

# Is reality shaped by our observation? Why a fringe idea in science is still controversial



Over the past 50 years, astronomers have made dozens of major discoveries that help explain the nature and origins of the universe. They've measured the cosmic microwave background, or leftover radiation from the [Big Bang](#), with extremely high precision to help paint a picture of the first nanoseconds of the universe. They realized that [the way galaxies were moving](#) was being influenced by something invisible called [dark matter](#) that makes up roughly a quarter of the universe. And they discovered a new "ghostly" particle that passes through matter without much of a trace called the [neutrino](#).

Scientists have continued to chip away at some of the fundamental questions about how the universe and its multitudes of parts work together, but they haven't really gotten close to answering the most basic and elusive question that has been pursued by philosophers and scientists alike since human consciousness came to be: Why us, why here, and why now?

Or, as the late physicist Dr. John Wheeler said in an interview with [Discover Magazine](#) in 2002: "How come existence?"

"I'd be willing to have this arm cut off if I could understand how come the quantum? If I could understand how existence comes about," Wheeler once said in a past [interview](#). "I think it's a thing which is outside the bailiwick of lots of people, and yet I think it stands the most chance of giving a really dynamic impulse to the whole scientific enterprise."

Wheeler was an ideological leader in developing quantum cosmology and is memorialized by his many contributions to the field, including coining the term black holes.

He was also known for his tendency to push the boundaries of what was possible in physics with creative ideas. "A lover of poetry and philosophy," who "was acutely aware of the power of words to shape ideas," wrote Richard Webb in a 2008 biographical piece published in [Nature](#), Wheeler was "wont to write lectures on the blackboard simultaneously with both hands."

One of his ideas, which he called the "participatory universe," posits that our own observations could actually be what is creating our physical reality.

The idea could be depicted in a drawing of the letter "U," where an observer stands on one column of the letter looking backward at the past history of the universe, said Dr. Bob Wald, a theoretical physicist at the University of Chicago who was Wheeler's student at Princeton University between 1968 and 1972.

"He was very taken with the thought that no phenomenon becomes a true phenomena until it has been observed," Wald told Salon in a video call. "The idea is that the past history of the universe has become definite when someone or people now are observing things about the past universe."

Wheeler was a legendary scientist that studied under Niels Bohr, who created the most widely recognized model for the atom called the Bohr model. Wheeler also [worked closely with Albert Einstein](#), helping center his theory of general relativity. Known as a "[physicist's physicist](#)" who worked on "ideas of ideas," Wheeler inspired countless students over his nearly 50 years of teaching and encouraged their monumental discoveries. One of his students, Hugh Everett III,

introduced the “many worlds” idea that [suggests an infinite number of parallel universes exist](#).

“In Everett's mathematical formulation, these possibilities were coexisting and could come together and be extinguished,” Wheeler said in a past [interview](#). “It was only when one got to the point where one had an irreversible act of observation that one of these became materialized ... If there's anything designed to confuse somebody about what quantum mechanics is all about, this does it.”

Wheeler's idea of the participatory universe is rooted in quantum mechanics, which allows a particle to be in two places at once by being in what is called a [superposition state](#). This situation is demonstrated, for example, by the famous theoretical [Schrödinger's Cat experiment](#), in which a cat is placed in a box with radioactive materials that could kill it. In this hypothetical example, the scientist observing the experiment wouldn't know whether the cat lived or died until they opened the box. Therefore, two realities coexisted: The cat lived, and the cat died.

The famous “[two-slit experiment](#),” demonstrated something similar but with photons. It found that these particles, which can either act like a particle or wave, acted as waves passing through both slits in the experiment when they were unobserved. However, when observed, they acted like particles passing through one slit or the other.

Wheeler also proposed his own “delayed choice” experiment. Whereas the two-slit experiment shows that observations before or during the experiment influenced its outcome, Wheeler's experiment showed that delayed observations influenced the results of the experiment after the particles had already passed through the slits.

“One can decide, at the quantum level, whether an object shall go two routes to get to its final point or just one route,” Wheeler once said in an interview. “You can make the decision after it has already made the trip. That sounds like a contradiction, but it works.”

To put this idea into more tangible terms, said Dr. Andrei Linde, a professor emeritus at Stanford University who is one of the authors of the theory of the multiverse, recommends imagining opening the box with the Schrödinger's Cat with a three-day delay. The cat inside will either be dead or alive, making it seem

like the outcome of the experiment was determined three days ago as expected and the observer registers the fact of what happened in the past, Linde said.

However, to be consistent with the many-world interpretation of quantum mechanics, one would need to ascribe certain reality to both outcomes and understand that the universe consisted of these two branches: one universe with a dead cat and one with a live cat.

"By observing the cat, we are learning in which one do we live," Linde said.

