

Eric Cornell

What Was God Thinking? Science Can't Tell

SCIENTISTS, THIS IS A CALL TO ACTION. BUT ALSO ONE TO inaction. Why am I the messenger? Because my years of scientific research have made me a renowned expert on my topic: God. Just kidding. You'll soon see what I mean. Let me pose you a question, not about God but about the heavens: "Why is the sky blue?" I offer two answers: 1) The sky is blue because of the wavelength dependence of Rayleigh scattering; 2) The sky is blue because blue is the color God wants it to be.

My scientific research has been in areas connected to optical phenomena, and I can tell you a lot about the Rayleigh-scattering answer. Neither I nor any other scientist, however, has anything scientific to say about answer No. 2, the God answer. Not to say that the God answer is unscientific, just that the methods of science don't speak to that answer.

Before we understood Rayleigh scattering, there was no scientifically satisfactory explanation for the sky's blueness. The idea that the sky is blue because God wants it to be blue existed before scientists came to understand Rayleigh scattering, and it continues to exist today, not in the least undermined by our advance in scientific understanding. The religious explanation has been supplemented—but not supplanted—by advances in scientific knowledge. We now may, if we care to, think of Rayleigh scattering as the method God has chosen to implement his color scheme.

Right now there is a federal trial under way in Dover, Pa., over a school policy requiring teachers to tell students about "intelligent design" before teaching evolution. The central idea of intelligent design is that nature is the way it is because God wants it to be that way. This is not an assertion that can be tested in a scientific way, but studied in the right context, it is an interesting notion. As a theological idea, intelligent design is exciting. Listen: If nature is the way it is because God wants it to be that way, then, by looking at nature, one can learn what it is that God wants!

The microscope and the telescope are no longer merely scientific instruments; they are windows into the mind of God.

But as exciting as intelligent design is in theology, it is a boring idea in sci-

ence. Science isn't about knowing the mind of God; it's about understanding nature and the reasons for things. The thrill is that our ignorance exceeds our knowledge; the exciting part is what we don't understand yet. If you want to recruit the future generation of scientists, you don't draw a box around all our scientific understanding to date and say, "Everything outside this box we can explain *only* by invoking God's will." Back in 1855, no one told the future Lord Rayleigh that the *scientific* reason for the sky's blueness is that God wants it that way. Or if someone did tell him that, we can all be happy that the youth was plucky enough to ignore them. For science, intelligent design is a dead-end idea.

My call to action for scientists is, Work to ensure that the intelligent-design hypothesis is taught where it can contribute to the vitality of a field (as it could perhaps in theology class) and not taught in science class, where it would suck the excitement out of one of humankind's great ongoing adventures.

Now for my call to inaction: most scientists will concede that as powerful as science is, it can teach us nothing about values, ethics, morals or, for that matter, God. Don't go about pretending otherwise! For example, science can try to predict how human activity may change the climate, but science can't tell us whether those changes would be good or bad.

Should scientists, as humans, make judgments on ethics, morals, values and religion? Absolutely. Should we act on these judgments, in an effort to do good? You bet. Should we make use of the goodwill we may have accumulated through our scientific achievements to help us do good? Why not? Just don't claim that your *science* tells you "what is good" ... or "what is God."

Act: fight to keep intelligent design out of science classrooms! Don't act: don't say science disproves intelligent design.

Stick with the plainest truth: science says nothing about intelligent design, and intelligent design brings nothing to science, and should be taught in theology, not science classes.

My value judgment is that further progress in science will be good for humanity. My argument here is offered in the spirit of trying to preserve science from its foes—but also from its friends. ■

Eric Cornell won the Nobel Prize for Physics in 2001. This is adapted from a speech that he gave for his induction into the American Academy of Arts and Sciences

