



BP – Observer Effect

According to **Amherst physics professor, [Arthur Zajonc](#)**, who wrote a book on light and convened many scientists in a discussion of it and the new cosmology, ***"each of these features of quantum physics requires a profound reconceptualization of our world and even of the role we play as observers."***

"We used to think of the universe as "out there," to be observed as it were from behind the screen of a foot-thick slab plate of glass, safely, without personal involvement. The truth, quantum theory tells us, is quite different...the observer is inescapably promoted to participator. In some strange sense this is a participatory universe." [John Wheeler](#), Princeton physics professor (quoted at a Nobel conference)

The act of observation or measurement affects what's being observed/measured. Whatever we put our attention on is an act of observation and consciousness and we can choose. The frontal lobe gives us the capacity, the power to choose where and how we focus our attention. We are observers and as such are part of bringing "reality" into existence...collapsing potentiality into actuality.

Because of the role of the observer in collapsing waves of possibility through direction/quality of attention or consciousness (or light), meanings we assign can actually physically alter our reality. I am not talking about meaning as a way we prioritize or justify likes and dislikes. Neither is John Wheeler. He is saying that, contrary to the modern, mechanistic model of a meaningless, accidental universe, the philosophers of old were right: meaning is at the center of the universe...not just at the center of our personal lives. By choosing (consciously or unconsciously) what we put our attention on and the meanings or "reality" we assign, we collapse waves of infinite possibility into material actualities. [Consciousness is causal](#)

The quantum findings and interpretation describe a universe far more responsive and fundamentally interactive, where inner states of consciousness affect physical matter. Unfortunately we have been taught that emotions or mind don't really exist, they are only chemistry doing its mechanistic thing. Conventional science and consensus reality state that consciousness is secondary, a by-product of the brain.

However, there is - and has been - incontrovertible evidence that mind affects matter, that indeed consciousness is a causal reality. Just look at the [placebo effect](#).

The materialist doctrine - as many eminent scientists have long been concluding - is taking last breaths. The tools and much of the methodology is fabulous, but tools are not the map. We have confused empiricism as methodology for physical measurement with a guide for what's worth investigating.



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"Not everything that counts can be counted and not everything that can be counted counts." Sign hanging in Einstein's office door.

Here is a short video, which explains/illustrates quite well an example where presence of an "observer" can modify a procedure, its results and therefore also final available data:

<https://www.youtube.com/watch?v=DfPeprQ7oGc>

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Evan Harris Walker (the Physics of Consciousness):

"...despite this progress toward a pragmatic interpretation of quantum mechanics, we do not entirely escape the problems that have beset our efforts to understand the reality that lies behind the practical use of Heisenberg and Schrodinger's quantum theory. It is this understanding of reality, not the use of equations that physics is all about. We, as physicists, are trying to find out how nature really works. We can use equations for that description, but the equations must lead not simply to engineering results, but to an internally complete and self-consistent picture of reality. We had thought we had a valid picture of reality in the billiard ball world of Newtonian physics. Quantum mechanics has shown us that such simple pictures are not adequate. Now we have a picture in which the processes of the world, small or large, micro or macro, simple or complex, of few objects or of many, have to be represented by this collection of probabilistic pictures – by possibilities. These possibilities, these potentialities, become actualities when we carry out a measurement...what does this word measurement mean? It means observation. When we actually observe, or interact with, any system, then the system goes into one state.

...One might assume that this state vector collapse occurs when we disturb the system by having some measuring device interact with it in order to make a measurement on the system – that is, when the outside world interacts with it. But that is not how quantum mechanics works...observation is just a euphemism for consciousness, for mind."

The hidden nature of matter. The "hidden, missing variable" theory was not in favor with the status quo or we'd be looking at the universe, and ourselves, quite differently. We would be looking for an **information principle**, or consciousness.

Like this:

EH Walker con't - *"When we carry out a complete measurement loop the math will force the whole thing to have nice, steady real solutions only if one of the states happens and all the other states vanish. When the loop closes state vector collapse is forced to happen. It is this measurement comparison, this coming together of the two sides of reality...the link between*



measurement loops as the cause of state vector collapse and the observer as the cause of state vector collapse.”

“...by adding an information term [consciousness] to the Schrodinger equation, we could get an expression that would force state vector collapse. What happens is that all the probabilities become either 0 or 1, which means that each state either does not occur or does occur.”

