

Redefining Science

Why are scientists so upset about the growing movement to bring “intelligent design” (ID) into science classrooms and public education venues such as science museums, zoos, and theme parks? As we mark the 80th anniversary of the Scopes trial,* the pressure to teach ID as a scientific alternative to evolution has been gaining ground in many U.S. states. There is also increasing ID activity in Latin America and Europe. Are scientists so insecure that they are afraid to subject the core concepts of evolution to public scrutiny? Not likely. They’re accustomed to that. Scientific theories and principles are routinely subjected to close examination and systematic testing. Moreover, scientists are notoriously argumentative and enjoy debating theories with one another.

The problem is that ID advocates attempt to dress up religious beliefs to make them look like science. By redefining what is and isn’t science, they also put the public—particularly young people—at risk of being inadequately prepared to live in modern society. Twenty-first-century citizens are regularly required to make decisions about issues that have heavy science- and technology-related content, such as medical care, personal security, shopping choices, and what their children should be taught in school. To make those choices wisely, they will need to distinguish science-based evidence from pseudoscientific claims.

There is an important distinction between a belief and a theory. ID is cast by its proponents as a scientific theory, an alternative to evolution, but it fails the criteria for achieving that status. In our business, a theory is not an educated guess nor, emphatically, is it a belief. Scientific theories attempt to explain what can be observed, and it is essential that they be testable by repeatable observations and experimentation. In fact, “belief” is a word you almost never hear in science. We do not believe theories. We accept or reject them based on their ability to explain natural phenomena, and they must be testable with scientific methodologies.

ID advocates often attempt to denigrate evolution as “just a theory.” In one sense that’s true. Evolution *is* only a theory, but so is gravity. People often respond that gravity is a fact, but the fact is that your keys fall to the ground when dropped. Gravity is the theoretical explanation that accounts for such observed facts. Scientific theories such as evolution and gravity are accepted only after they have been subjected to validation through repeated observation and experiment, vetted extensively through the peer review process. ID can pass none of these tests. Its proponents assert its scientific standing without undertaking the scientific processes that are required to establish it.

At the same time, it is important for scientists to acknowledge that not all questions can be answered by science. Scientific insights are limited to the natural world. For reasons of their own, some scientists argue with some passion that there could not have been an intelligent designer behind the process of evolution. In fact, we cannot answer that question scientifically, because it is a matter of belief that is outside our realm.

By keeping ID out of the science venue, are we attempting to stifle it? On the contrary, I believe it is appropriate to teach about belief-based concepts like ID in humanities courses, in classes comparing religious points of view, or in philosophy courses that contrast religious and scientific approaches to the world. However, what is taught in science class should be limited to science. Redefining science to get a particular belief into the classroom simply isn’t educationally sound.

Just as the scientific community has broad responsibilities to monitor the integrity with which its members conduct their work, it also must take some responsibility for the uses of science and for how it is portrayed to the public. That requires us to be clear about what science is and to distinguish clearly between scientific and belief systems, in schools and in various public venues devoted to science. Otherwise, we will fail in our obligation to our fellow citizens and to the successor generations of students who will depend on science for their future.

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*From 10 to 25 July 1925, John Scopes was on trial for teaching the theory of evolution in a Tennessee public school. Scopes was convicted of breaking a state law against the teaching of evolution, though the decision was later overturned on a technicality. The law was repealed in 1967.



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