

## Reflection on the quantum-information specificity of consciousness

The problem of the existence of consciousness in the material world is one of the most complex and deep problems of philosophy, since disputes still do not subside, what consciousness is in essence and how it becomes possible that it, being subjective and non-physical, is generated by objectively existing physical systems. Mental (relating to consciousness) phenomena do not fit into the scientific picture of the world, since their existence is not reduced to the existence of elementary particles and physical fields, which, according to modern science, lie in the ontological foundation of the observed phenomena.

The study of consciousness faces serious difficulties, since the internal subjectively experienced content of consciousness is not fixed by the objective methods of the natural sciences. Scientists study cognitive functions (thinking, perception, imagination, memory, etc.), but consciousness falls out of the scope of objective scientific research, since human cognitive activity, due to a certain kind of behavioral and neurophysiological processes, does not necessarily imply the presence of consciousness and can be realized at the unconscious level of being.

Therefore, it is not possible to draw a clear demarcation line between the conscious psyche and the unconscious, showing how it is the mental (conscious) experience that makes human behavior more diverse and valuable in terms of evolutionary development. Thus, the rational-theoretical justification for the existence of subjective-mental (non-physical) phenomena in the physical universe paves the way for the incorporation of consciousness into the scientific picture of the world.

Understanding the essence of mental phenomena is relevant within the framework of constructing artificial intelligence that reproduces the cognitive abilities of a person, since it is directly related to the answer to the question: what mental functions can be modeled by logical and computational means on an inorganic medium, and which fundamentally cannot be implemented in the form of computer programs?

Solving the problem of the existence of consciousness allows us to tip the scales either towards the concept of strong artificial intelligence, showing that a person as a rational being does not differ in essence from a cybernetic device, or towards the concept of weak artificial intelligence, demonstrating that a person has unique qualities that cannot be reduced to logic-computational algorithms.

Solving the problem of being and the essence of mental phenomena also has psychologically and socially significant aspects, since it helps, firstly, to determine the role of conscious efforts in transforming unconscious patterns of behavior, and, secondly, to understand the ontological foundations of human freedom and his responsibility for his actions. in a situation of informed choice. The question of whether mental causation is possible and how it affects free will is directly related to the psychophysical problem, the solution of which, in turn, is rooted in the philosophical ontology of consciousness.

The existence of consciousness, at first glance, seems obvious and accessible to every rational being who has mental experience. However, behind the apparent evidence lies a number of questions that are not easy to answer. What is consciousness? Is it a product of the activity of the brain, or, being an independent substance, only uses the brain for its manifestation in the material

world? Can a robot at a certain stage of scientific and technological progress be conscious? How to make mental experience accessible to objective research? Can the mind influence the body, and if so, does this violate the laws of physical science? Does consciousness have freedom, or is freedom of consciousness an illusion behind which causal connections are hidden, due to the functioning of the physical body, as well as the influence of the environment?

All these questions, despite a large number of philosophical theories (such as the theory of the identity of mind and body, functionalism, behaviorism, emergentism, neutral monism, anomalous monism, panprotopsychism, substantive dualism, sense data theory, adverbial theory, externalism, internalism, representationalism, separatism, epiphenomenalism, interactionism, parallelism) remain without a satisfactory answer, and the existence of consciousness is still an ontological problem.

The information model of mental experience, which considers consciousness as a phenomenon of the informational order, seems to be very promising. Within the framework of this model, it is possible to preserve the phenomenal content of the psyche, which in essence cannot be reduced to states of the physical order, solve the psychophysical problem and explain how subjectively existing consciousness can influence objectively existing material systems without violating the principle of causal closure of physical events.

Understanding consciousness as an information being allows us to close the ontological and descriptive gap between mental and physical processes, as well as answer the question why it is generated by physical systems and we do not function as unconscious zombies.

Until the 20th century, mental experience within Western philosophy was considered, for the most part, from the standpoint of dualistic and idealistic ontologies, which, in particular, B. Russell says in his lectures published in 1921 under the heading "Analysis of Consciousness".

