

Peer Review

Review of: "The Vicarage Iconoclast: Whitehead, Leibniz, Relativity and the Quantum"

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The Vicarage Iconoclast review

I was asked to provide a review of this enjoyable paper but must start with the disclaimer that I am referenced in the paper, but I have tried to be neutral in my comments. I leave it to others to decide if I succeeded. Overall, I found the paper to be quite enjoyable even if I sometimes disagree with the author.

Take paper takes the form of a dialogue, which I found quite enjoyable. It made the debate lively and engaging, rather than the dry, academic tone usually found in the philosophical literature.

I am not an expert in Leibniz's theory of monads, so this section was enlightening, although a bit difficult to follow. As for Whitehead, for me the primitive events are the becomings of actual occasions. Those experiences that we call 'events,' such as measurements, are already very complex processes and sequences of more primitive events. I don't like ontologies that make everything about humans, about observers. We are already far up the ontological food chain – very, very far removed from whatever is taking place at the most primitive levels. We can speak about us, and about what we base our models of that reality upon – but that is still mostly about us. I can give a reference to a paper by Nieuwenhuizen which models an actual measurement process. It is not the application of a self-adjoint operator to a physical system. It is 100 pages or so of complex physical interactions. For me, wave functions are merely mathematical tools for computing the probabilities of occurrence of particular types of events, namely those associated with certain physical measurements. The value of a wave function is not an event. A wave function has existence as a piece of abstraction, but it has no existence 'out there'.

It seems to me that monads might be confused with actual occasions, but for Whitehead, actual occasions are not processes. They are the outcome of the actions of processes. Processes interact, and in doing so

become altered, to become new processes. The actual occasions I think of like the tokens on a scratch pad, or the pixels on a TV screen. They represent information; they are tokens used by processes to do what they do, to make new tokens during the next becoming. Tokens don't move; pixels don't move. The information contained within or represented by them changes moment to moment. But the actual entities are the processes which place them, or alter them, that control the information flow. Processes do not have any simple spatial or temporal localization. Think of mental processes, or organisms. Their 'locality' is illusory, a naive application of physical ideas of center of mass, when it is function that defines them, and that function does not occur properly without an environment. There is a symbiotic-like relationship there. I agree that such processes must involve the environment, although I cannot go so far as Leibniz and Whitehead and assert that actual occasions contain the totality of the Universe within them. I do think that they do incorporate some information about some features of their local environments. But to go further seems extreme to my mind, and not necessary.

Of course, I do not know Leibniz well, so my comments about his monads may be completely wrong. For the novice reader, perhaps a very brief explanation/description of Leibniz's concept of monads would be helpful.

The debate about internal versus external relations is important and deep. Again, for the novice reader, perhaps an example of the difference would be helpful. As a mathematician, I was not really clear on what the fuss was about, but that may simply reflect my failings in understanding the philosophical issues at stake. I obviously need to read more Leibniz to understand what he means by perceptions here. Whitehead's theory suffers from its use of language. He uses a lot of language that refers to organisms, which is fine, but then applies it to all entities generally. I think this misuse leads to more confusion than clarity.

I agree with the comments about Whitehead's theism. There are parts of his theory that just don't work for me, in large part because of language, but also his recourse to God. To my mind, the Universe must be viewed as a closed system (unless the multiverse people are proven correct, in which case I will be eating a lot of humble crow pie), and if so, there should be no recourse to God, who must stand outside of the Universe, as I do not see how God could create himself. And so this simply doesn't work for me. I also don't see the point. There is no reason to have an infinite regress of processes (with one exception being that related to time – that is an open question). There can be a bottom just as there is a top – the Universe as a whole. So I ignore his invocation of God and put it down to a sign of the age in which he lived.

I really valued the reference to Robb. His work is most interesting and sadly ignored by most modern writers on space-time structure.

Arthur and I disagree, I think, on ideas of ontological versus metrical space and time. I think that there is a need for interval orders, not instantaneous orders. But neither Robb nor Whitehead should be faulted for not knowing a mathematical structure that wasn't even conceived of at that time. Fishburn's paper on these came out much in 1985.

I am not so against ideas of subjectivism, but one must be very careful in delineating the role that it plays in nature. I think I agree with Arthur that it does not play a fundamental role as some quantum physicists like to suggest – to make a case for a role for consciousness, for example, one must attribute consciousness to everything, or how to explain why only human consciousness has significance? Those who attribute consciousness to everything, I think, stretch the concept so thin that it ends up lacking any substance at all. I do think information is important, but meaning-laden information, not merely the entropy-related notion so common in physics.

I could go on, but I will stop there. For the most part, I agree with Arthur, and where we disagree, I have found his challenges very interesting and productive. I enjoyed the style of the paper – the dialogue format is too little used these days and made the paper entertaining as well as thoughtful. Too much philosophy is dry and bogged down with excessive technical language (and obsessions with minutiae). I would recommend the paper to anyone interested in Whitehead's thought and its relation to earlier thinkers.

Declarations

Potential competing interests: No potential competing interests to declare.