Wheeler's idea of the participatory universe was initially seen as being a little too far out and was not pursued by the scientific community when he proposed it in the 1970s, said Dr. Alexei Nesteruk, a visiting lecturer and researcher in the philosophy of cosmology and quantum physics at the University of Portsmouth, England.

"Many physicists did not like it because they called it impalpable and a little bit mystical," Nesteruk told Salon in a phone interview. "They didn't share his optimism that physics will be able to actually produce any theory of intelligibility and consciousness which is responsible for the physical picture of the world."

After all, it changes the way we traditionally think about the way time works. Instead of the past causing the present, which causes the future, Wheeler's idea flips this on its head to suggest that the future "determines" the past.

"This past becomes a construct of the human mind [working in the direction of] the future," Nesteruk said. "This is a really interesting idea because it completely breaks down a naïve physical understanding of the past of the universe as the past of itself. It's not the past in itself. It's the past for us."

However, the field's initial rejection of the idea has started to change. In fact, an idea like the participatory universe that accounts for the role of the observer in determining something's quantum state could help explain some mathematical conundrums that have appeared in quantum physics, Linde said.

"The question is really whether the unobserved universe makes any sense in physics if you would not include this consciousness," Linde told Salon in a phone interview. "That is a far cry from what standard physicists would study, but Wheeler was not just any physicist."

## What If Consciousness Is a Universal Force? The Idea That Mind Comes Before Matter



In the vast expanse of the universe, where galaxies stretch infinitely and stars twinkle with ancient light, a profound question lingers: could consciousness be the fundamental force that shapes everything? This idea challenges the conventional view that matter came first, suggesting instead that consciousness might be the building block of reality itself. Imagine if every thought and every emotion were not just personal experiences but were woven into the very fabric of the cosmos. Such a notion invites us to rethink what we know about the universe and our place within it.

### **Matter**

The debate over whether mind or matter came first is as old as philosophy itself. For centuries, thinkers have grappled with this question, each offering different perspectives. Materialists argue that consciousness arises from

physical processes within the brain, while idealists believe that consciousness precedes and gives rise to matter. This philosophical tug-of-war has shaped countless theories and continues to influence scientific inquiry. The idea that consciousness might be a universal force offers a tantalizing twist, suggesting that perhaps both sides have been missing a crucial piece of the puzzle.

## **Consciousness as the Fundamental Fabric**

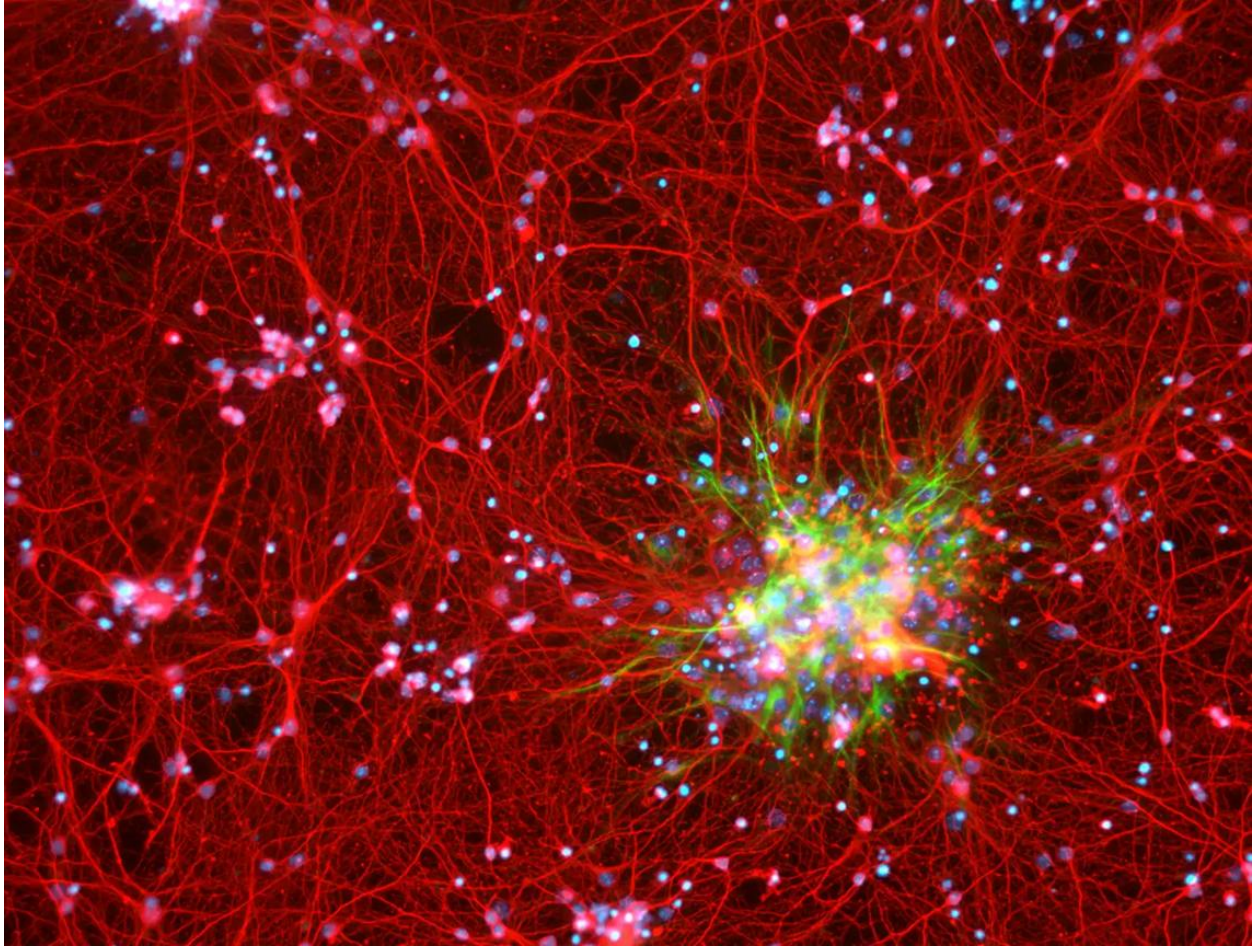
What if consciousness is not just a byproduct of the brain but the very essence of the universe? This concept posits that consciousness is the primary reality, with matter emerging from it. Imagine the universe as a vast tapestry, with consciousness as the thread that weaves everything together. This perspective forces us to reconsider the nature of existence, prompting us to explore whether our thoughts and perceptions are more than mere illusions of the mind.