In materialistic philosophy, consciousness was identified with thinking and was not studied as an independent problem due to the existence of subjective-psychic phenomena in the objective-physical world, while, on the one hand, thinking can be unconscious, and, on the other hand, consciousness can be realized outside the semantic and linguistic sphere of representation, i.e. does not necessarily imply a mental component (for example, in the experiences of an infant, if we are talking about lower states of consciousness, or in the meditative experience and non-linguistic culture of Zen Buddhism, if we are talking about higher states of consciousness).

In a new way, the problem of the existence of consciousness was posed within the framework of analytical philosophy as the problem of the very possibility of producing mental (non-physical) phenomena by physical systems. G. Ryle's *The Concept of Consciousness*, which was published in 1949, is usually cited as a turning point in understanding the ontological problem of consciousness. In his works, C. Lewis begins to use the special term "qualia" to denote the non-intentional content of mental experience.

In 1996, D. Chalmers publishes the book *The Conscious Mind*, where he draws a clear demarcation line between the easy and difficult problem of consciousness. The latter boils down to the question of why, in general, the physical states of the brain are accompanied by states of a mental order, while we could well function in the darkness of an unconscious existence without losing the whole variety of behavioral reactions. According to D. Chalmers, this problem was not

previously considered within the framework of philosophical research, but was replaced by an easy problem that deals not with the existence of consciousness, but with the methods of obtaining and processing information at the level of mental activity of the brain.

Materialistic theories of consciousness in relation to the ontological status of mental events are divided into reductive materialism (which claims that the ontology of the mental is reduced to the ontology of the physical, i.e. mental phenomena are identified in essence with some aspect of physical being and can be fully described in the appropriate physical terminology ) and non-reductive materialism (which claims that the ontology of the mental is not reducible to the ontology of the physical, i.e. mental phenomena are not identified in essence with some aspect of physical being and cannot be fully described by means of physical terminology).

D. Chalmers, under the influence of the philosophy of B. Russell, believes that the existence of consciousness is determined by the internal, informational, side of the existence of a physical being.

Within the framework of the quantum approach to understanding the phenomenon of consciousness, mental properties are identified with specific quantum properties that are realized in the process of functioning of the neural networks of the brain. One of the first attempts to present the foundations of the quantum theory of consciousness in a systematic way is contained in the article by E. Walker "The Nature of Consciousness", published in 1970.

D. Chalmers analyzes the relationship between consciousness and the collapse of the wave function, and also considers the prospects for a quantum model of mental experience and, above all, draws attention to the possibility of using the Heisenberg uncertainty principle to solve a psychophysical problem within the framework of non-reductive materialism. In addition to the correspondence of mental properties to the specific properties of the quantum order, the attention of scientists from various fields of science is paid to explaining specific mental abilities on the basis of quantum mechanical concepts.

Externalism, unlike internalism, believes that the meanings of words are determined not by certain psychological states, but by real-life objects with which the representing subject is in a causal relationship. In a well-known thought experiment called "Earth's Twin", H. Putnam suggests imagining an analogue of our planet, where water is outwardly identical to the water that earthlings know, and performs the same functions, but at the same time has a different chemical structure than H<sub>2</sub>O.

Thus, an inhabitant of the Earth and an inhabitant of the Earth's twin will use the concept of "water" in the same way, being in an equivalent psychological state, pointing to completely different referents of the concepts used. Thus, having identical experiences, one can think about completely different objects of the real world, which confirms the truth of the externalist point of view.

However, these arguments are available only to an outside observer who knows that the water on the Earth's twin has a different chemical structure than H<sub>2</sub>O, and therefore, using the concept of "water", he is in a different psychological state, which is not identical to the psychological state of the above-mentioned inhabitants of two similar planets.

It follows that one can learn about the truth of an externalist point of view (that is, about the presence of different referents for equally used concepts) only from a position that corresponds to an internalist point of view (that is, from a position in which different referents correspond to unequally used concepts). As a result, it must be recognized that the "Twin Earth" thought experiment is not an argument proving the truth of externalism.

If, following H. Putnam in the thought experiment "Brains in a barrel", we imagine that a brain was taken from a person, placed in a special solution that supports its vital activity, and electrodes are connected to it, with the help of which virtual pictures are broadcast, then we must admit that the subject will be able to meaningfully perceive only what he has already encountered in real life.

