

Review of: "Quantum Entities and the Nature of Time"

Eugen Schwarz¹

¹ Universität Siegen

Potential competing interests: No potential competing interests to declare.

1927 was an important year concerning the interpretation of QT. Now we are nearly a century further, and many views have become somewhat obsolete. I would not subscribe the author's starting statement "The conceptual statute of modern quantum theory was formulated during the 5th Solvay Conference in 1927 and since then accepted as definitive.". One might absorb some of the conceptual advances since the 1920s. And one may cite more recent papers on quantum interpretations including quantum realism, and decoherence of quantum systems in the world's environment.

Experimentalists living in the real world measure physical quantities and find one, two, etc. components each given by more or less sharp ranges such as $1.23(\pm 4)$. That are never real numbers. - Physical theoreticians found that within the ranges of the observed (vectorial) quantities and within the ranges of computational accuracy, the observations can be reproduced within the mathematical model of complex differentiable (holomorphic; analytic) functions.

Particles apparently appear out of wave-packets if one reduces the resolution of observation. Quantum jumps appear if one discards the world surrounding the focus. I admit that in most cases there is no way out of these approximations. But I do not admit that approximations describe reality exactly.

Human language is great: one can easily create grammatically correct sentences, e.g. "What is the relationship between vacuum and space". Defining the physical meaning of the words is much more difficult.

My impression is that the main problems discussed in this article are problems of human language.