in deleterious psychic activity. "Destructiveness and cruelty are not essential features of human nature, yet they can reach considerable strength and prevalence. Their explanation should be sought not in the destructive instinct inherited from animal ancestors, but in those factors that relate to the specifically human conditions of existence. Thus, even in the form of a defence reaction, aggression in humans is much more frequent than in animals. When analysing human destructive activity, one should always bear in mind that neurophysiological processes take place in a socio-cultural context. Thus, destructiveness is rather biologically potential than biologically determined" [3].

Neurophysiology answers to the philosophical thesis 'man was born in love and for love' by saying that when the basic systemic biological programme is working properly, man is most of the time in a state of inner creative calm. Later this state became akin to the aesthetic concept of 'love' as a manifestation of the virtuous and beautiful in man. Love is the pleasurable energy of accepting the other.

Even at the dawn of their emergence, societies have developed norms of behaviour correlated with the biological programme, which modern science has defined as consistent behaviour. Neurobiological mechanisms stimulate people to change their beliefs, evaluations and behaviour in accordance with the norms of a certain group even in the absence of direct instructions or demands. Consistent behaviour is determined by two types of norms - prescriptive and descriptive. Prescriptive norms (prescriptive) contain indications of the expected required pattern of behaviour and usually contain a moral evaluation of such behaviour. Descriptive (descriptive) norms describe the typical behaviour of most people in a given group in a given situation, regardless of the moral colouring of such behaviour. V. Klyuchev et al. concluded that the nervous system constantly monitors not only the basic results of behaviour (receiving a reward or punishment), but also the conformity of individual behaviour to the normative behaviour of the social group. From this point of view, both the lack of reward and the deviation of behaviour (opinion) from that of the group are behavioural errors that are reflected in the signal generated by the dopaminergic system of the brain, which modulates memory, controls emotions and consciousness, regulates motor skills, controls hormone production and light sensitivity. It is this signal that triggers changes in a person's behaviour to bring it in line with the social norm. There are strong evolutionary prerequisites for

this type of behaviour. In an unchanging environment, the majority of individuals in a population will follow the same strategy only if that strategy (behaviour) has advantages over all others. Deviations from such an optimal majority strategy are penalised by natural selection. Thus, it is rational to follow the majority [8]. The social norms developed by culture allowed the human brain to 'adjust' to behavioural patterns that were safe for the individual. At the dawn of culture formation such norms did not limit a person, but, on the contrary, regulated his psycho-physiological and psycho-emotional states. Norms fulfilled the role of psychological regulators and it helped a person to develop and cognise the surrounding world. Society was interested in holistic cognition of the world, as it was thus able to meet its biological needs - physiological and emotional-psychological. Micro-societies give rise to diversity, forming individual human traits.

Thus, destructive psychic activity is the result of neuro-psychic defects and metabolic disorders arising in the process of human brain development. The emergence of such defects and disorders is greatly influenced by a person's first social experience. These experiences are fundamental to psycho-emotional security and harmonious brain development, which in the future will contribute to a person's diverse cognitive development. At the dawn of their existence, cultures created norms of consistent behaviour, which, despite possible metabolic disorders and neuropsychic defects, smoothed them out and created conditions for human development.

2.3. Neurocognitive Determinants

Humans learn about the world through perception associated with the 5 senses. It is his main tool for understanding and adapting to the surrounding reality. Perception as a psychic process is the human brain's reflection of the objective world. The environment exists as one of the aspects that shape the mind, the brain [22]. For its cognition a human being uses all his/her psychic resource laid down by the biological programme, namely: analysis of information about the surrounding reality, attention, memory and speech. As it was mentioned earlier, neuronal activity and the speed of transmission of neuronal impulses directly determines the quality of this resource. Simultaneously receiving information from both the internal and external environment, the brain works synchronously with different sensory modalities and modalities of the enteric centre. Neural signals coming from the internal environment transmit to the brain signals about the work of the biological programme, signals coming from the external environment transmit to the brain information about its bioenergetic potential at the moment. Signals arrive uninterruptedly, the brain is constantly in a state of constant balancing of both signals and adjusts internal signals to external ones, thus triggering a cascade of energetic adaptation of biochemical processes. Combining information from different modalities, the brain obviously has to prioritise the processing

of certain information by allocating psychic resources. The brain must store and manage information in real time so that humans can behave intelligently in the environment.

One of the most important human cognitive abilities is the spatial perception associated with the motor system. It allows a person to adjust their own balance and control the trajectory of their body in space. The human brain combines the received spatial information with proprioception to create an internal coordinate system so that a person can control his own positioning and navigation. This is a prerequisite for his survival. The next condition for human survival is to understand oneself and to understand the other. Man's ability to attribute psychic states to himself and others helps him coexist with his fellow man and distribute work. Sensory systems provide information about the current environment [4]. Humans have empathy for different emotional and psychic states such as pain, fear, anger, anxiety, despondency, satisfaction, reward and embarrassment. Intra social empathy shows a high threshold of sensitivity between members of the same culture, which helps people better understand each other's needs. In intra-cultural empathy, people tend to unmistakably identify each other's basic emotional and psychic states. In intercultural (inter-social) empathy, the threshold of sensitivity can range from low to very low, but in most cases to a complete lack of sensitivity. This is because people belonging to the same culture build up their emotional and psychological resources. These resources are different for each culture. Cultures that are related in some way, such as by origin or something else show an average threshold of sensitivity. This may also be influenced by linguistic belonging to the same language group. Within different language groups belonging to the same language family, this sensitivity threshold may be low. Within different branches of the same language family, the sensitivity threshold will be low. But, if languages belong to different language families, empathy is usually misguided because the sensitivity threshold is very low or non-existent. In this case, the representative of the unrelated culture tries to read the state of the representative of the other culture, using the emotional and psychological resource of their culture. 'Human self-awareness and social behaviour are an important basis for the formation of society' [4].

The psychic process of cognition occurs with the simultaneous participation of the cerebral cortex and the limbic system of the brain. Since they are interconnected and represent one human psychic field, scientists still try to explain the phenomenon of cognition by investigating the causes, forces that influence this psychic process. Thus, cognitive factors related to the work of the cerebral cortex have been identified, including analysis of the current situation, attention, memory and speech, and non-cognitive factors related to the limbic system of the brain, among which the most important are: the intensity of emotions, the relationship between the intensity of emotions and the ability to cognitive activity.

1. Emotional intensity. Emotional intensity affects human cognitive performance. Research has shown a correla-

tion between differences in emotional intensity and the efficiency of mental operations. Too low or too high levels of emotional arousal are not as effective as moderate levels of emotional arousal, which leads to better cognitive performance. A moderate level of arousal is an appropriate stimulus. It is an adequate stimulus that induces the individual to actively master the object and provides the necessary activity capable of cognitive activity. Therefore, moderate emotional intensity can lead to good results.

2. The relationship between emotional nature and cognitive ability is expressed in two ways. First, it produces a reinforcing and sustaining effect, that is, it asserts that emotions are favourable to cognitive processes and abilities. Positive emotions favour cognitive processes and abilities; negative emotions do not. Positive emotions increase vigour and induce action, whereas negative emotions decrease vigour and inhibit action. Second, the nature of emotion affects the effectiveness of cognitive and functional operations, as well as the consistency between the nature of emotion and the nature of the material processed by cognitive and functional operations. For example, when a person is in a pleasant situation, they are more likely to remember pleasant things. In unpleasant situations, it is easy to remember things that are not pleasant. Third, having a sense of rationality. In cognitive activities, a person is curious about the new and unknowable. When a new discovery occurs, it evokes an emotion of joy. When a person encounters a problem that has not yet been solved, he experiences surprise and doubt, when a person makes a judgement and feels that it is not sufficiently justified, he experiences anxiety. The main external stimuli that contribute to cognitive activity are ideals, motives and interests. All of them are connected with emotional colouring, which is based on the need to understand and explore something new. Understood and researched material is subject to stereotyping and involves the process of fixing the organisation of a cognitive or behavioural situation. Non-cognitive factors are also related to the development of a person's good qualities and virtues. This means that in the cognitive process it is important to utilise a person's strengths and avoid their weaknesses [5]. Non-cognitive factors are more important in the structure of thinking and are the basis of wisdom. Character qualities such as, for example, courage, generosity, etc., which at first glance seem unrelated to cognitive processes, are part of the structure of thinking.

Thus, such neuro-cognitive determinants as spatial orientation, cognitive and non-cognitive factors are important in the process of cognition. Spatial orientation is embedded in the human biological programme and is necessary for a person to be able to control his or her own positioning and internal navigation. Without this basic need, the full development of cognitive processes is impossible. Cognitive and

non-cognitive factors are individual, they depend, first of all, on the speed of neuronal impulses and peculiarities of neuronal processes. Cognitive factors are ideals, motives and interests. They are related to the emotional side of psychic cognitive processes and the need to understand and explore something new. To the important non-cognitive factors we refer the emotional side of cognitive psychic processes.