Therefore, the situation shown in the film "The Matrix" is logically impossible, because the inhabitants of the Matrix from their very birth are in the virtual world and never see anything real, which, in accordance with Putnam's causal theory of reference, does not allow them to recognize a single image.

At first glance, it may seem that such a position does not hold water. Indeed, we can meet with unfamiliar objects not only in the virtual world, but also in the real one. Making a series of manipulations with them, or simply observing, or collecting the necessary information from third-party sources of information, we form a meaningful understanding of what we are dealing with. Such actions can be performed not only in the real world, but also in the virtual one, after which a meaningful understanding of the recognized object will be formed even when the latter does not really exist.

It follows that the situation shown in the film "The Matrix" is logically possible, and its inhabitants will have a meaningful idea of the world around them, not suspecting that its ontological basis is not a material substance, but a program code. However, in this case, the source of the content of mental experience will still be not internal states that mediate the interaction of the representing system and the represented object, but external processes due to the software of the Matrix that exists on the material substrate.

As a result, we conclude that the internalist point of view logically leads to the concept of subjective idealism, because the presence of a material environment necessarily makes it a source of mental content even in the Matrix or in the situation of the "Brains in a barrel" thought experiment considered above.

Intentional states are states of a vector order, determined by the orientation towards some state of affairs. For example, an amoeba placed in a drop of a poisonous solution demonstrates an escape reaction, which allows us to attribute to it intentional states that are determined by the desire to survive and find the most comfortable conditions of being. Strictly speaking, the manifestation of any pattern is intentional in nature, since the pattern contains a tendency towards a certain result.

When light is refracted from one medium to another, then, in accordance with the principle of Maupertuis, it "tends" to follow a trajectory on which the action equal to the product of the impulse and the path traveled has a minimum value. When the Earth revolves around the Sun, then, in accordance with the equations of Einstein's general theory of relativity, it "tends" to inertial motion along a geodesic line in a curved pseudo-Riemannian space-time.

When a robot plays chess, then, in accordance with its programmed program, it “seeks” to checkmate its opponent. Consequently, physical systems are naturally in intentional states that can be classified, systematized and hierarchized by tracing the evolution from the simplest intentional states inherent in elementary particles to more complex ones that already appear at the level of highly organized physical systems.

However, phenomenal states are not naturally inherent in physical systems, and therefore there is a problem associated with their appearance in the material world. For example, the hydrogen atom does not have any phenomenal states, since it is meaningless to ask what it is like to be a hydrogen atom. Apparently, it's pointless to ask about what it's like to be an amoeba. However, a similar question in relation to a bat would already be quite meaningful, and, therefore, we must explain how, at a certain stage in the evolution of physical systems, phenomenal states appear in them.

For D. Chalmers, there is no particular problem here, since, being a supporter of panpsychism (naturalistic dualism), he believes that phenomenal states are inherent in all physical systems, and, therefore, the question comes down not to how they arise in the physical world, but to how they evolve from the simplest forms to the more complex. If we do not agree with naturalistic dualism of the Chalmers type and want to remain on the positions of ontological monism, then in this case we must explain how the emergence of phenomenal states of matter in the physical world becomes possible.

The most economical way to solve this problem would be to say that phenomenal states are reduced to intentional ones, i.e. represent in essence a special form of intentional being, which is inherent in all physical systems.

Thus, a fundamental question arises: is mental experience homogeneous (is it possible to say that phenomenal states have an intentional nature and therefore mental experience, in essence, is characterized by only one intentional aspect) or whether it is heterogeneous (can it be said that phenomenal states do not have an intentional nature and therefore mental experience, in essence, is characterized by two aspects that are irreducible to each other - phenomenal and intentional)?

Consciousness is always someone's consciousness, and, therefore, no one, except for the conscious subject, can have direct access to the experienced subjective-mental phenomena. The scientific-materialistic understanding of the world encounters difficulties in trying to explain why an individual is aware of himself in his own unique being, different from the being of surrounding things.

