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Can Science Lead to Faith?

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The relationship between science and religion has always been vexed. Most scientists I know are nonbelievers, convinced that there is no deity, or at least that there is no convincing evidence of one. Even those who are believers, like Francis Collins, director of the National Institutes of Health, see their religion and their science as largely separate. (“If God is outside of nature, then science can neither prove nor disprove his existence,” he once wrote.)

But it has been startling to see leading scientists employ science itself in arguments for believing in a kind of supernatural: Jürgen Schmidhuber, a prominent researcher in artificial intelligence, calls for what he has dubbed “computational theology,” while Baylor College of Medicine neuroscientist David Eagleman has proposed a kind of religious perspective that he calls “Possibilianism.” Neither argues for anything like a conventional Judeo-Christian deity, but both point to something beyond the natural universe.

Schmidhuber, in a post on Ray Kurzweil’s A.I. blog, “In the beginning was the code,” begins with the premise that there “is a fastest, optimal, most efficient way of computing all logically possible universes, including ours—if ours is computable (no evidence against this).” Schmidhuber further elaborates on a “God-like ‘Great Programmer,’ ” and a method by which it would “create and master all logically possible universes.”



From this follows what Schmidhuber describes as “Computational Theology,” a component of which is the undeniably heartening claim that “your own life must be very important in the grand scheme of things.” Over all, suggests Schmidhuber, Computational Theology “is compatible with religions claiming that ‘all is one’ and ‘everything is connected to everything.’ ”

If Schmidhuber’s logic is hard to follow, Eagleman’s is not; there is no allusion to computing logically possible universes, nor is there technical-but-nebulous talk of quantum computation. Instead, Eagleman is interested in the limits of our own knowledge, and what we can infer from what we do not know. In a 2009 interview with the *New York Times*, Eagleman, standing in front of a whiteboard full of equations, refers to a book he was then working on (which remains unpublished) called *Why I am a Possibilian*, which he describes as “a nonfiction follow-up to [his] book of literary fiction... which uses the backdrop of different made-up afterlives to explore the joys and complexities of being human.”

Eagleman aims to “make the case that our ignorance of the cosmos is too vast to commit to atheism.” According to Eagleman, his invention, Possibilianism, “emphasizes the exploration of new, unconsidered possibilities,” and is “comfortable holding multiple ideas in mind; it is not interested in committing to any particular story.” Eagleman’s poster child is the Hubble Ultra Deep Field experiment; in a 2010 PopTech talk, Eagleman begins by standing in front of a cloud of stars and describing an experiment that revealed that there were a “thousand trillion stars” in a tiny corner of universe that was previously thought to be dark, “all of them with the potential to house unknown forms of biology.” Eagleman concludes, “This is a good conscious-raiser to think about the size of the mysteries that surround us.” In other words, if we didn’t know what was hiding out there, who’s to say there isn’t a divine creator after all?

Schmidhuber’s computational theology rests on a confusion that philosophers sometimes refer to as the difference between behavior that can be *described* by a rule, and behavior *governed* by a rule. Planets follow elliptical trajectories, but that doesn’t mean that planets have pocket calculators inside their cores. The elliptical trajectories of planets emerge as a property of gravity, not through explicit computation. Schmidhuber may be right that the physical universe is efficient, but he proffers no evidence to suggest that anyone or anything is actually computing the universe. Schmidhuber might be right at some level that everything is connected to everything, but that in itself is not enough to give any reason for believing in God-like Great Programmers.

Eagleman is actually dismissive of God-like Great Programmers, or at least those that he knows anything about. He writes, for example, in the *New Scientist* that “Religious structures are built by humans and brim with all manner of strange human claims—they often reflect cults of personality, xenophobia or mental illness. The holy books of these religions were written millennia ago by people who never had the opportunity to know about DNA, other galaxies, information theory, electricity, the big bang, the big crunch, or even other cultures, literatures or landscapes.” His point is not that he is convinced by any existing religion, but that we should be open-minded to those that have not yet been invented.

