Editorial

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Editors

The present issue of this journal collects articles which have one theme in common: they anchor their deliberations about conscious experience in physics – more precisely, quantum physics. However, their physical intuitions are taken from different interpretational agendas: the Montevideo interpretation by Gambini and Pullin, Bohm’s implicate order and holomovement, the quantum field theoretical approach to the brain by Umezawa and Vitiello, the participatory realism of quantum Bayesianism and, related, John Wheeler’s speculations about an ontological basis of quantum theory.

Rodolfo Gambini and Jorge Pullin, two pioneers of the program of loop quantum gravity (one of the current approaches to bring together quantum theory and gravitation), sketch out a framework that they propose for understanding neural (physical) correlates of conscious (mental) activity. They argue that the unity of conscious experience cannot be accounted for by a brain that is conceived in terms of the “lego model” of classical physics. Instead, entangled quantum states (or something near enough), emphasizing a holistic ontology, are required as a conceptual element to model conscious experience as an essentially holistic phenomenon.

Their philosophical position is neo-Russellian: a quantum-inspired ontology that includes both the extrinsic properties of physics and, in addition, intrinsic properties relating to a spectrum of mentality from basic protophenomenal experience to the more differentiated mental activity of humans and other animals. Technically, they suggest a model with a two-staged architecture for developed consciousness: (1) classical neural networks which integrate information in the sense of Tononi’s “integrated information theory” and (2) a quantum kind of processing of this information that splits into third-person and first-person components. A recently suggested model by Matthew Fisher at UC Santa Barbara, vaguely resembling but also extending earlier ideas on quantum processes at synaptic transport by Friedrich Beck and John Eccles from the 1990s, is outlined as a possible concrete implementation of the proposal.

George Williams presents a tour de force through the philosophically motivated ideas of the physicist David Bohm. It begins with his work on nonlocal hidden variables for quantum mechanics of 1952 (the famous-infamous B52 paper) and culminates in his proposal of a common ground, the implicate order or holomovement, from which the mental and the physical derive as differentiations. A key ingredient of the implicate order
is the concept of active information, an implicit type of meaning that can be explicated in terms of relations between the mental and the physical.

Williams admits that Bohm’s metaphysical ideas do not have immediate consequences for the physics that they underlie. But he speculates that they might shed light on an understanding of (so-called anomalous) phenomena that relate the physical with the mental. Bohm’s metaphysics is intended to provide a basis for both the physical and the mental, so it may indeed offer the potential to say something about phenomena that cannot be sufficiently understood by physics alone (as controversial as studies of such phenomena may be). A remarkable thesis, which also might require us to consider an extended concept of scientific realism with which the author concludes his paper.

Gordon Globus offers an account of the mind-matter problem that seems radically idealist on the surface: there simply is no external (material) world around us. He refers to dreams and even lucid dreams to intuitively introduce this thesis: it is our minds (he says brains) that create the impression that there is something like a world outside. Our mental activity is all there is, and it generates what Heidegger’s philosophy calls “thrownness into existence”. As one reviewer said, an approach that should be examined “as a logical possibility”, even if it appears pretty much counterintuitive.

Globus argues that quantum field theory à la Umezawa, whose application to brain science was later developed by Vitiello and collaborators, provides a formal basis for his claim. Irrespective of all the details, a key feature of this formal account is that all reality is to be conceived quantum at its core, no matter whether at micro-, meso-, or macroscopic scales – so that the apparently classical world around us also becomes ultimately quantum.

Within the framework of “quantum Bayesianism”, an account of quantum theory pioneered by Chris Fuchs, quantum theory is essentially understood in terms of subjective experience. The QBist program investigates how far the quantum formalism in general, and the issue of quantum measurement in particular, can be reduced to subjective belief states of agents, without direct reference to ontic states of systems “out there”. Therefore, Globus finds QBism to be a congenial partner for his claim of a “non-existing outside reality”.

Dean Rickles reconsiders the question of an ontic reality of an external world along the lines of John Wheeler’s philosophical ideas, his “Johtology”, which have been influential for QBism as well. Wheeler, similar to Bohm and Pauli/Jung, put major emphasis on a reality beyond (or underneath) mind and matter, space and time, which he saw to play a significant role for the notion of “meaning”. Observer-participancy is the implicit source of all explicated reference relations that may turn into the experience of meaningfulness.
Although QBism attempts to push quantum theory into the epistemic as far as possible, it does not altogether deny external reality. As ineffable as such a reality may be, this does not imply its non-existence. Even if ontic quantum states could be entirely nixed in the formalism of the theory, this does not imply that there is literally nothing out there. Bohr’s and Wheeler’s “Great Smokey Dragon” visualizes this way of thinking. Rickles expresses his take on the question with the search for ontic structural invariants, beautifully illustrated by Philip K. Dick’s tenet, “reality is that which, when you stop believing in it, doesn’t go away!”

The issue concludes with two book reviews. Paul Sharpe presents one of the most original and comprehensive textbooks on consciousness studies available as of today: the third, revised and updated edition of *Consciousness, an Introduction* by Susan Blackmore and Emily Troscianko. The 618-pages and 115-illustrations volume offers the enormous range of topics that one of the great mysteries for our understanding, the nature of consciousness, covers – from philosophical, psychological and neuroscientific points of view.

Why is the problem so hard as it appears, and why is it that we do not even have a concise and recognized definition of consciousness? These and many more key questions are examined in the book. Accompanying material, including for instance suggestions for video, film, television and other informative resources, is accessible at [https://routledgetextbooks.com/textbooks/9781138801318/](https://routledgetextbooks.com/textbooks/9781138801318/). As Sharpe indicates, the book also invites readers to delve into personal intuitions about the self, about altered states, and about potential pitfalls that may be avoided as we begin to experience and reflect on our mental activity with sufficient scrutiny and subtlety.

Finally, Dwight Holbrook reviews *Beyond the Dynamical Universe*, a monograph authored by Michael Silberstein, Mark Stuckey and Timothy McDevitt. The book attempts a synthesis of major issues in our understanding of contemporary physics on one hand and experience, in particular experienced time, on the other. This review focuses on the tension between physical and experienced time, on which the author has worked himself (see his recent *Blink of an Eye*).

Major parts of the book investigate the thesis of a block universe. In a block universe not only present but also past and future events exist, so that there is nothing “objectively” special about the present. How can this be reconciled with the experience of nowness that seems so special for mental awareness? The authors propose a neutral monist basis of their blockworld idea in non-dual presence (not presentness), a mode of existence without all those distinctions that cognitive discursive work requires.