2.4. Social Determinants

According to A. Towfighi et al. historically established groups provide community identity, shared resources and support for each other, they also include protecting people from internal social discrimination and supporting positive social norms [19].

Social determinants are shaped by the social environment. The nervous system is constantly interacting with the environment, so the human environment has a direct influence on the creation of this type of determinants. Factors that contribute to the formation of social determinants are factors of the physical environment - water, air, housing, factors of the social environment - interaction within family members and thus with other members of society, individual factors that a person shows while in society - emotions and flexibility as the ability to quickly adapt to the ever-changing world around a person [13]. Thoughts, emotions and behaviour have a fundamental relationship with the environment. And individual components such as sensation, perception, cognition, and movement shape the productivity of a person's occupation. As the research shows, sense of self and self-directed activities dominate over others-directed activities. In the activity directed to oneself, several significant factors are highlighted, namely creativity-standardity of actions, initiative in activity, solution of socially oriented tasks, self-organisation, content of activity, social responsibility, satisfaction with the result of activity [1]. Due to its purposeful activity, a person forms a supra-natural form, a 'second nature'. In this sense, activity is an expression of the supra-natural essence of man.

The predominance of self-directed activity is inherent in the biological programme of man and is connected with the peculiarities of the work of his nervous system, namely with efferent and afferent nerve fibres. Through the nervous system there is interaction of a human being with his environment, which is made by transmission of neural impulses along the nerve fibres. They are transmitted from the central nervous system to the peripheral nervous system and vice versa. Sensory neurons (afferent neurons) transmit a nerve impulse from the peripheral nervous system to the central nervous system, describing the environment in which the peripheral nervous tissue is located. Efferent neurons (motor, vegetative) send nerve impulses from the central nervous system to the cells of the executive working apparatuses (muscles, glands, vessels, etc.). And this is related to the internal neurophysiological and neuropsychic state of the person. "Efferent reciprocity is defined as the recognition of the effects of the

environment on a person's sense of self. Similarly, the theoretical definition of afferent reciprocity involves recognising the impact of the sense of self on the person's environment [14]. The interconnectedness of the human nervous system with its environment forms persistent behavioural patterns that can be either constructive or destructive. Consistent behaviour, which we said earlier, can be associated with both creative and destructive orientation. Human social behaviour is first of all directed towards oneself, since behaviour is also a form of activity. In the case of destructive orientation, it is unconsciously oriented primarily towards mental self-destruction under the influence of rigid social norms.

People as social beings are included in a complex network in which culture, society and history are determinants of human psychical activity and influence their mental health. L. Vygotsky pointed out the role of these factors in the development of human mental functions such as memory, attention, imagination, thinking, speech and perception. The scientist believed that these functions first arise at the social level, and then, due to cultural development of a person become his individual. Thus there is a transformation of interpersonal processes into intrapersonal ones. According to L. Vygotsky, human psychical activities in the process of cultural development of a person become the result of internalisation of socially rooted activities, which is a distinctive feature of human psychology [20, 21].

Human cognition unfolds in social activity and communication. "Man, emerging from nature, not yet rid of the impact of biological regularities, finds himself subject to the requirements of social phenomena, as a result of which labour for the representative of the human race has become a certain way of their life activity. Under the influence of labour, human nature is modified and a new form of attitude to nature is formed - labour as a unity and interaction of physical and intellectual forces. As a subject of social life man is realised only in society, and, at the same time, being a product of the environment, man displays the peculiarities of the formation of biological and social aspects of social life. Society determines the situations of not only social, but also biological perfection of man. Biological health allows a person to actively participate in the life of society, to realise creative potential" [24].

Any human activity is aimed at cognition of the environment. The connection between mental processes and spatial orientation, laid down in the biological programme, is based on the neural processes occurring in the nervous system. All human psychical processes (sensation, perception, representation, imagination, memory, thinking, attention, speech) arise as a result of complex activity of neural network and movement of neural impulses and are displayed in the human brain as its objective world. All neural processes associated with the motor activity centre are displayed both in mental activity and in external physical manifestations of body movement associated with the movement of the body in space. The internal structure of activity is represented by a set of sequential,

functionally defined actions that ensure the transition from general knowledge (theoretical or empirical) to a specific solution of a problem. One of the types of individual and social activity is thinking. Thinking develops in the course of subject activity, communication and mastering social experience. Thinking is finally formed in the environment and is closely related to memorisation (memory).

Thus, the human nervous system constantly interacts with its environment, which is represented by the natural world and the social environment. Social determinants are formed under the influence of various factors. Such factors as physical, social and individual create the preconditions for the generation of diversity, in which individual human traits are formed. Diversity forms a variety of forms of activity aimed at social integrity and development of society.

2.5. Summary of the Identified Determinants

Being psychical in nature, human psychical activity is aimed at mastering the external space and the world around it. Like any other kind of activity, it is preceded by already formed conditions, which are regarded as determinants. Neurophysiological, biopsychological, neurocognitive, and social determinants occupy a particularly important place in understanding how culture creates its way of knowing the world. Culture is shaped by the members of society, each of whom contributes to its formation and development.

2.5.1. Neurophysiological Determinants

Neurophysiological determinants are the basis of human mental activity. They form the basis of his biological programme. Neurophysiological determinants are determined by the work of the nervous system. To them we refer speed of transmission of neuron impulses, course of neuron processes of inhibition and excitation in nervous system - these are the main and directing factors, to subordinating we refer interrelation of nervous system with endocrine system and some genetic factors. To such genetic factors we refer human constitution and human microbiome inherited from mother. Having a common biological mechanism of neuronal transmission, nevertheless they are apparently influenced by the allocated genetic factors. If a person's constitution is his physical shell, the microbiome supports it. Ancient medical systems reflect this connection. All ancient healing systems were built on this connection, from which the system of traditional medicine later in the culture evolved. Traditional medicine emerged with the first medical treatises written. One of the oldest medical treatises was an Egyptian papyrus found that dates back to about 4000 BC. Recall, the first gods to appear at the dawn of ancient Egyptian civilisation were the sun god and the god of healing. This pair was probably the first pair of gods in all cultures without exception, as they ensured the healthy biological well-being of humans in the natural world. The myths of many cultures have preserved the information that the gods gave man the gift of healing and

taught him to recognise plants and minerals that would cure physical illnesses. Traditional cuisines began to form around this knowledge. The kitchen was closely related to healing and its main task was not to feed man, but to give man the power to live and thus stimulate cognitive processes. The task of the kitchen was to prevent the appearance of diseases with the help of different plants and herbs. That is why the kitchens of ancient cultures abounded with a large number of spices and herbs, each of which fulfils a different function in maintaining human health. And maintaining the well-being of one's own body became, along with rock painting, an art, something that man was able to do on his own. Healthy wellbeing was the first art that man learnt and created. It was necessary because it enabled man to 'know' the world safely. First of all, man secured his biological programme. The image of God as the teacher of man became the personification of the first knowledge of man about the nature of himself.

Healing has survived to this day in many written and unwritten cultures and is an unwritten book about the system of interrelationship between man and the natural world. Healing, cooking and rock painting were the first arts of man. These first arts were concerned with his well being biological life in the natural environment. In the cultures that coalesced into civilisation, the earlier unwritten medical systems were arranged in books. Let us take two geographically close medical systems as examples: the ancient Indian medical system of Ayurveda, based on medical information derived from the Vedas, and Chinese traditional medicine, which was finalised during the reign of the Yellow Emperor. Originating around 3000 BC, both systems point to the influence of energy on human biological life. Atharvaveda, which became the basis for Ayurveda, was a medical encyclopaedia of the time that consisted of incantations, prayers, charms and hymns, meaning they all relate to the flow of energy in the human body. While Ayurveda calls these energy substances doshas, which are conceptually present in the human body and mind and control various functions in the body, Chinese traditional medicine points to the presence of energy meridians in the human body, which, by acting on them, can prevent the development of disease or cure it. The ancient Persian medical system points to the presence of four elements in the human body, which are present in the fluids, their balance leads to health, and their imbalance leads to disease. Either way, the movement of fluids is related to the energetic processes in the body.

Let us note that the system of spells and charms is inherent, without exception, in all healing systems of any culture. All spells were built as sound variations around one word or word root. Of particular importance in them are the names of plants, medicinal herbs, which were used to prepare the potion. The meaning was to 'translate' the power of the plant into the drink prepared from it. Spells became literary texts, which indicates that the first human knowledge was already perceived as a verbal and graphic (rock painting, a form of writing) art. Some of the oldest spell texts found on clay

tablets are found in Mesopotamia. Magic at that time was not separated from religion, religious rituals necessarily included spells, and the gods were invoked when help was needed during illness or after an animal bite. All spells serve to maintain peace and balance. Some of them are used to restore order when it is disturbed, the other part works to maintain the existing order. All spells are connected with ritual actions. For example, shamanic rituals that still exist today to cure a sick person. Spells were usually used against diseases and against animals and insects that could harm a person. The purpose of all these spells was to enhance or restore a person's psychic energy. Disease destroys the strength of a person's psychic energy, its restoration by means of a spell favours, according to the ancients, cure or avoidance of negative influence.

