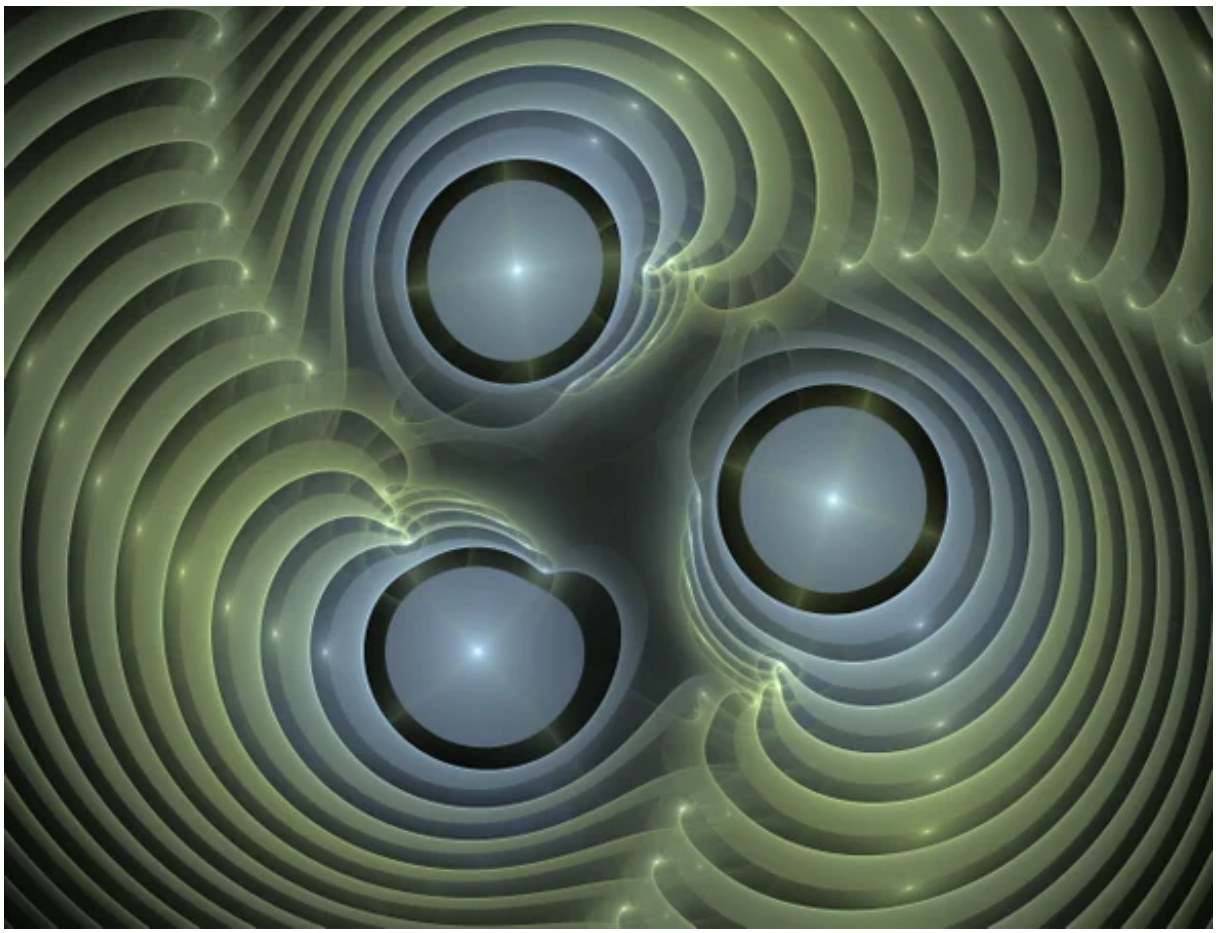
PHYSICS | OPINION

Quantum Mechanics, the Mind-Body Problem and Negative Theology

Scientists and philosophers should keep trying to solve reality's deepest riddles while accepting that they are unsolvable

By John Horgan on December 15, 2020



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Here's how I distinguish science from philosophy. Science addresses questions that can be answered, potentially, through empirical investigation. Examples: What's the best way to defeat COVID-19? What causes schizophrenia, and how should it be treated? Can nuclear power help us overcome climate change? What are the causes of war, and how can we end it?

Philosophy addresses questions that probably can't be solved, now or ever. Examples (and these are of course debatable, some philosophers and scientists insist that science can answer all questions worth asking): Why is there something rather than nothing? Does free will exist? How does matter make a mind? What does quantum mechanics mean?

This final question has absorbed me lately because of my ongoing effort to learn quantum mechanics. Quantum mechanics represents reality at its most fundamental level, that of particles darting through space. Supposedly. That's why science writer and astrophysicist Adam Becker calls his recent book about quantum mechanics *What Is Real?*

I suspect we'll never have final, definitive answers to what quantum mechanics means and what is real. My reasoning is primarily inductive. For more than a century, experts have sought to "interpret" quantum mechanics, to specify what it tells us about matter and energy, time and space, the infrastructure of existence.

Physicists and philosophers have come up with lots of possibilities, notably the Copenhagen interpretation, the many-worlds hypothesis and the Bohmian pilot-wave model. I've just become aware of a hypothesis called quantum Bayesianism, or QBism (pronounced "cubism"), which proposes—well, check it out yourself.

