

Saturday, January 29, 2011

Does the Double Slit Experiment Refute the Primacy of Existence?

A visitor to [my website](#) sent me the following question:

I somehow came across your validation text of the primacy of existence, and found it very enlightening and interesting to read. However, it got me thinking of a quantum mechanics experiment I have heard about, the Double Slit Experiment. Have you heard of it? I have studied neither philosophy nor physics but am greatly interested in both, and my intuition told me that the double slit experiment contradicts the primacy of existence. Since you seem very adept at organising thoughts and arguing theories as these, I felt like asking you what you think of this matter.

Doesn't the fact that the behaviour of electrons, when shot through a double slit, alters from wave-like patterns to particle patterns, through the act of observation challenge the primacy of existence? It is like the electrons themselves become aware of us being aware of them, and therefore alters their behaviour. In other words, they become conscious of our consciousness and changes their existence, meaning their existence becomes relative to our awareness, nullifying their primacy.

The article pertaining to the primacy of existence on my website which the inquirer mentions can be found [here](#).

The inquirer also mentions the so-called Double Slit Experiment. A brief video describing the Double Slit Experiment can be found [here](#).

My response to the inquirer's question follows below:

Thanks for your question.

You ask: "Doesn't the fact that the behaviour of electrons, when shot through a double slit, alters from wave-like patterns to particle patterns, through the act of observation challenge the primacy of existence?"

Yes, I am aware of the double slit experiment, and I have actually written on it, since some folks apparently think its results contradict the primacy of existence. But can you tell me who observes the behavior of particles at the quantum level, and by what means? The double slit experiment is often described as having a different outcome (e.g., a banded pattern as opposed to an interference pattern) when someone "observes" the electrons passing through the slits in the experiment. But who's doing the "observing" here? No one that I know of can *perceive* an electron with the naked eye. (If you know of anyone, please identify him or her.) It is said that a "measuring device" is used to capture this information, but a measuring device is not the same thing as a human being (or any other biological organism) "observing" what the measuring device is measuring. A fundamental distinction seems to have been ignored in deriving the conclusion that "merely observing" the electrons in the experiment alters the experiment's outcomes, which - if that's what has happened - seems very sloppy to me.

Needless to say, there is no prima facie violation of the primacy of existence occurring when the presence of a physical object has an impact on other physical objects in its immediate vicinity. Whether it's the earth orbiting the sun because of gravitational pull, or the after wash of a tractor trailer blowing a bicyclist on a road when it passes him, physical objects acting upon other physical objects produce physical effects. So the presence of a "measuring device" in the double slit experiment altering the outcome of the experiment does not in any way suggest to me that the primacy of existence has been violated.

Now if the behavior of the electrons in the experiment conformed to the scientist's wishes, emotions, imagination, temper tantrum, or commands, then you could feasibly say that we have an

instance of a violation of the primacy of existence. But no scientist that I know of claims that this is what is happening in the double slit case. Nor do I know of any scientists suggesting that electrons possess consciousness, as if the electrons in the double slit experiment are mischievously playing some kind of trick on us. But even supposing the electrons were conscious, and had the capacity of motor control (as we have, such as when I lift my coffee cup to my lips), their behavior would not in any way nullify the primacy of existence. Rather, they would be acting according to their identity, just as I act according to my identity when I take a sip of coffee. In neither case, there is no violation of the primacy of existence so far as I understand the mechanics and procedures of the experiment.

QM is admitted, by virtually every scientist in the field, to be a realm of mystery. It's best not to try to shape one's understanding of philosophy on the basis of a field of science that is still in its infancy.

I hope that helps.

Regards,

Dawson

The inquirer replied to my answer with the following statement:

It seems I was right in asking you about this since you made several things clear to me. I didn't realize how vital the distinction between a measuring device and an observing organism. Neither did I reach the conclusion that should electrons be conscious, would they still not nullify the primacy, but just be acting on their identity. It seems your validation on the primacy of existence was not enough for me to grasp it all but needed this mail conversation as well to realise that physical interference was not a way for consciousness obtain primacy. You've convinced me of the primacy of existence:) thanks again!

Your thoughts, questions, reactions are welcome.

by Dawson Bethrick

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posted by Bahnsen Burner at [7:00 AM](#)