Conscious Acts of Creation [William Tiller](#) former dean of Materials Science and Engineering at Stanford...from his primary research and experimentation 2001:

“Most of the general public hold the idea that the vacuum is not only the absence of physical matter but that it is also devoid of anything! However, this is not so. For QM and relativity theory to be internally self-consistent theories, the vacuum is Required to contain an amazingly large inherent energy content....This makes energy stored in physical matter a mere whisper compared to that stored in the vacuum. Uncovering the secrets of the vacuum is obviously a very important part of humankind’s future...The implication is that the particle event in D-space is intimately and lawfully connected to the pilot wave event in R-space. R-space wave events can influence remote D-space particle events.”

The hidden nature of matter. The “hidden, missing variable” theory was not in favor with the status quo or we’d be looking at the universe, and ourselves, quite differently. We would be looking for an information principle, or consciousness.

Like this:

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matthew.donald@phy.cam.ac.uk October 2001 <http://psyche.cs.monash.edu.au/v7/psyche-7-15-donald.html>

“...in fact, if the fundamental laws of physics are quantum mechanical, then every physical effect is quantum mechanical. Quantum mechanics infects every physical structure at every level. In particular, as I have argued in Donald (1990), the unpredictability of the detailed functioning of a living human brain requires an explanation compatible with our understanding of quantum theory.”

MORE:

“Unpredictable” is not necessarily the same as “random”

MORE: *“The firing of an individual neural synapse on any single occasion is certainly unpredictable (Regehr & Stevens, 2001). In classical terms, this unpredictability is caused by unknown thermal molecular motions. In quantum terms, on the other hand, even under the conventional hypothesis in which quantum tunnelling is not involved and vesicle release is an*



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ordinary biochemical process triggered by an electrochemically-driven influx of calcium into the pre-synaptic neuron (Suedhof & Scheller, 2001), **the unpredictability lies deeper, stemming from an**

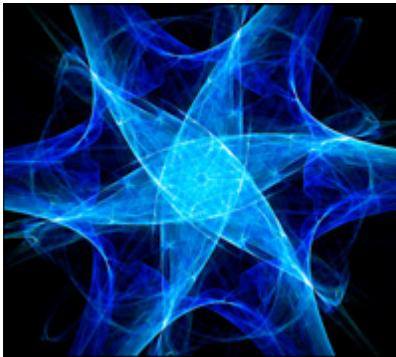
entire history of uncertain scatterings and interactions at the molecular level and below. But a central task of an interpretation of quantum mechanics is to explain how and at what level quantum unpredictability is resolved. Walker only attempts a resolution at the level of synaptic function. Molecular interactions lie below this level, and therefore he could argue for the relevance of quantum theory to consciousness, even without invoking quantum tunnelling. In conventional quantum-mechanical terms, if it never "collapsed" at any other moment, the quantum state of the brain would have to "collapse" at a great number of synaptic firings in order to make each of those firings definitely happen at [definite] moments..."

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The old descriptions of reality as purely material and consciousness as a later, emergent property just don't fit the facts.

Quantum Theory Fails Reality Checks - Scientific American Update of classic experiment finds that "spooky action at a distance" goes hand in hand with unreality April 18, 2007 |By JR Minkel <http://www.scientificamerican.com/article/quantum-theory-fails-reality/>



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Reality just got a one-two punch.

[The insanely weird quantum wave function might be "real ...](http://arstechnica.com/.../the-insanely-weird-quantum-wave-function-might...)

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Nov 21, 2011 · The insanely weird **quantum wave function** might be “real” after all ... These each prepare single **photons** and send them to detectors for joint detection.

“Quantum mechanics has a concept called a “wave function.” It's incredibly important because it holds all the measurable information about a particle (or group of particles) within it. In practice, the wave function describes a set of probabilities that change in time. When we make a measurement, we are really poking at the wave function, causing these probabilities to collapse and take on a definite value. The value that the wave function predicts is determined by the relative probabilities of all the possible measurement results.