Unfortunately, most interpretations don't offer testable predictions to distinguish them from rivals. (An exception is a quantum model proposed by Nobel laureate Roger Penrose, certain versions of which are reportedly ruled out by a recent experiment.) Hence adherents favor one interpretation over others for largely subjective, aesthetic reasons.

You dig the austere minimalism of the Copenhagen interpretation. I favor the pilot-wave model, which insists that particles are … particles, and not probabilistic blurs. If I'm feeling frisky, I might go with John Wheeler's metaphysically extravagant "it from bit" proposal, which fuses quantum mechanics and information theory. Arguments about which interpretation is "true" cannot be resolved, because our preferences are matters of taste, not truth.

When I say a problem is unsolvable, I don't mean we should abandon it. Far from it. I love reading, writing and arguing about intractable puzzles. For example, I don't believe in God, certainly not the God of my Catholic childhood. But I enjoy smart, imaginative theology (defined as the study of God) in the same way that I enjoy good science fiction. Two of my favorite theologians are physicist Freeman Dyson and psychedelic adventurer Terence McKenna.

I'm especially fond of what is known as *negative* theology. Negative theology assumes that God exists but insists that He/She/It/They transcends human language and concepts. Negative theologians try to say—over and over again, and sometimes with great eloquence—what they acknowledge cannot be said.

Negative theology is an outgrowth of mysticism. Mystical experiences, as defined by William James in *The Varieties of Religious Experience,* possess two seemingly contradictory properties. They are on the one hand "noetic," that is, you feel you are gaining profound insight into and knowledge of reality. They are on the other hand "ineffable," meaning you cannot convey your revelation in words.

Mystical aphorisms often emphasize ineffability. "He who knows, does not speak," the ancient Chinese sage Lao Tzu says, violating his own dictum. "He who speaks, does not know." Pseudo-Dionysius the Areopagite, a medieval monk, describes mystical knowledge as being "at one with Him Who is indescribable."

I suspect Wittgenstein had his own mystical experiences in mind when he wrote at the end of his cryptic prose-poem *Tractatus Logico-Philosophicus,* "Whereof one cannot speak, thereof one must remain silent." (After a friend, a philosopher, quoted that line to me, I replied: Then why are you still speaking? The friend hasn't spoken to me since.)

In 1999, while doing research for my book *Rational Mysticism,* I attended a symposium on mysticism at the University of Chicago. At a session on negative theology, a speaker said he'd arrived by mistake a day early. Upon entering the empty auditorium, he thought, "This is taking negative theology too far." Another speaker described mystical literature as "that which contests its own possibility."

Negative theology can serve as a model for scientists and philosophers trying to solve quantum mechanics and another enigma I posed above: How does matter make a mind? This is the mind-body problem, which investigates, as I argue in a recent book, what we really are, can be and should be, collectively and as individuals. Are we really matter, mind, some combination of the two or, perhaps, none of the above?

When we wrestle with quantum mechanics, we're also taking on the mind-body problem. Quantum paradoxes like Schrödinger's cat and the measurement problem raise questions about the connection between matter and mind, and their status relative to each other. Is matter self-sufficient, as materialists insist, or does reality require mind too?

Mind is essential, according to QBism, it from bit and other quantum hypotheses. I have disparaged these mind-centric frameworks as neo-geocentrism, throwbacks to the ancient assumption that the universe revolves around us. But I enjoy mulling them over, just as I enjoy thinking about theodicies, which seek to explain why a loving, all-powerful God would create such a painful, unfair world. (I've even come up with a drug-inspired theodicy of my own.)

Many, most, scientists and philosophers who dwell on quantum mechanics and the mind-body problem have faith that these conundrums can and will be solved, eventually. They crave answers, they want to *know*. If they cannot know during their lifetime, they want at least to feel that their efforts are taking us closer to the truth.

Philosopher David Chalmers, who has rejected strictly materialist solutions of what he calls "the hard problem" of consciousness, nonetheless insists that one day we'll crack it. So does another thinker I admire, philosopher-novelist Rebecca Goldstein. They and other seekers will probably dismiss negative theology as a model for inquiry, and I understand why. I share their craving for a revelation so profound that it dissipates the weirdness of the world.

But I've also become increasingly wary of our craving for absolute knowledge, and absolute certainty, especially when it comes to riddles like what is reality and what are we. People convinced that they possess ultimate knowledge can become self-

righteous fanatics, capable of enslaving and exterminating others in the name of truth.

Negative theology helps us avoid fanaticism by keeping us humble. We acknowledge, as an axiom, that ultimate truth will always elude us. Those who have a hard time accepting this anti-truth—and hence the premise of negative theology—should keep two points in mind. First, if we cannot grasp ultimate truth, we can pursue it forever, never losing sight of the mystery at the heart of things.

Second, I'm not proposing negative theology as a model for science as a whole. Science has answered, conclusively, many questions, and it will answer many more, including, I hope, those listed at the beginning of this column. Problems related to infectious disease, mental illness, climate change and war will surely yield to dogged empirical inquiry. Although science will never entirely explain reality, it can make it more bearable.

Further Reading:

For more ruminations on quantum mechanics, the mind-body problem and mysticism, see my new book *Pay Attention: Sex, Death, and Science*.

ABOUT THE AUTHOR(S)

John Horgan

John Horgan directs the Center for Science Writings at the Stevens Institute of Technology. His books include *The End of Science*, *The End of War* and *Mind-Body Problems*, available for free at mindbodyproblems.com. For many years, he wrote the immensely popular blog Cross Check for *Scientific American*.

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