In other words, why am I exactly me? On this occasion, the British philosopher S. Priest notes: “It seems to me that someone's own existence is in a very definite sense a “miracle”. It does not violate any laws of nature, but it should not be explained in their terminology.

Based on the phenomenal fullness of consciousness experienced from the inside, following the American philosopher T. Nagel, one can say that the mental state is a state in relation to which it makes sense to ask what it is like to be in this state.

He writes: "Whatever the forms of consciousness (on Earth and in space), the fact that an organism has conscious experience at all means that there is something that it means to be that organism... an organism has conscious mental states if and only if there is something that it means to be this organism for this organism itself. We can call this the subjective nature of experience".

The subjective-private specificity of mental phenomena, emphasizing the givenness from the first person, makes them fundamentally different from physical phenomena that exist objectively and have a givenness from the third person. The question of what a given physical thing is makes sense to any sentient being capable of perception and cognition, since it can examine its physical properties.

However, the question of what constitutes the experience of a particular subject in the internal phenomenal composition makes sense only for this experiencing subject itself, while for other subjects only the physical phenomena that accompany the experience under study are available, but the latter itself in the internal phenomenal composition can be investigated by them only by analogy on the basis of their own experiences, given in the first person.

In addition, the subjective-private characteristic of mental experience makes it possible to distinguish consciousness from unconscious mental states, because it is meaningless to ask, for example, what it is like to experience red color or experience shame in an unconscious state. One can talk about what it is like to experience the manifestation of unconscious shame on the conscious level of the psyche, but unconscious shame itself in its inner phenomenology is not experienced as something psychologically determined.

The phenomenology of conscious experience differs not only from the phenomenology of neural processes occurring in the human brain, but also from the phenomenology of unconscious experiences, because otherwise we get a logically contradictory concept of unconscious consciousness.

Every mental event is private and experienced in direct experience by a single subject, while other subjects have access only to the physical processes that accompany the mental event in question. Penetrating into the inner world of another person at the phenomenal level of consciousness is impossible under any circumstances, although at the intentional level of consciousness we are able to form a representative picture of the inner subjectively experienced life of another person.

If we assume that in the future scientific technologies will allow you to connect to the brain of another person so that you can experience exactly what he is experiencing (for example, to perceive his dreams), then all the same, the induced experiences will not be the experiences of the inductor (i.e., the subject, transmitting information), but the experiences of the recipient (i.e., the subject receiving information) with their inherent qualities of private-individual consciousness.

By scanning the human brain and digitizing the information received, we can learn to incorporate it into the brain of another person, but consciousness will remain fundamentally untranslatable, since it belongs to this particular subject, and not to any other, and, having become the consciousness of another subject, will lose subjective character, binding it to the subject, from

which a copy is made as a result of interpersonal translation. In other words, it is possible to transfer a thing, an emotion, a belief, an idea from one subject to another, but it is impossible to transfer consciousness, which is inseparable from the subject and constitutes the essence of his mental being.

The untranslatability (ontological isolation) of consciousness remains an unremovable barrier on the way to its objective cognition and logically leads to the installation of solipsism, because the monad-like isolation of the subject does not allow him to be convinced by any available means of the real existence of the external world.

In particular, the British philosopher, logician and mathematician B. Russell notes that “the solipsistic alternative cannot be refuted by deductive proof, if only we start from what I will call the “empiricist hypothesis”, namely from what we know without conclusions, consists solely of what we experience in experience (or, more precisely, of what we experience in the present) and from the principles of deductive logic. But we cannot know whether the hypothesis of empiricism is true, since knowing this would be such knowledge that the hypothesis itself forbids.

To cope with this epistemological problem, modern concepts of consciousness either undermine its personal belonging (as happens, for example, in functionalism and behaviorism, where the same consciousness can be realized on a variety of physical carriers), or objectify consciousness in the form of a certain property of material systems (as is observed, for example, in emergentism and dialectical materialism, where consciousness is a high-level property of the neural networks of the brain).