## **The Quantum Connection**

Quantum physics has long fascinated scientists with its mysterious and counterintuitive findings. Some interpretations of quantum mechanics suggest that consciousness might play a role in the behavior of particles at the smallest scales. The observer effect, for instance, implies that the mere act of observation can alter the outcome of a quantum event. Could this hint at a deeper connection between mind and matter? Perhaps consciousness is not just a passive observer but an active participant in the dance of the universe.

## **The Role of Human Perception**

As beings capable of introspection and self-awareness, humans occupy a unique position in the universe. Our perceptions shape our reality, influencing how we interact with the world around us. If consciousness is indeed a universal force, it suggests that our thoughts and actions have far-reaching consequences. This perspective encourages us to consider the impact of our choices, not just on ourselves but on the interconnected web of existence.



## **Consciousness and the Cosmos**

The idea that consciousness is a universal force raises intriguing questions about the cosmos. If consciousness permeates the universe, could it be responsible for the order and complexity we observe in nature? From the intricate patterns of a snowflake to the spiraling arms of a galaxy, perhaps consciousness is the architect behind these phenomena. This notion invites us to view the universe not as a cold, indifferent expanse but as a living, breathing entity infused with awareness.

## **Consciousness and Evolution**

Could consciousness have played a role in the evolution of life on Earth? Some theorists propose that the emergence of consciousness was a pivotal moment in the evolutionary timeline, driving the development of increasingly complex

organisms. This idea challenges the traditional view of evolution as a purely random process, suggesting instead that consciousness may have guided the course of life in subtle and profound ways.

## **Implications for Artificial Intelligence**

As we venture into the realm of artificial intelligence, the question of consciousness becomes increasingly relevant. If consciousness is a universal force, can machines ever truly possess it? This inquiry raises ethical and philosophical dilemmas about the nature of AI and its potential impact on society. Understanding consciousness as a fundamental force could reshape our approach to developing intelligent machines, prompting us to consider the deeper implications of creating entities with the capacity for awareness.

## **Consciousness Beyond Earth**

The search for extraterrestrial life has captivated humanity for generations. If consciousness is a universal force, could it exist elsewhere in the universe? This possibility expands our understanding of life and consciousness, suggesting that the universe may be teeming with awareness in forms we have yet to imagine. The idea that consciousness could be a common thread connecting all life invites us to explore the cosmos with an open mind and a sense of wonder.

## **Mind Over Matter: A New Paradigm**

Embracing the idea that consciousness is a universal force requires a paradigm shift in our understanding of reality. It challenges the notion that the physical world is the ultimate reality, suggesting instead that mind and matter are intertwined in ways we are only beginning to comprehend. This shift opens new avenues for exploration, inviting scientists, philosophers, and curious minds alike to delve deeper into the mysteries of consciousness and its role in shaping the universe.



## **The Journey of Exploration**

The notion that consciousness is a universal force invites us on a journey of exploration and discovery. It encourages us to question long-held assumptions and to seek new insights into the nature of reality. Whether through scientific inquiry, philosophical reflection, or personal introspection, the quest to understand consciousness as a fundamental force holds the promise of unlocking profound truths about ourselves and the universe. This journey is not just an intellectual pursuit but a call to embrace the mystery and wonder of existence.