Psychosomatics of disease tells about the connection between diseases and the state of the psyche in the modern medical system. The knowledge of the ancients, which formed the basis of any of the ancient medical systems, is substantiated by modern neurophysiological research, which confirms the connection between the neural (energy) processes occurring in the body and the cognitive activity of a person.

2.5.2. Biopsychic Determinants

Biopsychic determinants are determined by biological and neural substrates underlying human behaviour and mental activity in interaction with the surrounding world. Biopsychic determinants predetermine the productivity of human cognitive activity. The instinct of survival and self-preservation laid down in the biological programme of man determines only creative human psychical activity as a way of ideal adaptability of man to the world around him. The neurobiological component of the biological programme influences human behavioural patterns. Thus, human behaviour is also controlled by the biological programme.

The basic or basic behavioural pattern of curiosity, from which human cognitive activity is derived. Destructiveness as a behavioural pattern arises under the influence of the external environment, both social (a child's first safe/unsafe social experience with his mother) and natural (access to food and water). At the same time, destructive human psychical activity can be directed at the destruction of the biological programme by the individual, at other members of society, or at another culture different from one's own. To maintain a creative pattern of behaviour in relation to oneself and society, cultures have developed norms of comfortable behaviour. In ancient cultures, norms of comfortable behaviour were 'linked' to the gods. 'Giving thanks' to the gods through sacrifices was a special ritual aimed, first of all, at forming the right relationship with nature and creating the right behavioural norms. The gods acted as regulators of these norms. The gods balanced the human world. Their influence on man was magical. Magicians or priests could hold conversations with the gods, enter into a 'sacred marriage' with them and thus constantly support the creative mental activity of the members of society.

For example, in Sumerian culture, a ruler-priest could enter into a 'sacred marriage' with the goddess of a city to guarantee its prosperity. Preventive spells were used in this sacred marriage. Preventive spells were also used to avert evil. Preventence and regulativity formed patterns of comfortable behaviour for members of society, as it reflected a sacred connection to the gods. The gods could bestow or punish. The pairing of action, so characteristic of all ancient cultures, is manifested here. Violation of norms of comfortable behaviour led to punishment by the gods, which entailed illness. Disease is the punishment of the gods. On the one hand, comfortable behaviour supported the biological program of man, on the other hand, it provided mental safety of man, which activated his instinct of curiosity. Thus, the gods governed not only the outer world but also the inner world of man. The gods and the norms they sent down were an act of creativity and, accordingly, a form of art.

Over time, societies expanded into civilisations, which could initially consist of more or less homogeneous cultural groups or of several cultural groups. The first macro-societies were formed. When analysing two types of societies: micro-societies, which are homogeneous in their culture, traditions and language, and macro-societies, which are heterogeneous in their culture, traditions and language, it turned out that destructiveness is primarily characteristic of macro-societies. In such societies, social norms are not natural, i.e. sent down by the gods, they are not harmonised with the traditions of each established culture. As a rule, they are imposed and overwhelming for the majority of the cultures within that macro-society. Macro-societies usually create their norms from the norms of the dominant cultural group. While in micro-societies comfortable behaviour is a natural psycho-physiological and psycho-emotional norm that contributes to the harmonious development of all members of society, in macro-societies this type of behaviour is imposed by the dominant cultural group and forces the cultures within that community to submit to it. As a result, it leads to the fact that small cultures cannot develop and its members are pressurised by the norm imposed on them. This condition leads to constant conflicts within the macro-society or to the complete assimilation and disappearance of the small cultural group. Existential problems do not arise in micro-societies because there is a clear natural structure of interconnectedness. Such a structured and interconnected system is, for example, the castes that exist in different cultures. Each caste represented by its activities provides for the biological needs of the society and thus social well-being is created. Existential problems are related to destructive human psychical activity, and they are characteristic of culturally heterogeneous macro-societies. If in mini-societies the first social experience of a child is protected by the social norm of consistent behaviour, in macro-societies such protection is minimised or thus in many cases its absence is observed. This 'weighs down' the work of the human biological programme, as the coordinated work of all processes in the human body is disturbed. It is very diffi-

cult for the human brain to 'adapt' to the surrounding socio-psychological reality. Although cognitive activity still takes place, some changes in the perception of reality are already noticeable, in particular, there may be problems with attention, memorisation, etc.

2.5.3. Neurocognitive Determinants

Neurocognitive determinants determine the direction of human cognitive activity, the results of which are reflected in the form of the objective world in human consciousness. Cognitive activity as a mental process is determined by the internal needs of a person to satisfy the interest of cognition of the world and is a way of a person's attitude to the world around him. Cognitive activity is one of the aspects of formation and development of human mind and brain. Human cognitive abilities are inherent in his biological programme and they are primarily related to sensory perception and spatial orientation.

One of the functions of spatial orientation is that it is related to thinking processes, it forms lateral thinking. Lateral thinking is the basis of human understanding of the surrounding world and the orientation of his cognitive activity. Lateral thinking is non-standard thinking in the modern sense, it uses the maximum number of approaches to problem solving. Lateral thinking is peculiar to all cultures without exception. The way of cognition of the world by culture is based on it. It is characterised by spatial universality, because in mental reality it is determined by the set of possible movements of the human body.

Spatial orientation allows a person to regulate his/her own balance by means of axes of movement and to control the trajectory of his/her own body in space by means of planes of movement. A person's perception of the world begins through his or her own body. We assume that lateral thinking and anatomical movements of a human body have a direct connection. And from what direction lateral thinking will unfold depends on what anatomical planes and movements of a human body are directly involved in his usual daily activity. Obviously, this is what nature intended human creativity to be about. Creativity will be regarded as man's ideal adaptability to and objective understanding of the world around him. We assume that human thinking is influenced not by the type of writing (hieroglyphic, letter, etc.) as it is considered today in modern science, but by the connection of spatial movements with lateral thinking. Although it is not excluded that ancient hieroglyphs and pictograms depicted not only the subject of the objective world in dynamics, i.e. in the basic movement characteristic of it, but the movements of the depicted objects were akin to human anatomical movements. This indicates that man begins to cognise the world through anatomical movements of his own body - body axes and movements in them and body planes and movements in them. Mastering the space of the surrounding world occurs through oscillatory, rotational and progressive movements. For example, walking is represented as a progressive movement of a human being. The use of

anatomical and spatial body movements and their active demand or passive use is influenced by the surrounding landscape. It seems an obvious fact that the passive use of anatomical movements in everyday life is compensated for by cultures in various dance ritual movements. Dance presumably determines the nature of the pace of human labour activity. If the pace of labour activity is fast, which is associated with the length of productive seasons during which food can be grown and harvested, then dance abounds in quiet movements. Russian culture and Greek culture can serve as vivid examples of this. Russian dance tradition is characterised by round dance as a fluidity of movements. This is due to the fact that the season in which crops can be grown is relatively short and this requires constant effort, quick reaction and fast work. The climate of Greece allows the season of growing fruit and vegetables to be long in time. The work is constant and monotonous, not requiring quickness of movement. This slowness of daily work is compensated by fast and different dance movements. It was a question of collective dance. But, in addition, either in the collective dance itself (for example, some African cultures) or separately there are male and female dances. All women's dances are usually dedicated to the goddess of fertility and the main movements in these dances are rotational and oscillatory and unfold in all anatomical planes and axes of the body. As an example, Arabic belly dance, female dance dedicated to Shiva, etc. All male dances are training of the body and its endurance, they are also connected with all anatomical planes and axes of the body, but the main movements are progressive and oscillatory, for example, Ukrainian martial dance gopak, or all movements are connected, which is characteristic of Chinese martial arts. Thus, the person constantly maintains in active condition all anatomic and spatial movements of a body laid down by the biological programme, that helps the person to provide active condition of lateral thinking. This thinking allows a person to be flexible and find optimal solutions to complex situations occurring in the natural world around him.