In a number of philosophical concepts of consciousness, for example, in panprotopsychism and neo-Russellian monism, the opposition between the subjective and the objective is reduced to the opposition between the internal and the external. Within the framework of this approach, the subjective is the inner side of the objective, and the objective is the outer side of the subjective. At the same time, a problem arises, which lies in the fact that the boundary of the internal cannot be localized in the external, since otherwise the internal dissolves in the external or, at best, becomes a form of its existence, while the subjective cannot be a form of the existence of the objective due to its fundamental non-objectivability, at least as far as consciousness is concerned.

If we cannot directly observe some entity, then this does not mean at all that it is not objectivable, but if it is not at all necessary to introduce any additional entities to explain the observed effects, then the latter are not objectivable.

For example, we have never seen and never will see subatomic particles, but we infer their objective existence from the effects they produce in a bubble chamber or cloud chamber. However, a completely different situation arises when we study mental experiences, because the external behavior of a person can be quite explained without appeal to subjective experience with the help of physical (neurophysiological, biochemical and bioelectrical) laws alone.

If researchers did not have subjective experience, they would not assume that subjects have something similar when they demonstrate a certain type of behavioral response. In other words, our conclusions in external knowledge about the existence of mental phenomena are determined

by internal knowledge about their private existence, and if this internal knowledge did not exist, then the studied phenomena themselves would not exist.

Thus, the analysis of the subjectivity of consciousness leads to two main variants of the ontology of the mental entity. In the first option, we recognize the existence of subjective experience as given in the first person and not objectified for the third person, but then it remains unclear how subjective consciousness can arise in an objectively existing physical world without the intervention of non-physical forces, since physical systems can only have physical properties, and physical causes can produce only physical effects.

In the second option, we do not recognize the existence of subjective experience as given in the first person and not objectified for the third person, but then mental phenomena (colors, sounds, smells, taste and tactile sensations) can be detected by scanning the brain in their internal phenomenal composition, and not in the form of their corresponding neurophysiological, biochemical or bioelectrical code, which leads us to deny the unique ontology of consciousness (if in the context under consideration we identify the coded and the coding in terms of their material essence) or to idealistic theories of consciousness (if in the context under consideration we endow the coded non-material essence along with its objectively fixed being in the form of a coding material structure).

The privacy of consciousness means its uniqueness, because the mental experiences of different subjects, unlike physical things, cannot be identical in their entire set of properties that characterize them. If two electrons are in the same quantum state, then they are in fact the same material body, since there are no identifiable differences between them. However, such reasoning does not work in terms of mental phenomena, because if we assemble a copy of the physical body of a person with an accuracy of elementary particles, then as a result we will get two non-identical consciousnesses that will differ from each other due to their private-individual existence.

Consciousness cannot be divided between several physically identical subjects, since each of them is aware of himself, and this makes him different from all his physical counterparts. When I am aware of myself, I am aware of myself as exactly myself, and if my physical copy is also aware of itself as exactly itself, then our mental experiences still differ in that each of us is aware of exactly himself, and not the other.

In the physical world, there are only physical bodies that have physical properties. Consciousness is not a physical body, since every physical body exists objectively and has a given in the third person, while consciousness exists subjectively and has a given in the first person. Consciousness is also not a physical property, because any property, including physical, has a universal character, and consciousness is individual, private and experienced from within by a single subject. This implies a methodological problem, which is due to the fact that consciousness, being a subjective phenomenon, does not belong to the physical world and cannot be investigated by objective scientific means.

For every person who is conscious, the very fact that he is conscious is revealed with evidential certainty and does not require special proof, but as soon as we try to convince someone else, using scientific and philosophical reasoning, that we also have consciousness, then immediately we are faced with methodological difficulties.



There is no objective criterion by which one can prove the existence of an inner subjectively experienced life in a particular person. However, we say that there are a number of signs by which we determine whether a given person is conscious or not. For example, we point to behavioral reactions and parameters of the electroencephalogram of the brain, but in this case an epistemological contradiction arises, since scientific methods do not allow us to reliably establish a correspondence between the objective data obtained in the experiment and the subjective existence of consciousness.

Indeed, we fix objective data with the help of direct observation or special equipment, but we can establish their correlation with the presence of mental phenomena only by the verbal report of the subjects involved in introspection, while the introspective report in the framework of such a study is subjective in nature and is not tested by objective scientific methods. means.

