

CONSCIOUSNESS

Is Consciousness Part of the Fabric of the Universe?

Physicists and philosophers recently met to debate a theory of consciousness called panpsychism

By Dan Falk on September 25, 2023



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More than 400 years ago, Galileo showed that many everyday phenomena—such as a ball rolling down an incline or a chandelier gently swinging from a church ceiling—obey precise mathematical laws. For this insight, he is often hailed as the founder of modern science. But Galileo recognized that not everything was amenable to a quantitative approach. Such things as colors, tastes and smells “are no more than mere names,” Galileo declared, for “they reside only in consciousness.” These qualities aren’t really out there in the world, he asserted, but

exist only in the minds of creatures that perceive them. “Hence if the living creature were removed,” he wrote, “all these qualities would be wiped away and annihilated.”

Since Galileo’s time the physical sciences have leaped forward, explaining the workings of the tiniest quarks to the largest galaxy clusters. But explaining things that reside “only in consciousness”—the red of a sunset, say, or the bitter taste of a lemon—has proven far more difficult. Neuroscientists have identified a number of neural correlates of consciousness—brain states associated with specific mental states—but have not explained how matter forms minds in the first place. As philosopher David Chalmers asked: “How does the water of the brain turn into the wine of consciousness?” He famously dubbed this quandary the “hard problem” of consciousness.

Scholars recently gathered to debate the problem at Marist College in Poughkeepsie, N.Y., during a two-day workshop focused on an idea known as *panpsychism*. The concept proposes that consciousness is a fundamental aspect of reality, like mass or electrical charge. The idea goes back to antiquity—Plato took it seriously—and has had some prominent supporters over the years, including psychologist William James and philosopher and mathematician Bertrand Russell. Lately it is seeing renewed interest, especially following the 2019 publication of philosopher Philip Goff’s book *Galileo’s Error*, which argues forcefully for the idea.

Goff, of the University of Durham in England, organized the recent event along with Marist philosopher Andrei Buckareff, and it was funded through a grant from the John Templeton Foundation. In a small lecture hall with floor-to-ceiling windows overlooking the Hudson River, roughly two dozen scholars probed the possibility that perhaps it’s consciousness all the way down.

Part of the appeal of panpsychism is that it appears to provide a workaround to the question posed by Chalmers: we no longer have to worry about how inanimate matter forms minds because mindedness was there all along, residing in the fabric of the universe. Chalmers himself has embraced a form of panpsychism and even suggested that individual particles might be somehow aware. He said in a TED Talk that a photon “might have some element of raw, subjective feeling, some primitive precursor to consciousness.” Also on board with the idea is neuroscientist Christof Koch, who noted in his 2012 book *Consciousness* that if one accepts consciousness as a real phenomenon that’s not dependent on any particular material—that it’s “substrate-independent,” as philosophers put it—then “it is a simple step to conclude that the entire cosmos is suffused with sentience.”

Yet panpsychism runs counter to the majority view in both the physical sciences and in philosophy that treats consciousness as an emergent phenomenon, something that arises in certain complex systems, such as human brains. In this view, individual neurons are not conscious, but thanks to the collective properties of some 86 billion neurons and their interactions—which, admittedly, are still only poorly understood—brains (along with bodies,

perhaps) *are* conscious. Surveys suggest that slightly more than half of academic philosophers hold this view, known as “physicalism” or “emergentism,” whereas about one third reject physicalism and lean toward some alternative, of which panpsychism is one of several possibilities.

At the workshop, Goff made the case that physics has missed something essential when it comes to our inner mental life. In formulating their theories, “most physicists think about experiments,” he said. “I think they should be thinking, ‘Is my theory compatible with consciousness?’—because we know that’s real.”

Many philosophers at the meeting appeared to share Goff’s concern that physicalism falters when it comes to consciousness. “If you know every last detail about my brain processes, you still wouldn’t know what it’s like to be me,” says Hedda Hassel Mørch, a philosopher at Inland Norway University of Applied Sciences. “There is a clear explanatory gap between the physical and the mental.” Consider, for example, the difficulty of trying to describe color to someone who has only seen the world in black and white. Yanssel Garcia, a philosopher at the University of Nebraska Omaha, believes that physical facts alone are inadequate for such a task. “There is nothing of a physical sort that you could provide [a person who sees only in shades of gray] in order to have them understand what color experience is like; [they] would need to experience it themselves,” he says. “Physical science is, in principle, incapable of telling us the complete story.” Of the various alternatives that have been put forward, he says that “panpsychism is our best bet.”

But panpsychism attracts many critics as well. Some point out that it doesn’t explain how small bits of consciousness come together to form more substantive conscious entities. Detractors say that this puzzle, known as the “combination problem,” amounts to panpsychism’s own version of the hard problem. The combination problem “is the serious challenge for the panpsychist position,” Goff admits. “And it’s where most of our energies are going.”

Others question panpsychism’s explanatory power. In his 2021 book *Being You*, neuroscientist Anil Seth wrote that the main problems with panpsychism are that “it doesn’t really explain anything and that it doesn’t lead to testable hypotheses. It’s an easy get-out to the apparent mystery posed by the hard problem.”