Consider this with examples from different cultures of how humans maintain anatomical and spatial movements of the body. 80% of China's territory is covered with mountains, gorges, hills and only 20% is flat. The people of China had to settle in gorges, on the slopes of mountains, on mountain plateaus. Getting food was also somewhat difficult, requiring them to adapt their propulsion system to such a natural environment. Ancient Chinese were constantly looking for ways to get to a food source faster or to grow food in quite difficult not only terrain but also climatic conditions. His locomotor apparatus had to adapt to the constant up and down movement. Naturally, the main function was assumed by the vertical axis of the body. The frontal plane of the body was dominant over the others. Anatomical frontal plane - vertical axis, as well as horizontal plane - sagittal axis, sagittal plane - frontal axis, horizontal plane - vertical axis were considered as basic adaptations. But all these models gravitate towards an ideal model, the medial plane, in which the anatomical movements of the body in all axes are harmonised. Because due to the

complexity of the environment, to constantly keep the balance, planes and axes were constantly changing, that is, all four basic anatomical models 'plane-axis' were in a constant dynamic relationship, which contributed to the multiplicity of diverse adaptive variations for the motor system. But all of these variations tended towards the ideal - the anatomical medial plane. Over time, this developed into a system of martial arts that refined kinesthetic sense and, consequently, anchored kinesthetic movements in memory. All this also developed a special type of thinking. One cannot speak of a particular case without seeing the whole context in which the case manifested itself. The particular is part of the general. Apparently this model was the basis of Confucian ethics. These are the features of lateral thinking of Chinese civilisation, which was born from Confucian ethics, and which implies the future as a way upwards all together. Perhaps it is from these anatomical patterns and there are 4 tones of character pronunciation in the Chinese language. These are the vocalising tones of natural language, the same character pronounced in different tones changes its meaning. Even in the very name of the tones there is a deep meaning hidden. First tone (yīping, or even tone, 'ˉ'); second tone (yángping, or rising tone, 'ˊ'); third tone (shànshēng, or rising tone, 'ˇ'); fourth tone (qīushēng, or quǐn, 'ˋ'); light tone (light tone is a special tone different from the four tones, and is not labelled). The light tone of Chinese comes from four tones: yīping, yángping, shànshēng and qīushēng. As a phonetic phenomenon of tone change, light tone should be reflected in words and sentences. The meaning-rich Chinese national opera is built on these ancient natural language tones.

The African continent is dominated by plains, plateaus, plateaus and lowlands. African cultures have a different relationship between the motor system and lateral thinking. Although not so complex, food retrieval required a certain amount of skill, which was primarily associated with progressive movements. Africans, like some Eastern cultures and people from India, traditionally carry weights on their heads. This tradition dates back to Ancient Egypt 2-3 thousand years B.C. or maybe even earlier. Studies by physiologists prove that carrying weights on the head is the most economical way for the human body, the weight is distributed evenly over the entire spine, which ensures correct posture and a beautiful smooth gait. From the point of view of the body's motor system, this is only possible when the anatomical medial plane is active. The medial plane divides the left and right side of the body into equally even parts. In Europeans, Americans and other cultures the medial plane is inactive, as it is not used. The medial plane is connected with the sagittal axis, which allows unimpeded passage of neural impulses along the spinal column to the brain and vice versa, which makes the perception of the world more vivid. If we pay attention to the national clothing, the brightest and most abundant with all the colours is the traditional African clothing. Obviously, it also affects the speed of movement. Perhaps this is why Africans are the best and most enduring runners in the world. In addi-

tion, endurance helps people to adapt to any natural situation. If we look at the history of migratory flows, we find that African tribes and peoples have been the least affected. As a rule, there have never been conflicts over access to food and water. The villagers of Chad are a case in point. This is one of the driest regions in Africa, but the villagers have adapted to the constant drought and live happy and prosperous lives. This is why African tribes are not culturally and linguistically mixed. That is why there is a huge variety of languages and even cultures that are in territorial proximity to each other often do not have common words in their languages, which could indicate links between them. The existence of links between tribes and cultures is not important because each of the existing cultures is self-sufficient on its own. Obviously, this is due precisely to the fact that the dominant anatomical medial plane creates a special connection, a full-fledged connection, in lateral thinking. In this type of thinking, the world is not made up of parts and is not divided into parts (which is characteristic of the thinking of Western civilisation), but is unified, complete and perfect. And its perfection causes a person to have a reverent trust in it. Perhaps that is why African cultures are characterised by ritual masks, which may indicate a unified but diverse world. Such a diverse and unified world is thus also characteristic of Hinduism. While African cultures display the diversity and unity of the world in rituals, festivals and ritual dances, Hinduism displays this rituality on the walls and roofs of the temple. The anatomical medial plane in painting is considered ideal and is called the golden ratio. In addition, the medial plane binds the vertical and frontal axis on itself as well. For example, dancing oscillating movements of a hip joint (translation) on a frontal axis are capable to make only representatives of African cultures, the same concerns and belly dance which origin many researchers refer to Ancient Egypt. Dancers of India also very harmoniously perform oscillating movements of this dance. All body movements occur in the horizontal plane. Thus, the thinking of culture is greatly influenced, first of all, by the anatomical dominance of the axes and planes of the body and the movements in them as the basis of the physical adaptation of man to the world around him. The motor mechanism lays the foundation for thinking around which the way of cognition of the world is formed. Sensory perception and the motor system are interrelated. Human cognitive activity is aimed at cognition of the world around him, first of all, at finding a balance between psychic phenomena and the motor system of a person, which is reflected in his perception of the world. Thanks to this balance, the received information is organised and transformed into knowledge. Knowledge forms the content of thinking.

The cortex and the limbic system of the brain, which is responsible for emotions, are involved in processing the sensory information received. Hence, modern science has developed the concepts of cognitive and non-cognitive factors contributing to human cognitive activity. Some non-cognitive factors are 'embedded' in the structures of thinking. Special influence

on the processes of cognitive activity is exerted by the intensity of emotions, the relationship of emotions with cognitive activity and the sense of rationality. These are internal factors. Moderate level of emotional arousal favours better cognitive process. Ideals, motives and interests act as internal cognitive factors.

2.5.4. Social Determinants

Social determinants are determined by the social environment. A person's environment influences a person's sense of self and a person's sense of self influences the environment. This relationship is influenced by physical factors (water, air, housing, ambient natural light and colour of the environment), social factors (family, community), and individual factors (emotions, flexibility to adapt to the world around the person). Human thoughts, emotions and behaviour also have a fundamental connection with the environment. Several basic social determinants can be distinguished that influence one's sense of self and sense of community. Basic social determinants emerged in the early days of the emergence of cultural community, primarily as the natural human biological environment systematised within sensory perceptions. The systematisation of the natural environment in the habitat of the cultural community is closely related to the maintenance of the human biological programme and its functioning in space. All these determinants are united with the human nervous system, and the states that humans experience during the processes of its excitation and inhibition. It should be recalled that all states of pleasure and displeasure are related to the survival instinct. And the function of basic social determinants is connected, first of all, with the maintenance of the bio-psychic balance of the internal human environment with the external, surrounding environment. All these determinants have a calming effect on a person, harmonise the work of the human nervous system and have a beneficial effect on the development of his mind. These are sensory determinants such as: a) auditory influence (sound rhythm and melody), b) visual influence (colour, dwelling), c) influence from the sensory system of balance and movement (dance, competitions, martial arts), d) gustatory influence (traditional food, cuisine), e) influence of touch (body adornment, ornaments), f) influence of sense of smell (psychic and physical health).

Let's look at examples of the social determinants of auditory and visual exposure. A. Auditory influence. The whole universe is permeated with sound, light and rhythmic pulsations of the Sun, Moon, planets, stars, galaxies. And all this affects air, water, earth, all living organisms, including man. And man himself produces various sounds that have a polar impact on him and the environment. Auditory impact occurs through noises and sounds. Many human biorhythms have a similar structure to music, that is, musical wave oscillations are similar to biorhythmic oscillations. The hypothalamus synchronises the sound rhythm with the biorhythm. In doing so, it has its own small amount of local memory where it places the information it needs. The content of this memory

largely determines a person's reaction to music. From the information contained there, depends on whether or not a person will get pleasure from the sound of music. Perceiving music as a special type of biorhythms, the hypothalamus stores in its memory the most correct combinations of musical cycles. Information about what exactly to consider correct is formed throughout a person's life, but its general elements are innate. Many human biorhythms have a similar structure to music, i.e. musical wave oscillations are similar to biorhythmic oscillations [2]. The initial vocalisations for humans were noises (wind, water) and sounds of nature (birdsong, animal signals), which the human brain synchronised with its own biorhythms. By combining them, or by emphasising the dominant natural sound, cultural communities ordered the external space to suit their needs. For example, African cultures are characterised by drum rhythmic patterns. It is the drums that form the basis of any rhythmic melody. Music can create any emotion in a person. This means that, hearing the sounds of the drum, each person creates his own, individual melody. This melody becomes his essence and defines his life. This is proved by the Himba tribe of Africa, each member of this cultural community has his own melody. This melody is a sound expression of a person's essence and an educational factor when he violates the laws of the community. In addition, drum rhythms convey a diverse range of human emotions and are a means of transmitting information over long distances in the language of rhythm and tones. African drumming consists of multiple rhythms played simultaneously. These multiple rhythms create an overtone effect. Studies of neurophysiologists show that the 'overtone ladder' as a series of sounds formed according to the law of the 'golden' section, tunes the human organism to harmony with the world, with the laws of the Cosmos. This acoustic series of harmony is capable of tuning the vibrations of the human body. The ability to hear and sing overtones brings joy, fills with vital forces, gives a real experience of this Harmony. The sound of the first drums helped to fight fear, gave a charge of energy and affected the psycho-physical state of a person (normalisation of heartbeat and blood circulation, reduction of anxiety and improvement of mood), activated both hemispheres of the brain, helped to improve memory, concentration and coordination (especially coordination of hands and eyes). In doing so, neural connections are strengthened and creative thinking is stimulated. This is probably why African women and men hold a load on their heads without much effort on the part of the coordination system. African legends, myths, proverbs and sayings are full of vivid and colourful details and convey deep meanings. At the same time, the details are not lost in time as they are passed from generation to generation. It is a living (oral) book of cultural antiquities and thought artefacts.

