

Peer Review

Review of: "A Heuristic Sketch of How It Could All Fit Together with Time"

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In principle, I am sympathetic to many of the suggestions made in this paper; I like that the author has emphasized the role of contextuality and appears to be unenthusiastic towards some of the more extreme theories currently circulating in physics.

The argumentation is predominantly of a philosophical nature – some of the arguments would be more convincing if supported by actual calculations and possible falsifiable predictions.

It is not clear whether some of the examples presented to justify certain positions are of a purely theoretical nature or have an empirical component. Appeals to quantum mechanics are somewhat problematic because there is not one single theory of quantum mechanics. There are a great many heuristic approaches, such as path integrals, which often are accorded an ontological status that they do not actually entail – I think that the author needs to be more precise in describing the nature of some of their evidence.

It would help too if the author were more precise in stating what kind of time they are talking about, as I had the impression that different notions of time were being conflated. Barry Dainton's book 'Time and Space' is an excellent resource, as are books such as 'The Reality of Time Flow: Local Becoming in Modern Physics' by Richard T.W. Arthur, or 'Process and Time' by W. Sulis.

Some of the arguments around time reversibility, entropy, and space-time seem to lack depth and rigour – these are subjects that have been highly explored in both the physical and philosophical literature, and counterarguments are not well presented. Again, see the books above or recent papers by Hardy.

Overall, the paper is interesting and provides food for thought.

Declarations

Potential competing interests: No potential competing interests to declare.