Strictly speaking, the presence of mental experience in other people is a matter of faith or, at best, a conclusion by analogy, which does not allow consciousness to fall into the focus of objective scientific research. Scientists are successfully studying cognitive functions, such as thinking, perception, imagination and memory, but consciousness remains outside the scope of scientific intention, since laws and signs are not known today that would prohibit these cognitive functions from being realized at the unconscious level of being.

With the help of objective scientific methods, we study the neural processes that accompany private-subjective experience in the human brain, but the latter in its phenomenal content is not reduced to processes of a neural nature, and therefore their objective scientific study is irrelevant to the study of mental phenomena.

Therefore, we can agree with R. Descartes that consciousness is a necessary condition for mental existence, and if it is absent, then no actual mental activity is observed. However, consciousness does not exhaust the entire depth of mental existence, and one should recognize the existence of another, unconscious, level of the psyche, which accompanies consciousness and forms a single ontological whole with it. So, continuing the analogy between consciousness and "light", we can say that there are no mental states in which the intensity of "light" drops to zero, because in this case it is no longer necessary to talk about mental content.

Even in the deepest states of hypnotic or somnambulistic trance, there is a certain amount of consciousness, even a very small one, but still diluting the unconscious "darkness" with "light". It may be so slight that upon returning to normal waking consciousness, the person will not remember what exactly happened to him when he was in a state of deep trance.

On the other hand, the mental state, when the "light" of consciousness completely conquers the "darkness" of the unconscious, is also unattainable, as well as the opposite state of absolute unconsciousness of a mental nature, since otherwise we come into conflict with the principle of topographic unity.

However, given the possibility of a special state of consciousness, when nothing unconscious remains at the mental level of being, which means that conflicts associated with the opposition of conscious and unconscious attitudes are resolved, and the subject, plunging into the experience of the present moment of time, acquires ecstatic harmony with the whole world around him. , it is necessary to make an adjustment to the principle of topographic unity and allow for a special

peak experience of a mental nature, when consciousness completely displaces the unconscious, as a result of which the subject reaches a state of ontopsychological integrity (spiritual enlightenment).

Information symbols do not affect symbolized objects, but the latter affect the nature of information symbols, while existential symbols affect symbolized objects, revealing their essence, and the latter affect existential symbols, determining their being. For example, the visual image of a thing depends on the thing itself, but the latter does not at all depend on its visual image.

In contrast, the self-esteem of a person depends on her behavior, which is represented by value judgments, and the behavior of a person depends on her self-esteem, which is represented by behavioral patterns, as a result of which a change in self-esteem leads to a change in behavior, and a change in behavior leads to a change in self-esteem (why, in fact, speaking, we ascribe an existential character to the being of man, in contrast to the being of things).

Mental experience is an existential symbolization of the unconscious content that is manifested through the content of mental experience. Since unconscious experiences receive their essential certainty only in interpretive acts of consciousness, and the latter are ontologically rooted in unconscious experiences, the unconscious turns out to be the ontological boundary of consciousness, which changes depending on changes in the neural code underlying mental experiences, and changes in structural and semantic features. Interpretation, while consciousness, for its part, turns out to be the ontological boundary of the unconscious, which changes depending on the change in the latent content of mental experiences.

If everything mental (conscious) is subtracted from the mental, then the remaining unconscious will be a collection of neural processes devoid of mental phenomenology. If, however, all the unconscious is subtracted from the psychic, then the conscious will lose its ontological support, for it will no longer symbolize any existential content. Any mental experience acquires its existence only in a wider unconscious context, which, on the one hand, is symbolically manifested by this experience, and, on the other hand, determines its latent being.

Thus, the unconscious, as precisely the psychic, exists only in relation to the conscious activity of the representing subject (as its ontological boundary), while unconscious zombies, strictly speaking, do not have not only conscious, but also unconscious being, i.e. they cannot be considered psychic beings at all due to their lack of internal phenomenal content, which cannot be reduced in essence to the physical processes occurring in the neural networks of the brain.

To be continued...

Thank you