Overtones are characteristic of Arabic culture. Overtones can be heard in the azan call to prayer, the Koran and the Qasidah are also accompanied by overtones. But the Arabic language itself, used in everyday life, also has overtone vocalisation. The overtone sound causes vibrations in the organs

and the vowel sound activates it and fills it with energy. It is the fastest and safest way to locally stabilise the blood supply, oxygenate and bring energy to the organs. Overtone sound requires concentration and engages absolutely all brain zones without exception, even those that are inactive [18]. And when this happens, a person suddenly realises that the doors to another, higher world have opened before him. That is why it is a social duty for every member of the Arab society to read the Surahs of the Koran, because by doing so a person strengthens his connection with the earthly world and the higher world. Probably, the distinctive feature of Arabs - wordiness - is also based on this mechanism. Arabs are in constant communication with each other. This strengthens the society very much.

Mantras, which are so characteristic of Hinduism, Buddhism, Jainism, Sikhism, Zoroastrianism, Taoism, consist only of sets of Sanskrit sounds. But the numerous repetitions of these sounds have an effect on the physical, psychic and spiritual state of a person. Thus, the traditional sound combination (mantra) 'oum' sharply reduces the depth of breathing and due to vibration there is self-massage of organs, affecting the deepest tissues and nerve cells, which increases blood circulation.

The effect of sounds on the human body by means of biologically active points was used by ancient Chinese medicine to cure diseases of the body. Pentatonics - the principles of five sounds were coordinated with the five types of intonation in the Chinese language, with the mysterious laws of nature, with the five dense organs of the human body and with its five senses. Music, instrument and even the note were selected according to the energetic state of a person's meridians, as well as according to the time of year and the energy of the day.

Sounds practically recharge a person's internal energy accumulators. The sound generated during pronunciation or singing only 15-20 per cent goes into the external space, the rest of the sound wave is absorbed by internal organs, bringing them into a state of vibration. There is a stable connection between the frequency of sound vibrations, specific organs of the human body and physiological processes.

Thus, the mechanism of musical rhythms is as follows: the sound is perceived by the ears, decoded and turned into a nerve impulse, with which the brain further works. This information gets to the central parts of the brain, which are responsible for emotions and biorhythms. It is compared to the pattern of synchronisation of biorhythms. This pattern is slightly different for each person and health and all processes in the organism depend on this pattern. And depending on conformity or nonconformity to this pattern sound causes different kinds of emotions.

B. Visual Exposure. As research shows, the auditory sensory system dominates over the visual system. This means that in the simultaneous auditory and visual perception of an object or phenomenon, the brain responds to the auditory perception. Although visual exposure is secondary to auditory exposure, colour still plays a special role in human cognitive

development. Colour is a sensory impression that occurs when wave light stimuli of a certain length reach the pupil receptors. From there, this impulse travels along neural pathways to the brain and begins to be perceived as colour. The perception of colour is always subjective, as it occurs only in the human brain. Vision receptors are similar to rods and cones. The rods distinguish only the contrasting black and white spectrum, they are very light sensitive and make it possible to see at dusk and in the dark. Cones are responsible for colour perception. There are three types of cones that are responsible for wavelength perception: short wavelengths (blue), medium wavelengths (green), long wavelengths (red). Numerous studies show that the perception of colour is influenced, firstly, the emotional impact of colour is due to the properties of universal objects of nature (sky, earth, sun, etc.), and secondly, the influence of culture. It is scientifically proved that impulses of visual stimuli, having passed through occipital and temporal zones, immediately get to the limbic brain responsible for emotions. Short and medium wavelength waves enter the temporal part, while long wavelengths immediately enter the occipital part, causing strong arousal. Colours have a huge impact on cognitive (conscious, lived) processes. The experience gained in the socialisation process of the object, as well as its individual colour preferences, personality traits and motivational structure have a very strong influence on colour perception. Colour perception is very strongly influenced by cultural and social associations. According to neurophysiologists, a contrasting combination of colours has a stronger effect on the brain than a dim combination. Different wavelengths of light have different effects on the pituitary gland, the part of the brain that regulates the autonomic nervous system and controls hormone metabolism. Therefore, colour has the ability to affect the physical state of a person. The body's reaction to light waves depends on three factors: the colour itself, the combination of different shades and the combination of colour and geometric shape.

Let's look at examples from different cultures. African traditional dresses are full of yellow, and it is the dominant colour in the takni pattern. It does not matter how much colour is applied to the fabric. It can be a background colour on which other colours are displayed: blue, green, orange, sometimes pink and brown, and very rarely a small amount of red. Yellow may be the protruding colour (dominant, foreground), which is shaded, in most cases, by blue, green, less by orange. Traditional graphic patterns and colours have persisted in African cultures for thousands of years. This geometry and colour palette forms a persistent system of perception and patterns of behaviour. The human brain forms a model of the external world based on experience and perception. Human imagination is the mental reproduction of sensory characteristics of objects. It plays an important role in the ability to think and create. The brain is capable of evoking and reproducing the sensory characteristics of objects even when these objects are not present externally. Information from the senses is integrated and processed by the brain. This

allows us to create connections between different sensory impressions and form unified images of objects in our internal model.

Neuropsychologists point out the influence of colours on the human brain. Thus yellow colour tones the nervous system, raises self-esteem of a person, activates mental activity, promotes self-development, relieves stress and improves memory. In addition, the yellow colour promotes the release of serotonin, which lifts the mood, improves concentration and metabolism, gives vitality, helps from melancholy, gets rid of depression, returns the desire to live and work. Yellow and orange trigger the production of dopamine, which makes a person feel pleasure in life. Shades of the middle part of the spectrum: yellow-green, yellow-blue, blue-blue, green-blue - have a favourable effect on a person, they calm the psyche, have a calming effect. Through colour in African cultures, the emotional-psychic and psycho-physical state of a person is enhanced. These two states exist in an integral relationship with each other as a manifestation of the pairing and essence and integrity of the world. This may also indicate that the perception of the world in these cultures is holistic, comprehensive, indivisible into parts and is related to the psychic and physical state of the human being (or the workings of the biological programme). It is this state that creates the ideal conditions for human cognitive activity. It should also be noted that unlike other cultures, particularly Arab and Dravidian cultures, where the customary colour of the sari (India) determines caste or the colour of embroidery (Arab culture) determines a person's status, in traditional African culture the concept of caste and a person's status does not exist. The colour of the garment and the geometry of the pattern does not depend on the status of the person. This ancient tradition still exists today. Colour and geometry convey information about a person's inner world and do not relate to their external status. Clothing is a symbol of culture and an image of civilisation.

Arab culture explains the contrast of black and white thus. Black absorbs all the colours of the spectrum and in the Pharaonic era it was associated with life and rebirth. The colour black does not reflect any waves but it absorbs more heat. It is encoded in the culture that through black clothing a woman accumulates more natural heat and light on the one hand, and on the other hand, a woman requires a lot of heat in a relationship. White is the source of all colours. A person sees white colour when all wavelengths of light are reflected from an object. Obviously, this shows the integrity of the perception of the world. A person who wears white coloured clothing in this culture shows that they perceive the world holistically, comprehensively and understand it thus. The meanings of white contain purity and simplicity. This ancient meaning of colour is preserved in Arab culture until today. It is not by chance that traditional men's galabeya is white, and women's galabeya, although it can be of other colours, is still traditionally considered to be black. In Arab culture, a woman for a man is life itself, which can help him to be reborn. In addition, the colours of the female galabeya gravitate towards

blue and green and their shades. Blue is considered the colour of calmness and carefree, these qualities are important for a woman in Arab culture. Green relieves stress and symbolises comfort, joy and calmness. All these qualities are nurtured in girls in this culture. Through the colour of galabeya, a woman emphasises her inner state. Elements of orange, pink and purple are also inherent in the female galabeya. Each of these colours is an open living book for the man, who 'reads' through the colour the desires and state of the woman. In this culture, colour is a reflection of psychophysiological and psycho-emotional states as a form of communication between man and woman and a way of their spiritual unity. In spiritual unity a strong spirit offspring is born. It is the spiritual unity of man and woman that creates ideal conditions for cognitive activity. This is the tradition of this culture.

