

The Delusion of Scientific Omniscience

John Horgan

Does anyone still believe that science can explain, well, everything? This belief was ascendant in the 1980s, when my career began. Bigshot scientists proclaimed that they were solving the riddle of existence. They would soon explain why our universe exists and takes the form it does, and why we exist and are what we are.

For years I believed this claim, out of deference to scientists propagating it and desire to believe. The vision of a revelation to end all revelations thrilled me. Eventually I had doubts, which I spelled out in [The End of Science](#) and other writings. Lately, I've begun to look at the vision of total knowledge as a laughable delusion, a pathological fantasy that should never have been taken seriously, even though brilliant scientists propagated it.

[Stephen Hawking](#) was the most influential know-it-all. In his 1988 mega-bestseller *A Brief History of Time*, Hawking predicted that physicists would soon find an “ultimate theory” that would explain how our cosmos came into being. He compared this achievement to knowing “the mind of God.” This statement was ironic. Hawking, an atheist, wanted science to eliminate the need for a divine creator.

I've often suspected that Hawking, who had a wicked sense of humor, was goofing when he talked about an “ultimate theory.” The success of *Brief History* nonetheless inspired lots of similar books by physicists, including *Theories of Everything* by John Barrow (1991), *The Mind of God* by Paul Davies (1992) and *Dreams of a Final Theory* by Nobel laureate Steven Weinberg.

[Weinberg, a deadly serious man](#), was definitely not kidding when he envisioned a final theory. He argued that with the help of a new “supercollider” in Texas (which ended up being canceled), physicists might soon “bring to an end a certain kind of science, the ancient search for those principles that cannot be explained in terms of deeper principles.”

Like Hawking, Weinberg hoped that the final theory would crush, once and for all, our superstitious faith in an all-powerful, beneficent deity. “It would be wonderful to find in the laws of nature a plan, prepared by a concerned creator in which human being played some special role,” Weinberg wrote. “I find sadness in doubting that they will.”

Physicists were not the only scientists bewitched by the dream of omniscience. “I take the position that there is nothing that cannot be understood,” Peter Atkins, a religion-bashing British chemist, stated in his 1981 book *The Creation*. “Fundamental science may almost be at an end and might be completed within a generation.” He added, “Complete knowledge is just within our grasp. Comprehension is moving across the face of the Earth, like the sunrise.”

Then there was [biologist Richard Dawkins](#), who declared in his 1986 bestseller *The Blind Watchmaker* that the mystery of life had *already* been solved. Our existence “once presented

the greatest of mysteries,” Dawkins wrote, but “it is a mystery no longer, because it is solved. Darwin and Wallace solved it, though we shall continue to add footnotes to their solution for a while yet.”

One of those “footnotes” concerns [the problem of consciousness](#). In the late 1980s Francis Crick, co-discoverer of the double helix (and another hard-core atheist), proposed that consciousness, the subject of interminable philosophical speculation, might be scientifically tractable. Science could “solve” consciousness by finding its “neural correlates,” processes in the brain that correspond to conscious states.

In his 1994 book *The Astonishing Hypothesis*, Crick declared that “you, your joys and your sorrows, your memories and your ambitions, your sense of personal identity and free will, are no more than the behavior of a vast assembly of neurons.” That statement might have been the high water mark of scientism and its corollaries, materialism and reductionism.

Meanwhile, researchers were claiming that advances in computers and mathematics were illuminating chaotic and complex phenomena that had resisted traditional scientific analysis. These scientists, whom I like to call *chaoplexologists*, were finding common principles underpinning brains, immune systems, ecologies and nation-states. Economics and other social sciences would soon become as rigorous as chemistry and nuclear physics. Supposedly.



Sign up for *Scientific American's* free newsletters.

To be charitable, all this hubris wasn't entirely unjustified. After all, in the 1960s physicists confirmed the big bang theory and took steps toward a unified theory of all of nature's forces, while biologists deciphered the genetic code. You can see how these and other successes, as well as advances in computers and other tools, might have persuaded optimists that total scientific knowledge was imminent.

But the concept of scientific omniscience always suffered from fatal flaws. Read *Brief History* and other books carefully and you realize that the quest for an ultimate theory had taken physicists [beyond the realm of experiment](#). String theory and other major candidates for an ultimate theory of physics can be neither experimentally confirmed nor falsified. They are untestable and hence not really scientific.

Let's say physicists convince themselves that string theory is in fact the final theory, which encodes the fundamental laws from which nature springs. Theorists must still explain where those laws came from, just as believers in God must explain where He came from. This is the problem of infinite regress, which bedevils all who try to explain [why there is something rather than nothing](#).

As for life, Dawkins's claim that it is no longer a mystery is absurd. In spite of all the [advances in biology since Darwin](#), we still don't have a clue [how life began](#), or whether it

exists elsewhere in the cosmos. We don't know whether our emergence was likely or a once-in-eternity fluke.

Brain scientists still have no idea how our brains make us conscious, and even if they did, that knowledge would apply only to *human* consciousness. It would not yield a general theory of consciousness, which determines what sort of physical systems generate conscious states. It would not tell us whether it feels like something to be a bat, nematode or smart phone. As I argue in my new book [Mind-Body Problems](#), science appears farther than ever from understanding the mind.

There may still be a few true believers in scientific omniscience out there. [Big Data boosters](#) indulge in hype reminiscent of the heyday of *chaoplexity* (although the phrase "social science" [remains as oxymoronic as ever](#)). And in his 2011 book *On Being*, Peter Atkins, who is now 79, reiterated his "faith" that "there is nothing that the scientific method cannot illuminate and elucidate." But I doubt many scientists share this view any more.

Over the last decade or two, [science has lost its mojo](#). The replication crisis has undermined the public's confidence in scientists, and scientists' confidence in themselves. It has made them humble--and that is a good thing. Because what if scientists had somehow convinced themselves, and the rest of us, that they had figured everything out? What a tragedy that would be. We're better off in our current state of befuddlement, trying to comprehend this [weird, weird world](#) even though we know we'll always fall short.

The older I get, the more I appreciate what [philosopher Paul Feyerabend](#) said to me in 1992 when I broached the possibility of total knowledge. "You think that this one-day fly, this little bit of nothing, a human being--according to today's cosmology!--can figure it all out?" he asked me with a manic grin. "This to me seems so crazy! It cannot possibly be true! What they figured out is one particular response to their actions, and this response gives this universe, and the reality that is behind this is laughing! 'Ha ha! They think they have found me out!'"

I'll close with a quote from Philip Anderson, a Nobel laureate in physics and leading chaoplexologist. When I interviewed him in 1994, Anderson derided the claims of some of his fellow scientists that they could solve the riddle of reality. "You *never* understand everything," Anderson said. "When one understands everything, one has gone crazy."

Further Reading:

See followup post, [Pluralism: Beyond the One and Only Truth](#).

[Is Science Hitting a Wall?](#)

[Was I Wrong about 'The End of Science'?](#)

[The Twilight of Science's High Priests](#)

[How Physics Lost Its Fizz](#)

[Why There Will Never Be Another Einstein](#)

[Can Engineers and Scientists Ever Master "Complexity"?](#)

[Science Will Never Explain Why There's Something Rather Than Nothing](#)

[The Mind–Body Problem, Scientific Regress and "Woo"](#)

[Was Darwin Wrong?](#)

[So Far, Big Data Is Small Potatoes](#)

See also my free, online book [Mind-Body Problems: Science, Subjectivity & Who We Really Are](#).

The views expressed are those of the author(s) and are not necessarily those of Scientific American.



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.