Review of: "The Brain as a Filter: Introducing a Quantum Ground into Integrated Information Theory"

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Laws of nature describe relationships between physical entities but not the qualities of the entities themselves. E.g., there is no law from which follows that massive objects exist, and why they have the property of "mass". In this sense, natural science is incomplete. However, these are the properties that appear in consciousness, and this is not understood. The author considers that the spectrum of such properties forms a large multidimensional space. On the other hand, quantum mechanics is organised in terms of a still much larger multidimensional state space encompassing the entire universe, again with properties that cannot be understood in usual terms, manifested, e.g., by the phenomenon of entanglement. The idea of the present communication (as such, not new) is that the brain is a kind of filter that selects entities from the quantum mechanical space which are then the elements of conscious experience. According to this view, the phenomenal contents experienced by an individuum have a worldwide common root which is tapped by all individuals having consciousness. - Which properties enable brains to do this tapping? As an answer, the author hinges that idea on the Integrated Information Theory (IIT) of G. Tononi et al., which says essentially that a strongly integrated structure has consciousness when it contains more information than the sum of its parts (hopefully I have understood this correctly).

The article is well-written, and the ideas are clearly exposed. Possible doubts are mentioned, and there is a large and relevant list of literature. However, neither the roles of that quantum mechanical background nor of consciousness are addressed in an elucidating way. Consciousness appears only in relation to the "Default Mode Network" of the brain and to verbal reports about experiences with psychedelics, such as LSD and psylocybin, or with meditation. To me, consciousness is much more related to down-to-earth phenomena such as "seeing," i.e., visual perception, which emerges as an entirely unexplained phenomenon from ordinary neurophysiological processes.

Yet, the propagation of the principal idea merits publication: The ensemble of phenomenal contents of consciousness might stem from a kind of universe-wide huge reservoir, instead of being generated within a brain. Even if one disagrees about the details, that idea might widen the spectrum of thoughts about consciousness. (I can give 5 stars only for a full explanation of consciousness, which will never be reached.)