The first written sources as early as 5,000 years ago mention the sari as a women's garment (India). The sari is a symbol of happiness and respect. The colour of the sari is associated with the worship of Goddess Shakti and has 9 traditional colours: light pink (symbol of nature and purity), saffron or orange (associated with coconut rice, symbol of strength and creativity), yellow (associated with rice as a source of survival, new energy), pink (associated with sugar, symbol of love and affection), red (associated with motherhood and destruction of evil, strength, valour, energy, growth and love), white (colour of scholarship, harmony, purity and tranquility), dark red (associated with pongali sugar as a symbol of sacrifice), green (joy, blessings and positivity, prosperity), grey (strong colour energy), royal blue (trust and tranquility), lavender/purple (symbol of spirituality and ambition). The colour of the sari is directly related to the strengthening or weakening of the direction of a person's service force. Man serves by sharing his inner state with another, thus he transfers his love to another. The three goddesses worshipped in Hinduism - Lakshmi, Saraswati and Durga or Shakti - are connected and represent power. Lakshmi is responsible for prosperity, abundance, prosperity, wealth, good fortune and happiness. She is associated with perseverance, bearing children and gaining spiritual awakening. Saraswati is the goddess of speech, wisdom, learning and knowledge. She patronises science, art and music. Durga (Shakti) as a manifestation of the feminine aspect of the divine essence represents the energy of life. These goddesses are symbolic forms that a person can give to someone or take from someone. A person can share with another the gifts of these goddesses food, possessions (Lakshmi), understanding of the world, knowledge (Saraswati), energy of strength, power over oneself (Durga/Shakti). The worship of these goddesses indicates that one takes their power. The colour of the sari plays an important role in the worship of these goddesses, who can exist in several forms. All forms of manifestation of goddesses are associated with a particular colour. In the physical world, the goddesses are dressed in saris of the corresponding colour. A woman wears the colour of the sari that can indicate what energies she wants to enhance at that

moment, that is, what energies she is inviting into her life. In fact, the colour of the sari should enhance this energetic connection to the manifestation of the goddess' form or several of her forms at the same time. From a neurophysiological perspective, this can be seen as an amplification of the psychic energy directed towards the necessary issue. Thus, it serves as a vector to change the direction of a person's thoughts. Thoughts do not 'run' chaotically, they are structured and controlled by a person's psychic energy. This gives the person calmness, peace of mind and helps to maximise decision making on the necessary issue. It also means that in this cultural tradition, colour is seen as the steward of a person's psychic energy. Saris may contain several colours at the same time, but there is always a base colour. The base colour is directed to the goddess herself as a whole, additional colours show the forms of her manifestation, which are necessary for a person at a given time. For example, the issue of wealth and appeal to Goddess Lakshmi, i.e. a satisfactory level of life for a person as a physical and spiritual state is thus also connected with other issues such as happiness, luck, abundance, grace, beauty and charm. For this purpose, a sari is not selected in a monochrome colour, but with additional colours. Even to a monochrome sari, in this case, details in the form of jewellery can be selected to fulfil the same function. It is the separation of needs (physical, psychic, energetic) from wholeness, that is, the separation of the forms of manifestation of the goddess from her holistic essence, that is the ideal basis for the cognitive activity of the representatives of these cultures that inhabit the Indian peninsula. It is a cultural tradition.

Society as an environment should create ideal conditions for human development and cognitive activity. The subject environment also affects his development. First of all, it is connected with artificial space, which is either akin to natural space or different from it. Initially, all cultural communities built artificial spaces (dwellings) akin to the natural spatial environment. The connections that exist in the object environment demonstrate the model of culture and reveal its character. Associative spatial relations (model of dwelling space), first of all, are manifested in the architecture of artificial space. It could be round, square, rectangular, unified or divided into parts. It all depended on the natural space surrounding man. For example, open natural space was associated with the openness of the inner space of human life and the round shape of the dwelling, which is still characteristic of rural dwellings of African cultures, nomadic steppe peoples and peoples of the far North (yurts). Closed natural space (surrounded by mountains, forests, hills) was associated with the closedness of inner space and the closure of human life from the outside world and the square or rectangular form of dwelling, which is characteristic of Chinese culture, European cultures, etc. Metonymic spatial relations (shapes of objects and their purpose), in which a natural object is replaced by an artificially created one, affect the disclosure and direction of human cognitive abilities and affective reactions. For example, a flat natural large or small space, or mountains, hills and

forests influenced the ways of human sitting: squatting (characteristic of African cultures), in lotus posture (characteristic of Oriental, Chinese, Japanese cultures and Indian Peninsula cultures), on some object (cultures that emerged in the territory of Europe, which was covered with forests). In addition, a completely open space inside the dwelling contributes to persistent emotional stability and is not accompanied by sudden changes in emotional state. Such an open interior space can be found today in many cultures, as well as in religious buildings, regardless of doctrinal concept. Metaphorical spatial relationships indicate the internal organisation of the space in which different human activities take place, e.g. feng shui in China. Thus ritual rites, depending on the culture, can take place inside a temple or other religious building, in the open air in a special place designed for this purpose, etc. The placement of the dwellings themselves is also significant. They are placed in a circle and circular in shape or like Chinese Xiheyuan, when the hut consists of four buildings in the form of a square, creating inside a closed space for one family and the entrance to the house was oriented to the south. In any case, each culture creates its own artificial space to fit its environment, and the availability of natural material in sufficient quantities suitable for the construction of dwellings, so associative, metonymic and metaphorical spatial relations each culture builds according to its needs in security.

Simultaneously with sensory perception, communities form patterns of behaviour that make human life safe within the natural natural space. This allows man to both interact with and learn about the natural natural world, the social world to learn about himself and the inner world and to maintain in harmony the natural processes embedded in man's biological programme. Thus, through society, man develops a sense of self that helps him to learn about the natural world and to develop and improve his natural natural skills either through observation or reflection. The perfection of his natural skills leads to his highest state, the spiritual state, one aspect of which is mental fortitude and stability. To develop a sense of self, first and foremost, and a sense of self as a member of a community, mini-societies create regulators, which modern neuropsychology regards as consistent behaviour. Mini-societies create prescriptive and descriptive social norms. Prescriptive norms mark the level of reward or negative sanctions for compliance or violation of group norms. Descriptive norms define the value of belonging to a given society. The neurobiological mechanism of comfortable behaviour is activated in a society by its biological programming. Through this normative behaviour man gains a certain security, which allows him to be simultaneously in the ever-changing world around him and a relatively stable social reality. As in the animal world, in a human community there is a determinant and a subordinate. The determiner in mini-societies is the wise one. The division into the determinant and the subordinate is characteristic of all human societies, because man initially built his social system according to the existing natural systems, which he observed and studied.

In homogeneous cultural systems, such as micro-societies, it has always been the wisest member of the community who is the defining characteristic. In macro-societies, which consist of heterogeneous cultural systems, the determinant is the person who has gained power, and not necessarily due to his wisdom. While in micro-societies the mechanism of comfortable behaviour is aimed at creating optimal conditions for human development, in macro-societies the mechanism of natural comfortable behaviour is very weak or not activated at all. In macro-societies comfortable behaviour is not a consequence of neurobiological mechanism, it is a consequence of inequality and social mechanism of punishment arising in such societies. Thus, by means of norms unnatural for heterogeneous cultural systems existing within macro-societies, they try to preempt destructive activities of society members. Such norms, which are weakly connected with the neurobiological mechanism of psycho-physical and psycho-emotional security, are capable of aggravating destructive human psychical activity.

Thus, cognitive processes as a mental phenomenon are part of the human biological programme. The peculiarities of the course of these processes predetermine both individual neurophysiological, biopsychic, neurocognitive determinants and cultural collective social determinants.

3. Formation of the Way of Knowing the World by Culture

3.1. Neural Mechanisms of Perception of the Surrounding World

Cognition of the world as a mental process is predetermined by the human biological programme. Although sensory perception is important in the process of cognition, but still the reflection of objective reality by the brain is influenced by the work of the nervous system and the copy-template, which is created on the basis of the template of the biological programme of a person by means of neural connections, which are individual. The templates include brain rhythms, stimulus-responses, processes of excitation and inhibition, speed of neuron impulses, metabolic and biochemical processes, that all together provides maintenance of a human biological programme. In the basic template, nature has laid down two types of human states - pleasure or displeasure. The limbic system of the brain, which operates supra-instinctive emotions, is included in the creation of individual copies of the basic template [10]. Supra-instinctive emotions create an individualised pattern of two basic states. These connections are like a neural pattern; the human brain 'records' them as a copy of the pattern. Such copies are individual, and they are represented in further mental processes as basic patterns, which are stored in different memory cells. From the copy of the pattern a memory is formed, which appears as a reservoir of storage of events corresponding to the pattern. In the pro-

cess of cognition, the patterns 'grow' into sensory images of perception, which are already defined by culture. The processes of cognition unfold according to these patterns. Patterns filled with images are valuable for a person, as they are able to adapt the dynamic processes of the external world into his/her psychic reality, thus making it stable and persistent. Subsequently, any event occurring in the external world (natural and social) passes through the filter of such a pattern, which adapt the event to the pattern. If the event is adapted to the pattern, it is sent to the reservoir of memory, if not, it is not fixed by memory and becomes fleeting for the person.