While most of those invited to the workshop were philosophers, there were also talks by physicists Sean Carroll and Lee Smolin and by cognitive psychologist Donald Hoffman. Carroll, a hardcore physicalist, served as an unofficial leader of the opposition as the workshop unfolded. (He occasionally quipped, “I’m surrounded by panpsychists!”) During a well-attended public debate between Goff and Carroll, the divergence of their worldviews quickly became apparent. Goff said that physicalism has led “precisely nowhere,” and suggested that the very idea of trying to explain consciousness in physical terms was incoherent. Carroll argued that physicalism is actually doing quite well and that although

consciousness is one of many phenomena that can't be inferred from the goings-on at the microscopic level, it is nonetheless a real, emergent feature of the macroscopic world. He offered the physics of gases as a parallel example. At the micro level, one talks of atoms, molecules and forces; at the macro level, one speaks of pressure, volume and temperature. These are two kinds of explanations, depending on the "level" being studied—but present no great mystery and are not a failure on the part of physics. Before long, Goff and Carroll were deep into the weeds of the so-called knowledge argument (also known as "Mary in the black and white room"), as well as the "zombie" argument. Both boil down to the same key question: Is there something about consciousness that cannot be accounted for by physical facts alone? Much of the rhetorical ping-pong between Goff and Carroll amounted to Goff answering yes to that question and Carroll answering no.

Another objection some attendees raised is that panpsychism doesn't address what philosophers call the "other minds" problem. (You have direct access to your own mind—but how can you deduce anything at all about another person's mind?) "Even if panpsychism is true, there will still be vast amounts of things—namely, things related to what the experiences of others are like—that we still won't know," says Rebecca Chan, a philosopher at San José State University. She worries that invoking an underlying layer of mindedness is a bit like invoking God. "I sometimes wonder if the panpsychist position is similar to 'god of the gaps' arguments," she says, referring to the notion that God is needed to fill the gaps in scientific knowledge.

Other ideas were batted around. The idea of cosmopsychism was floated—roughly, the notion that the universe itself is conscious. And Paul Draper, a philosopher at Purdue University who participated via Zoom, talked about a subtly different idea known as "psychological ether theory"—essentially that brains don't *produce* consciousness but rather *make use of* consciousness. In this view, consciousness was already there before brains existed, like an all-pervasive ether. If the idea is correct, he writes, "then (in all likelihood) God exists."

Hoffman, a cognitive scientist at the University of California, Irvine, who also addressed the workshop via Zoom, advocates rejecting the idea of spacetime and looking for something deeper. (He cited the increasingly popular idea in physics lately that space and time may not be fundamental but may instead be emergent phenomena themselves.) The deeper entity related to consciousness, Hoffman suggests, may consist of "subjects and experiences" that he says "are entities beyond spacetime, not within spacetime." He developed this idea in a 2023 paper entitled "Fusions of Consciousness."

Smolin, a physicist at the Perimeter Institute for Theoretical Physics in Ontario, who also participated via Zoom, has similarly been working on theories that appear to offer a more central role for conscious agents. In a 2020 paper, he suggested that the universe "is composed of a set of partial views of itself" and that "conscious perceptions are aspects of some views"—a perspective that he says can be thought of as "a restricted form of panpsychism."

Carroll, speaking after the session that included both Hoffman and Smolin, noted that his own views diverged from those of the speakers within the first couple of minutes. (Over lunch, he noted that attending the workshop sometimes felt like being on a subreddit for fans of a TV show that you're just not into.) He admitted that endless debates over the nature of "reality" sometimes left him frustrated. "People ask me, 'What is physical reality?' It's physical reality! There's nothing that it 'is.' What do you want me to say, that it's made of macaroni or something?" (Even Carroll, however, admits that there's more to reality than meets the eye. He's a strong supporter of the "many worlds" interpretation of quantum mechanics, which holds that our universe is just one facet of a vast quantum multiverse.)

If all of this sounds like it couldn't possibly have any practical value, Goff raised the possibility that how we conceive of minds can have ethical implications. Take the question of whether fish feel pain. Traditional science can only study a fish's outward behavior, not its mental state. To Goff, focusing on the fish's behavior is not only wrong-headed but "horrific" because it leaves out what's actually most important—what the fish actually *feels*. "We're going to stop asking if fish are conscious and just look at their behavior? Who gives a shit about the behavior? I want to know if it has an inner life; that's all that matters!" For physicalists such as Carroll, however, feelings and behavior are intimately linked—which means we can avoid causing an animal to suffer by not putting it in a situation where it appears to be suffering based on its behavior. "If there were no connection between them [behavior and feelings], we would indeed be in trouble," says Carroll, "but that's not our world."

Seth, the neuroscientist, was not at the workshop—but I asked him where he stands in the debate over physicalism and its various alternatives. Physicalism, he says, still offers more "empirical grip" than its competitors—and he laments what he sees as excessive hand-wringing over its alleged failures, including the supposed hardness of the hard problem. "Critiquing physicalism on the basis that it has 'failed' is willful mischaracterization," he says. "It's doing just fine, as progress in consciousness science readily attests." In a recently published article in the *Journal of Consciousness Studies*, Seth adds: "Asserting that consciousness is fundamental and ubiquitous does nothing to shed light on the way an experience of blueness is the way it is, and not some other way. Nor does it explain anything about the possible functions of consciousness, nor why consciousness is lost in states such as dreamless sleep, general anaesthesia, and coma."

Even those who lean toward panpsychism sometimes seem hesitant to dive into the deep end. As Garcia put it, in spite of the allure of a universe imbued with consciousness, "I would love to be talked out of it."

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