

Evolution, Intelligent Design, and Education

The recent flurry of discussion about Intelligent Design as an alternative theory to the accepted scientific account of the evolution of life on earth highlights some confusion about the nature of science, scientists' much-criticized "assumption of naturalism," and the goals of public science education.

Science is a specific approach to understanding the natural world, based on a combination of evidence and logical reasoning. By definition, science seeks naturalistic explanations for the observations and events it studies because the supernatural cannot be modeled by human logic or judged by physical evidence. Instead, Intelligent Design theory invokes a supernatural being, which is why it is not, and can never be, science. To teach Intelligent Design in public schools as an alternative to the scientific theory of evolution is akin to demanding equal time in Sunday schools for the teaching of scientific explanations for Biblical events. Only great confusion on the proper roles of science and religion can result. Moreover, to point out that current evolutionary theory is incomplete and then cry foul about its teaching betrays a misunderstanding of science: all scientific theories are incomplete, as science is a self-correcting process that seeks to approach the truth as new discoveries are made. This still does not leave any room for supernatural explanations.

"Naturalism" (the idea that science can only work on natural, not supernatural, explanations) has become a bad word because it is mistakenly viewed as a philosophical commitment by scientists to atheism. Instead, science works by applying a practical naturalism in which scientists seek natural explanations, not because these are the only ones possible, but because they are the only ones we can test by reason and evidence (i.e., scientifically). In fact, every human being is a practical naturalist. Suppose you are planning a daytrip and the local meteorologist has assured you that the weather will be good. Then a sudden storm materializes and your trip is ruined. You will likely not invoke a supernatural being to explain the event, but instead assume that there must be some natural (if unknown to you and apparently to the weather channel) explanation for how the storm materialized, seemingly out of nowhere.

The idea that science and education must be democratic is misguided, although springs from good intentions. Public science education must reflect scientific progress in understanding the natural world. Voting for the most popular ideas neither furthers our understanding of science nor does it improve the education of our young citizens. The aim of science education is to present our *best* understanding of a complex natural world, and to provide students with the critical thinking skills needed to navigate it, and hopefully to take our understanding even further. Sound knowledge and critical thinking are crucial to a viable democracy.

Of course, the real reason why evolution (and other scientific theories, such as the Big Bang) is under attack is because many strongly feel that science poses a threat to their religious beliefs about the nature of the world and its origins. We

live in a pluralistic society where freedom of religion is guaranteed by our Constitution. The same Constitution also precludes any particular religious group from imposing their beliefs on society at large. Reconciling scientific progress with particular religious principles has been a challenge throughout the ages, but it is a matter for individuals and between parents and their own children, not for school boards or state legislatures. A democracy needs both a commitment to respect personal beliefs and a commitment to the best education we can offer our children. Modern evolutionary theory, derived from Charles Darwin's original insight, is the best science available. Intelligent Design is not an alternative scientific theory, and is not science at all.

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