The results of scientific research confirm that there are two mechanisms involved in the mental process of cognition. The first mechanism ensures the preservation of the biological programme and its uninterrupted work in real time. This is a functioning timeless mechanism of control over the movement of nerve impulses and transformation of nutrients coming with food into energy sources for the cells of the organism, i.e. the work of the mechanism is aimed at maintaining the biological tissue of a human being with the help of energy. The mechanism provides connection of all neural pathways with the motor cortex of the brain. The second mechanism is responsible for decision making, that is, 'fitting' the event to established patterns. By receiving a variety of sensory information the brain compares it with information that is already in a copy of the pattern in order to generate decisions. Different sensory information has different implications for survival. Whereas the body's mechanism for maintaining reflex activity responds to all processes in real time, the mechanism responsible for decision-making can dispense with it. The 'real-time response' neural channel is more direct, efficient, and faster than the 'complex decision-making' channel. Integrated decision making provides a better response to survival needs [23]. The decision-making mechanism allows a person to make more flexible choices, that is, to make decisions based on a complex environment, past experiences, and one's own needs. It is also related to attention as the ability to prioritise the most important tasks. Prioritisation is determined by values. The brain makes an analysis of values and makes the final decision. Both of these mechanisms are linked to memory, which captures and stores information corresponding to the patterns of a copy of the template.

The mechanism of reflexive action is related to short-term memory. The peculiarity of this memory is that neural activity must be able to store information after sensory information disappears, also it manipulates information by switching attention during two tasks simultaneously. Short-term memory is regulated by the mental process of imprinting and its capabilities are related to the basic processes of intelligent behaviour. The decision-making mechanism is related to long-term memory and is regulated by the mental processes of retention and recognition of a pattern-copy of a pattern that fits the event. The task of the decision mechanism is to ensure that there are no contradictions in the decision. At the same

time, the output of the neural channel in each person who processes the same type of information will be unique and exclusive. The efficient operation of this mechanism is influenced by brain plasticity, one of the important molecular mechanisms of which is calcium ions [4]. Brain plasticity refers to the ability of the nervous system to change its structure and function throughout life in response to a diverse environment. Both mechanisms - reflexive and decision-making - are related and important. However, it is the reflexive mechanism that is obviously more significant. Consider how cultural traditions can support brain plasticity. Calcium ions are produced by the parathyroid gland from the calcium that enters the body with food. Ionised calcium is found in teeth and bones and is involved in many body processes. For the effective work of the glands of internal secretion need: a) that they are free blood flow, b) that there were no 'blockages' in the passage of neural impulses. Both the first and the second primarily depend on the physiologically correct position of the skeleton during different movements. Thus, the wearing of weights on the head, which is characteristic of African and some Asian peoples, not only ensures a beautiful gait and maintains the 'golden ratio' of the body, but also allows the head to be in a physiologically correct position, which the body remembers. Thus the parathyroid gland located in the neck area is well supplied with blood and the nerve tissue allows neural impulses to be conducted unhindered. It is therefore not surprising that Africans are the best runners in the world. Africans and some eastern peoples have very beautiful and strong teeth. The traditional diet of these cultures also contributes to this. The traditional cuisine of these peoples is based on dishes made from legume crops, which are known to be rich in calcium. This tradition of spatial movement and diet is maximally effective in maintaining the human biological programme and, at the same time, the reflex mechanism. Consequently, the decision-making mechanism as an adaptation mechanism is much more effective in these cultures in adapting the biological programme of a person to the natural environment and allows a person to successfully adapt in the social environment (consistent behaviour). Both mechanisms, which are related to cognitive processes, work more effectively in these cultures compared to European cultures. Weakly effective or insufficient operation of such cognitive mechanisms can also be related to the psychical phenomenon of human destructive activity.

Thus, there are two mechanisms involved in cognition of the world - the reflex mechanism, which supports the biological programme of a person, and the decision-making mechanism, as an adaptation mechanism, which adjusts the work of the biological programme to the constantly changing reality surrounding a person. Both mechanisms work with memory. The reflexive mechanism is associated with short-term memory, which allows the nervous system to process information after sensory perception has been 'switched off'. The decision-making mechanism is associated with long-term memory, which allows the nervous system to

‘embed’ the information received from sensory organs and processed into sample copies of the basic template. The more copy patterns are created, the more plastic the brain is.

3.2. Social Mechanisms of Perception of the Surrounding World

Social mechanisms of perception of the surrounding world are formed under the influence of the human biological programme. This mechanism is based on the connection between the motor and sensory system of the human body, which is carried out in the mother nervous system. The biological programme stimulates a human being to unite with self-similar people, which creates conditions for better survival in the natural world surrounding a human being. Community is formed in the natural environment, the conditions of which are relatively stable and the same for all its members. Access to food and water, security of location, the process of food extraction, etc. - all these factors contributed to the unification of people into communities. The psychic mechanisms associated with mirror neurons played a decisive role in this process. A person, observing another, ‘understood’ him by similar actions. Similar actions of another caused certain supra-instinctive emotions in man, which were responsible for pleasure. Apparently, the emotion of pleasure formed trust as a primary human value, which triggered the process of community formation.

Positive emotions - calmness, inspiration, fun, awe - are associated with the state of pleasure. The exchange of emotions within a group leads to the accumulation and creation of its emotional-psychological resource, which becomes a driving force in group cognitive processes. The first social mechanism developed by the community was group cognition. The mechanism of group cognition provided better adaptability of the group to the surrounding natural world, making human curiosity safe, which pushed the community to expand its range of action. The processes of cognition of the natural world, being relatively safe due to the support of the social environment, evoked positive emotions. Social groups that experience positive emotions show greater sensitivity and empathy towards members of other cultures. The emotional-psychological resource created by the community forms the group's own identity and personal emotions are transformed into a more stable social identity through large-scale group communication. Social groups that experience positive emotions show greater sensitivity and empathy towards members of other cultures. The emotional and psychological resource created by the community forms the group's own identity and personal emotions are transformed into a more stable social identity through large-scale group communication. As research shows, if an emotional event has caused strong excitement, it is remembered for a very long time and is passed on to close people in the social circle. Social exchange is built on deep knowledge and emotional understanding, allowing members of a social society to reflect on experiences

together. Any reflection process as an important experience and its results enter into the common knowledge domain of the social group, thus creating a common scheme of the world and a common representation of the world (concepts, beliefs, values, etc.) [6].

According to Durkheim, collective perceptions are phenomena that exist objectively only because large groups of people consider them to exist objectively. For example, Durkheim considered religion, customs, money, laws, the state, etc. to be collective perceptions. The objective existence of these phenomena is confirmed by the fact that they have the power to influence the behaviour of individuals and their groups (Durkheim called them ‘moral force’). Collective perceptions set the necessary framework for any social interaction, ensure mutual understanding and increase the effectiveness of joint actions within the collective that shares them. Collective perceptions, however, are a cultural fact: individuals learn the collective perceptions of their communities through their socialisation and enculturation into those communities, thus individuals from different cultures often have different collective perceptions. The social environment and the history of social relations influence not only the content of thinking and not even only the way of thinking, but also the anatomical structure of the brain itself [7].

Thus, trust became an important neuropsychic factor for building community. It also became the first fundamental value around which society formed its emotional and psychological resource and filled it. Trust is the primary psychological value of man as a social species. On the emotional-psychological resource the community created the first mechanism of social group cognition. Group cognition forms collective perceptions. Individuals belonging to different cultures are often characterised by different collective perceptions.

3.3. Cognition of the World as the Interrelation of the Sensual and Abstract-logical in the Ideal Reflection of the World

Man cognises the world around him by means of sensual perception or by means of reflection. And the way of reflection can be different: figurative-tactile, actually figurative and abstract. While the first two are related to the presence of real objects in the physical world, the latter involves reflection on objects, principles and ideas that are not reflected in the physical world but have an impact on the events of the physical world. Cognition reflects the ideal world, which is what it is because of the patterns formed. Sensual cognition precedes abstract-logical cognition. Firstly, as a sensory perception of the surrounding world, this cognition is connected with the human biological programme. Secondly, it is connected simultaneously with both mechanisms - reflexive and decision-making, which is important in the realities of the dynamism of the world around a person. Thirdly, it encompasses two types of memory - short-term and long-term, since the

information perceived by the senses is instantly transformed into an image and sent for comparison with the samples already existing in memory. Sensual cognition is carried out in several forms, it links the biological world of man and the biological world of nature. Sensation is a subjective image of objective reality and depends on: a) individual neural connections, b) specific stimulus-response associated with supra-instinctive emotions. Perception forms a complete image of an object, which is created by a system of sensations and is very closely related to the state of satisfaction/dissatisfaction. The result of sensual cognition is representation, which implies sensual reflection of the object and its reproduction even in the moment of its absence, while the object itself is remembered as an image.

