Response to Commentary

Response to Crowell's Commentary

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Here is my response to Crowell's Commentary [1] on "The Virtual Reality Conjecture [2]":

1. *The paper by Brian Whitworth explores the question on how epistemology might precede ontology. If we think of classical mechanics as built up from a quantum world of wave functions, which are most often interpreted as epistemological, then the ontological aspects of the world in some manner emerge from epistemology.*

If epistemology is the study of knowledge and ontology is a structure of knowledge, then the former need not precede the latter. However in an epistemological conflict between rationalists like Kant, who felt the mind could have innate ideas apart from the senses, and empiricists like Hume, who felt that everything derives from the senses, this model would not support the latter and might support the former. Certainly it supports mathematical realism that mathematics describes what really happens.

2. *The boundary between the epistemological and ontological is then a mysterious problem with physics, which remains today.*

In this model, the boundary between the quantum and the classical is as that between a processor and a virtual world it creates. The laws of the virtual world need not be followed by that which processes it.

3. *Brian Whitworth's thesis boils down to the idea quantum mechanics provides a processing background from which reality is derived. Of course the term reality generally refers to local reality.*

I would prefer to say that quantum mechanics provides a processing background from which *physical* reality is derived.

4. *A review of Bell's theorem is worth considering*

It is a good review, but of course Bell's theorem is well established.

5. *The conjecture of virtualism is worth laying on the table of possibilities. It strikes me if it is true to potentially be some sort of G¨odel theorem result applied to physics. The formal system QM has that contextuality is not provable.*

Yes it at least deserves consideration - given the lack of progress of the alternatives. I agree that contextuality is the key, as you mention. The context that QM has come unstuck upon is

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the observer context, which is the ultimate context. This model begins by accepting observation as real, which implies an observer and an observed. Then rather than taking the observed as real and the observer as somehow derived, it takes the observer as real and the observed as derived, i.e. virtual. It is unconventional but quite logical, or at least as logical as taking the observed as real.

6. *Unfortunately there are some physics problems with some of the arguments in the papers. The idea that a lepton is an "extreme photon" is clearly wrong.*

The proposal is that two extreme rays of light, each of *many* extreme photons, colliding head-on will give a lepton, not that one lepton is one extreme photon. An extreme photon is defined as one whose wavelength is two Planck lengths. This is not at all clearly wrong, firstly because the processing result has the properties of leptons, e.g. it explains why electrons and neutrinos are both leptons, and secondly because the experiment has not yet been done, as physics has built particle accelerators not light accelerators.

7. *The grid argument is also suspect, where this leads to Lorentz violations which have been ruled out by FERMI and INTEGRAL data.*

It is unclear to me how the grid argument leads to Lorentz violations. The model is almost based on complex number theory. In it, the grid creates our space and time and there is no fixed node to pixel mapping. One cannot naively assume a grid in a fixed space, or that a node maps to a point in space, or it runs in a fixed absolute time. The grid proposed is not a physical grid, as quantum waves are not physical waves.

8. *There are other occasions of nonstandard argumentation with physics present as well. It is advised that if the reader is to garner the main thrust of this paper that these specifics be considered appropriately.*

The argument of the whole paper is of course non-standard with respect to current physics, which it suggests is largely based on the out-dated nineteenth century idea of a particle that has nonetheless become doctrine. Yet the theory does not challenge the *findings* or the *mathematics* of current physics, indeed it purports to better explain them. It just challenges the theory. Being non-standard is not the same as being wrong, as the history of science shows.

References

1. Crowell, B. L. (2011), Commentary on Whitworth's "The Virtual Reality Conjecture." Prespacetime Journal, V2(9): pp. 1445-1447.

2. Whitworth, B. (2011), The Virtual Reality Conjecture, Prespacetime Journal, V2(9): pp. 1404-1433.