Up to a point, there is nothing wrong, scientifically speaking, with Eagleman’s argument. There are some things we don’t know, and it could be, in principle, that some of the things we don’t know pertain to theology. But Eagleman’s argument is weaker than he acknowledges—he implies that if we learn something new about the big bang or DNA, we might somehow discover a deity we had otherwise overlooked, but he offers no specifics. More than that, Eagleman ignores something that is central to modern science: meta-analysis, a set of tools for weighing and combining evidence.

In the empirical sciences, almost everything is a matter of weighing evidence; outside of geometry, it is rare for scientists to literally prove anything. Rather, the more typical trajectory is to rule out competing theories, and accumulate more and more evidence in favor of particular hypotheses. At some level, all scientists are agnostics, and not just about religion, but about virtually everything. I can see with my own two eyes that you have two feet, but for most things that most scientists have observed, I allow that the evidence is indirect; I believe in black holes not because I have seen one, but because, ultimately, I trust that the authorities who have most carefully thought about these things have reached a consensus that black holes provide the best available explanation for a wide range of phenomena, about the distribution of stars and quasars and other matter throughout the universe. I always allow that some other data could become available, but I take the combined evidence in favor of black holes to be very strong.

Eagleman claims that he is offering something beyond the simple observation, held by agnostics for centuries, that there could be some sort of evidence that's been left out. Agnosticism "is often an uninteresting stance in which a person simply questions whether his traditional religious story (say, a man with a beard on a cloud) is true or not true," Eagleman writes. "But," he boasts, "with Possibilianism I'm hoping to define a new position." But it's never really clear what that new position is, or how it differs from agnosticism at a fundamental level. What is clear is that, when it comes to theology, Eagleman is shying away from a technique that forms part of the core of his day job in science: the statistical weighing of evidence.

In particular, Eagleman, who drapes himself in science by declaring to "have devoted my life to scientific pursuit," might think of each extant religion as an experiment. Followers of many religions have looked for direct evidence of their beliefs, but (by Eagleman's own assessment) systematically come up dry. And, crucially, statisticians have shown decisively that a collection of failed efforts weighs more heavily than any single failed effort on its own. The same thing happened, of course, when scientists looked for phlogiston, and cold fusion, too. Nobody has proven cold fusion doesn't exist, but most scientists would assign a low probability to it because so many attempts at replicating the original have failed. Any agnostic is free to believe that his favorite religion has not yet been completely disproven. But anyone who wishes to bring science into the argument must acknowledge that the evidence thus far is weak, especially when it is combined statistically, in the fashion of a meta-analysis. To emphasize the qualitative conclusion (X has not been absolutely proven to be false) while ignoring the collective weight of the quantitative data (i.e., that most evidence points away from X) is a fallacy, akin to holding out a belief in flying reindeer on the grounds that there could yet be sleighs that we have not yet seen.

Scientists and non-scientists alike are still free to believe whatever they want, but the grounds for religion have to be the same as they ever were: faith, not science. Science cannot absolutely prove that there is no divine creator, but the tools of science do allow us to weigh the existing evidence, and assign likelihoods to those hypotheses; by ignoring those tools, Eagleman does science a disservice.

The final strategy of those seeking compatibility between religion and science is to retreat into something that is reminiscent of solipsism, the family of beliefs that allows me to entertain the unfalsifiable yet dubious notion that I might be the only person in the universe (with everyone else just a figment). In a recent book, "Where the Conflict Really Lies," the eminent analytical philosopher Alvin Plantinga acknowledges the possibility of evolution, but suggests that random mutations and the like are "clearly compatible with their being caused by God."

Plantinga argues that Christian believers have a sixth sense, a "*sensus divinitatis*" that allows them to sense God, with that sense defective or absent in nonbelievers. One could, of course, equally generate an infinite range of similar hypotheses, none scientifically testable, such as "only Zeus believers have a working Zeus sense," "only ghost believers have a ghost sense," and so forth, but the possibility of leaping outside the realm of science into a morass of untestable possibilities brings us no closer to a genuine rapprochement between science and religion than we were in the time of Goethe's "Faust."

Illustration by Guy Billout.

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