Abstract-logical cognition can be considered as indirect cognition. Firstly, it is related only to long-term memory and to already existing patterns of pattern copy samples. Second, it transfers the patterns of the template copy to non-physical objects of the physical world. Thirdly, it is capable to compile existing images of samples of a copy of a template, to group them and to create something new (idea), thus a new image of samples of a copy of a template not existing before is created. An example of this is artificial intelligence today. Since the abstract type of cognition is inherent in any culture, one point should be clarified. Modern science, when explaining abstract-logical cognition, proceeds from the tradition that was established in Ancient Greece. But the peculiarity of the Ancient Greek civilisation was that it absorbed disparate ideas about the world from the civilisations that preceded it or existed in parallel with it, such as the Egyptian civilisation, Sumerian civilisation, Akkadian civilisation, Babylonian civilisation and others. Therefore, it was necessary to find a way or mechanism that would allow to harmonise these disparate worldviews, which is what the ancient Greek philosophers did. If in modern civilisations there is a word 'concept' as a reflection of essential properties of the studied object expressed in a sign form, in ancient civilisations and in different cultures today the reflection of essential properties of the object was expressed in a figurative form. Such figurative form was conveyed in the form of hieroglyphs (ancient Egyptian hieroglyphs, which were depicted on Egyptian temples and were considered sacred, or hieroglyphs carved on oracle bones) or cuneiform or runes. It was a symbolic writing that displayed a model of the world. The first written language recorded the results of abstract cognition. Over time, symbols turned into simplified signs, which lost their symbolism and imagery, as well as lost the knowledge of the ancients about the world order encrypted in them. The need for writing arose when perceptions of the world settled into a system of interrelationships, and this system had to be preserved. The first writing was temple writing and was written on the walls of temples. Temples in both Sumerian and ancient Egyptian civilisation were the first books, on the walls of which the system of the world order and the connections existing in it were imprinted.

Individual cultures keep the system of world order created by them in myths. Civilisation keeps it in books. The cult centre of the ancient Sumerian city of Eredu was considered as an open-air book. All the temples in the central part of the city were covered with inscriptions. Apparently, later, by analogy with the Sumerian civilisation, temples became cultic structures as veneration and worship of the knowledge of the world stored in them. Along with hieroglyphics, cuneiform and runes, drawing occupied a special place. While all forms of first writing have been replaced by sign writing up to the present day, drawings on textiles have retained the ancient symbolism of the cultures they represent. For example, the ornamentation on fabrics of different nationalities and tribes is different, as well as the use of colour in it. Even in similar images, being in kinship or in close proximity of cultures, for example, stripes can have a different direction or have a different order of colours, and the meaning of the symbol is also slightly modified. In addition to the pattern on the fabric, jewellery also carries its own semantic load. Together with the dress, they display a unified image of the world characteristic of the culture. It can be assumed that the more complex are the patterns of fabric and jewellery to them, the more complex philosophical system the culture has formed. This form of abstract cognition of the world is particularly vividly represented in African cultures, some of which display significant symbols in the form of drawings or patterns thus also on earthen houses (this applies to settled African cultures). Drawing on paper (cloth) is not characteristic of African cultures. Obviously, there is a reason for this. The first papyrus appeared, according to historical sources, three millennia B.C. in Egypt. Apparently many African cultures had already existed by that time and probably used a completely different material for their records, which has not survived. The absence of writing as a graphic sign today is not proof that it did not exist before. Obviously, in older cultures, writing was not physical and descriptive. These cultures may have used a figurative 'alphabet'. Imagery is a fundamental concept for understanding the psyche [12]. It is obviously no coincidence that existing African cultures, which have remained untouched by modern materialistic Western civilisation, have well developed telepathy, which "works" with images. Telepathy is an energetic language of images. The knowledge of ancient Greek civilisation was symbiotic, borrowed from previous civilisations, then it is not surprising that 'for the first time' the image is explored in the philosophy of Plato and Aristotle. In addition, the philosophical systems of Plato and Aristotle belong to the classical ancient Greek period or the period of the great synthesis. Hieroglyphs, cuneiform and runes were descriptive and depicted primarily the appearance of a physical object. These types of descriptive representations were the first graphic abstractions that encapsulated the image of the object and its properties, making them symbolic. Symbols became the first concepts. Patterns were already found in the

Palaeolithic era, which, according to modern scientists, began about 2.6 million years ago, geometric patterns are found as early as 10 thousand years B.C. These are preliminary conclusions of scientists. Geometric pattern is characteristic of African cultures. We can assume that exactly the fabric became that ancient 'papyrus', on which geometrical symbols were written down forms of energies as images of the world order, which modern science calls the quantum world. And even today remote African tribes consider their body as a canvas on which it is possible to depict the objective world existing in the psychic reality of a person. Fabric covers the human body, so perhaps the geometric symbols painted on the fabric were meant to amplify the energies of the person. Masks, obviously, also strengthened energies and helped a person to connect with energies of the world, which in modern language is called quantum. Probably, figures carved from wood or made of terracotta connected the energies of different spaces and fulfilled the role of some kind of mediums.

The area of distribution of such figurines is interesting. Terracotta and wooden figurines of people in a certain state of body movement, who apparently later became deities, as well as masks, are widespread among African cultures. Similar figurines of people and deities exist in Hinduism, whose philosophy is based on the supreme energy essence, which has many manifestations, and man as one of the many manifested energy essences is subject to reincarnation. Interesting is the fact that such figures are not typical for the civilisation of Ancient Egypt. Scientists have proved that for 3-8 thousand years B.C. the territory of the largest African desert had abundant vegetation, water resources and was suitable for farming, development of cultures and creation of civilisations. The age of many African terracotta figurines and masks, as well as jeweled gold ornaments, attest to the existence of a well-developed culture and civilisation in north-west Africa that predates the civilisation of ancient Egypt and the Sumerian civilisation. Graphic patterns on cloth created ornamentation and were a form of writing. Ornamental writing has been preserved by many cultures, notably the Dravidian languages, Sinhalese and others. In Islamic temple art, arabesques reflect the world system of ancient Semitic cultures. Arabesque as a special 'readable' ornament has its roots in ancient Babylon, which emerged on the site of the Sumerian city of Kadingir, which means 'Gate of God'. Originally, arabesque ornament consisted of geometric figures and fanciful interlacing of lines, later it was supplemented by curls, plant shoots and stylised flowers.

Whereas logical cognition is linear and implies a direct cause and a single consequence. Abstract cognition is non-linear and explains a consequence by different causes, or demonstrates how one apparent cause can provoke a number of consequences influenced by implicit causes, and it is often the implicit causes that can influence the outcome.

Both sensual cognition and abstract-logical cognition are reflections of the objective world in the human psychic reality.

Being simultaneously in constant interaction with various dynamic systems of both internal and external environment neurons are capable of creating special connections between the body and the human environment. These special connections are the basis of two types of cognition that have their distinctive features in each culture and make a culture authentic. If a culture wants to continue to exist, it must pass on its distinctive features to new members. If it fails to do so, the society ceases to exist.

Thus, the ideal representation of the world in the psychic of a human being is based on sensual cognition and logical-abstract cognition. Sensual cognition precedes abstract-logical cognition and, within the framework of the biological programme, establishes and maintains links between the internal environment and the surrounding human world. Sensual cognition, first of all, provides adaptability of man as a biological species. Logical-abstract cognition is inherent in any culture. Taking into account the specificity of the special connections that the community creates with the world around it, it would be necessary to divide this type of cognition and consider it as logical-abstract and image-abstract (symbolic). The way of knowing the world in each culture is individual and different from others. This makes each culture authentic.

4. Conclusions

1. The way of knowing the world is unique to each culture and emphasises its authenticity. It originates at the dawn of community formation and is the nucleus around which culture begins to form. Culture begins its development from the way of knowing the world, which it has defined. It also determines the vector of its development. Thus, the way of knowing the world marks the boundaries of culture, makes it holistic and self-sufficient.
2. There are prerequisites common to all cultural groups that influence the way of knowing the world. Neurophysiological, biopsychiatric, neurocognitive, and social determinants are determinants. They are all aligned with and determined by the workings of the human biological programme.
3. Neurophysiological, biopsychic and neurocognitive determinants are individual and determine the state of a person's psychic state. The world surrounding a person is reflected in his psyche as ideal and objective. Social determinants arise as a result of the interrelation of sensory perception, which is associated with different types of memory, and the human motor system.
4. Cognition of the world is presented as an interrelation of the sensual and abstract-logical in the ideal reflection of the world. These interrelations are different in each culture. Abstract-logical cognition of the world is a universal and generalised concept that cannot always be applied to all cultures. For further research, the abstract-logical way of knowing the world was divided

into logical-abstract and figurative-abstract.

Author Contributions

Oksana Leontyeva is the sole author. The author read and approved the final manuscript.

Conflicts of Interest

The author declares no conflicts of interest.

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