

Peer Review

Review of: "On the Hard Problem: Revisited, Re-Evaluated, Recast"

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The article is a very interesting comprehensive approach to the issues related to the so-called “hard problem of consciousness”. Its value is expressed mainly in the fact that it shows a wide perspective on the title issue both in philosophical and scientific terms. In my opinion, the part devoted to pre-scientific theories of consciousness could be expanded, but I understand that according to the authors, it would go beyond the scope of the article. The problem of consciousness is a unique one, among other things, because consciousness is constantly escaping scientific cognition, although this is something that is given to us directly as the realm of subjectivity. The authors of the paper also point out these difficulties. The article is part of the trend of developing comparative analysis of scientific theories of consciousness, which, as A. K. Seth and T. Bayne (2023) point out, is the right way to understand this still mysterious phenomenon. I believe this is a true point of view. This is due to the fact that, in my opinion, progress in science is cumulative, and research on consciousness is no exception.

I think that the currently conducted scientific attempts to understand the phenomenon of consciousness should refer more to the achievement of one of the fundamental theories of modern physics – quantum mechanics. As everybody knows, this is a theory that has various interpretations. I would argue that one of the most interesting attempts to explain the phenomenon of consciousness rooted in quantum mechanics is the Penrose–Hameroff theory of ‘orchestrated objective reduction’. The aforementioned authors summarize their theory in the following words: “We proposed in the mid 1990’s that consciousness depends on biologically ‘orchestrated’ coherent quantum processes in collections of microtubules within brain neurons, that these quantum processes correlate with, and regulate, neuronal synaptic and membrane activity, and that the continuous Schrödinger evolution of each such process terminates in accordance with the specific Diósi–Penrose (DP) scheme of ‘objective reduction’ (‘OR’) of the quantum state” (Hameroff, Penrose, 2014).

In short, according to this concept, consciousness is treated as an important element of the laws of nature that we do not fully understand yet. In my view, it is worth expanding the article about the above concept of consciousness also because it opens further research perspectives in the sense that it implicitly assumes the possibility of the existence of a more fundamental theory than quantum mechanics, or at least some important modification of the latter one. The possibility of scientific progress is based on the assumption that no theory is final. Moreover, the 'Orch OR' theory has great explanatory power and seems to be easily falsifiable (Hameroff, 2021). In general, it can be assumed that the theory is falsifiable if there is one or more sets of possible observations that could disconfirm the theory.

In general, I believe that attempts to explain the phenomenon of consciousness by reducing it to certain elements of our experience, regardless of their ontological status, are doomed to failure. Consciousness is not a correlate of what we are conscious of, but a condition of all conscious experience as such. In other words, it is not one of the objects of our scientific knowledge in the ordinary meaning of the term. I am aware that this is a philosophical view. However, perhaps a strengthening of the philosophical conclusions from the article would increase its value.

I would like to congratulate the authors because, in my opinion, they have managed to present a rich landscape of research conducted on the phenomenon of consciousness. The article organizes the issues of the so-called "hard problem of consciousness" and thus is a valuable stage in the development of research on the fundamental philosophical and scientific problem which is consciousness.

Works Cited

Hameroff, S. (2021). 'Orch OR' is the most complete, and most easily falsifiable theory of consciousness. *Cognitive Neuroscience*, 12(2), 74-76.

Hameroff, S., & Penrose, R. (2014). Consciousness in the universe: A review of the 'Orch OR' theory. *Physics of life reviews*, 11(1), 39-78.

Seth, A. K., & Bayne, T. (2022). Theories of consciousness. *Nature reviews neuroscience*, 23(7), 439-452.

Declarations

Potential competing interests: No potential competing interests to declare.