QBism: a subjective quantum theory—analysis and evaluation

Physicist Christopher Fuchs has developed a new interpretation of quantum theory: QBism.

https://www.quantamagazine.org/20150604-quantum-bayesianism-qbism/

Please read that short article. I reserve the right to change my mind, as all of these ideas are quite new. I believe I can untangle this theory, and get to the meaning. This man is a deep thinker. I will focus on the idea of wave function. What must be done, is to distinguish the reality, the OBJECTIVE reality, from the subjective, and define their fused interrelation. To do that, I will proceed as follows:

Some initial statements from the text (in quotes) and analytic evaluations:

a. "According to QBism, the wave function's "collapse" is simply the observer updating his or her beliefs after making a measurement. Spooky action at a distance, wherein one observer's measurement of a particle right here collapses the wave function of a particle way over there, turns out not to be so spooky — the measurement here simply provides information that the observer can use to bet on the state of the distant particle, should she come into contact with it."

b. "Those interpretations all have something in common: They treat the wave function as a description of an objective reality shared by multiple observers. QBism, on the other hand, treats the wave function as a description of a single observer's subjective knowledge. It resolves all of the quantum paradoxes, but at the not insignificant cost of anything we might call "reality." Then again, maybe that's what quantum mechanics has been trying to tell us all along — that a single objective reality is an illusion."

c. These previous statements contain the crux of the matter. Almost the entire argument can be subsumed under those few words. If this is true, the idea of objective probability is lost, and I infer, with no objective reality, the ideas can not be tested. This is common amongst theorists, and it is incorrect, and correct all at once. The statement is made that Bohmian mechanics is deterministic and untestable…I disagree, as psychophysical interactivity preserves free will, and as to testability: http://media.wix.com/ugd/cf8614_7279314eb5e64a27ba4b1ea6577699f0.pdf, and, see the Radin below. And then this: "At the other end of the spectrum is Bruno de Finetti. He says there's no reason whatsoever for my probabilities and yours to match, because mine are based on my experience and yours are based on your experience. The best we can do, in that case, if we think of probabilities as gambling attitudes, is try to make all of our personal gambling attitudes internally consistent. I should do that with mine, and you with yours, but that's the best we can do. That's what de Finetti meant when he said probability does not exist. He meant, let's take the extreme stance. Instead of saying probabilities are mostly in my head but there are some extra rules that still anchor them to the world, he got rid of the anchor."

He concludes the thread thusly:

"…As QBism understands a quantum measurement outcome, it's personal. No one else can see it."

Analysis: This thinker has done us a great service in placing correct emphasis upon the role of the observer as a subjective contributor to ontological and physical reality. However, he has done us a great disservice, in abandoning the concept of objective reality, and has lost hold of the basics, in mistaking Objective PROBABILITY, a false concept, an effect, not a cause, for objective REALITY, that is, quantum measurement outcome. First I will flesh out some of this with neuroscience, then use physics to untangle the erroneous conclusions:

Support: The subjective probability in one's head is as he states it. I will support that, then correct the error. Here is the neuroscience which shows he is right here, this is primary in our ontological creation of internal reality: Specifically, and neuroanatomically: PGO = ponto-geniculo-occipital. Meaning: pons, thalamic lateral geniculate body, and occipital cortex. REM has particular activation patterns. The system establishes an emotive definition, am internal limbic definition of a stimulus, and compares that to incoming information about behavioral outcomes, and adjusts…learning as a function of comparative probabilistic affective informational assessment (symbolism). So, we see the system revealed in dreams. The DLPFC, DorsoLateral Prefrontal Cortex is demodulated in REM. Emotion released. DLPFC demodulated as in schizophrenia! The hidden emotive definitional processes are amplified as well (hyper-modulated limbic system), allowing us to watch. "This would be in keeping with the proposed role in waking of these structures in the identification of mismatches between expected and actual behavioral outcomes (122–125) and would also explain the similarities seen between cholinergic and PGO activity in the amygdala during REM on the one hand and during alerting and orienting responses in awake animals on the other (126–128)." (Stickgold et al., 2001, Sleep Learning and Dreams: Off-Line Memory Reprocessing, Vol. 294, *Science*). DLPFC is inactive, the brain is aminergically demodulated (low noradrenergic, serotonergic and histaminergic activity), and along with predominant acetylcholine modulation, creates conditions for informational flow from the neocortex to the hippocampus, not the reverse! That seals off episodic memory, and leaves us with memory traces from which to construct a dream narrative: [http://thejournalofunconsciouspsychology.com/blog/2014/01/26/the-system-of-affective-assignment/]. These are assigned also during waking, to provide *Quality* to experience. REM, underlies consciousness. The BRAC: The Basic Rest Activity Cycle, demonstrates REM is embedded in waking (Panksepp, 1998, Affective Neuroscience, Oxford Press), and I will therefore state: distributes affect all day long. This is a comparative limbic definition…comparative, that is probabilistic…limbic and probabilistic. Emotion, affect, and probability. He is right. That is what is in our heads. (Please ask for more detail).

Error and correction: This statement appears incorrect: "…As QBism understands a quantum measurement outcome, it's personal. No one else can see it." Please ask for an

analysis of physical processes as a self-observing system. That would be one way to prove the point. I will take a more direct approach. As I do hope you are aware from reading, I have defined the idea of objective probability as being false, an effect, and the underlying cause, has been distilled as an actual alteration in entangled relations in reality. That creates probability outcome alteration. The mind plays a small but clear role in physical interactivity to create the effect. We can SEE this…one and all. It is objective. Think of the multitude of experiments where a random number generator is placed in the biophoton stream of a person who is concentrating on the machine (or concentrated on less directly in other ways), noting the generator is insulated from electromagnetic interference, and the random output becomes organized! Probability outcomes altered, by thought, and the matter is recorded in a computer as an independent fact from human observation. Next, read this:

Psychophysical interactions with a double-slit interference pattern:
Dean Radin, Leena Michel, James Johnston, and Arnaud Delorme

http://dx.doi.org/10.4006/0836-1398-26.4.553

Here, we see, objectively recorded, not in anyone's head, but as clear objective data, the effect of mental effort, on physical reality…a tiny and progressive effect, where reality under this sort of internal observation, concentration in the mind's eye, becomes altered, and is more…"Particle Like"…after mind has interacted with it. It seems as if wave aspects themselves, are being altered! That, adds up beautifully with my theories, which posit our minds do affect objective reality, and wave function, which is a sort of affect, is compounded in the mind, in the hippocampus and other pieces of tissue, to accomplish this. Again, in this experiment, we see a real objective result, a result of a sort of observation, and subsequent measurement, objective in every way for all to see. I believe, this result is not probability alteration, but probability alteration is itself, but an effect, of entangled variance. Please do ask for my complete theories here.

Here is an experimental set up which allows measurement to produce entanglement:

http://physics.aps.org/articles/v7/45

You may contact me through the staff contact page at *Mind* magazine:
http://www.mindmagazine.net.