But physically, the wave function is problematic. It is often possible to figure out the physical meaning of a symbol in an equation by looking at the physical units you would use to measure it. A quick examination of the wave function shows that the units of the wave function don't make a great deal of sense. ***To avoid a mental hernia, physicists tell each other that the wave function is a useful calculation tool, but only has physical relevance in terms of statistics, rather than having some concrete existence. In other words, it's not really “real.”***

Until now, we have taken comfort from the idea that, real or not, the results from the wave function would be the same. So no worries, right? Quite possibly wrong. In a paper posted on the arXiv, a trio of researchers has shown that you can't have it both ways; a purely statistical wave function will not always give the same results as a wave function with real physical significance.” MORE

MORE: *“There's a long, long history of puzzled physicists showing that the wave function must be a bizarre object. [Quantum entanglement](#) is a direct result of the properties of the wave function, for instance, and entanglement envisions particles separated by a vast gulf of space being, apparently, in instantaneous contact with each other. According to the rules of quantum mechanics, if I measure the spin of one of a pair of entangled particles, then that measurement automatically and instantaneously sets the spin of the other... even if it's on the opposite side of the Universe.*

Such findings were only theoretical in nature until the 1980s. Since then, we have confirmed that entanglement is possible and have attempted to measure the speed with which the wave function collapse travels between entangled particles. The answer is: it's fast. [Much faster](#) than the speed of



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light (or neutrinos). The conclusion seems to be that the bizarre consequences of the wave function are real.

But is the wave function itself "real" in any traditional sense?

The only way to figure this out is to create a situation where the wave-function-as-a-statistical-object produces a different experimental result than the wave-function-as-a-real-object. Until now, this has

proved to be elusive. But, by considering the consequences of joint measurements on independently prepared objects, the researchers have shown that it's possible for the statistical and real versions of the wave function to produce different results."

END OF MORE

"A whole new way of viewing the world was coming into being, and in that new way of viewing things, human consciousness and the effects of conscious human actions were an essential part of the dynamics. This reversed the Newtonian idea where consciousness was completely left out...now all of a sudden the mind was elevated to "fundamental element of interest."...we're no longer just passive observers, robotic mechanical objects...there's no known way the physical part can do the job alone." - [Henry Stapp](#), who worked with both Wolfgang Pauli and Werner Heisenberg

[Werner Heisenberg](#): "...the basic changes in modern science must yet be considered as expressions of changes in our very existence and thus affecting every realm of life." The Physicist's Conception of Nature

What's this world coming to? Maybe a whole new universe of transcendent meaningful possibility of many dimensions here-and-now, as opposed to the one focused dominantly on limitation, constraint, rationality, meaninglessness and the statistical probabilities of 3 dimensions + time. Most physicists acknowledge there are likely more...science as it's currently taught keeps us constrained and limited to 3+time. It's like clipping wings.

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We are participators in and co-creators of the universe...unfortunately that awareness is undeveloped. In a materialist paradigm the focus is on material life. We need to evolve to underlying and 3D transcendent levels of self-awareness rather than be machine-like reactors to outer stimulus and consensus/conventional interpretations of what "reality" is made of. A more rigorous study of [photons](#) makes it clear that reality is as much (or more) non-material as



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material. And attention/[consciousness/photons](#) are means through which, and the brain the transduction device through which, waves of possibilities are collapsed into 3D (+ time).

As observers, where we put our attention, and the quality of our attention, affects who shows up, what shows up, and how things turn out. As observers, we individually and collectively create our reality.

We, as expressions of consciousness-as-causality, can participate to observe into being a whole new universe of possibility.

"The universe has invented a way to know itself." Alan Dressler, astronomer, Carnegie Institute in Wash, DC

[Amit Goswami](#), PhD professor of physics, University of Oregon:

"Quantum mechanics is true, and deviation from determinism is ample. Why? The collapse of the wave function requires an embodied sentient being – a human observer, for example. Consciousness collapses the wave function by choosing actuality from the superposition of possibilities, but only on the presence of brain-mind awareness...In other words, we must distinguish between consciousness (the ground of being, the whole, [what some call God,] and awareness (a subject-object split, implying an individual sentient being).

However this is only an apparent split, there is no ultimate dualism. It is a continuum. "The unlimited consciousness from which both subject and object arise identifies with the subject "pole" of the experiential duality, thus mistaking itself to be separate from the objects of experience. This mistaken identity is responsible for the subject-object world of our experience. Experience itself could not exist without this "mistake."

So Shankara was right about the world of separation arising from a mistake, from maya."

The illusion of the material world. Same as many Greek philosopher scientists said, your 5 senses deceive you. But we have relied on them to fully define "reality" when in fact the non-material dimensions are Whole new levels.