
“Some of Intelligent Design’s [ID], most powerful arguments depend on a simple fallacy: the assumption of an end point ... [ID proponents argue that] it is impossible to evolve a particular protein because it has 100 amino acids and the chance of this occurring randomly is 1 in $20^{100}$ ... But such supporters of ID don’t know a billionth of how impossible it is! Let’s say that your mother ovulated 500 eggs during her life and that your father produced $2 \times 10^{42}$ sperm. The chances of you being born, then, are 1 in $10^{103}$ ... [and] the chances of your grandparents giving rise to you is 1 in $10^{63}$. Another reason not to argue with the Intelligent Design people, then, is that, by their own logic, they cannot exist” (p. 49).
In the 1920s, biblical fundamentalists in the United States helped influence more than 20 state legislatures to debate antievolution legislation, and four states—Arkansas, Mississippi, Oklahoma, and Tennessee—prohibited the teaching of evolution in their public schools. In 1968 the Supreme Court of the United States declared unconstitutional any law banning the teaching of evolution in public schools. Thereafter, Christian fundamentalists introduced legislation in a number of state legislatures ordering that the teaching of “evolution science” be balanced by allocating equal time to “creation science.” Creation science, it was asserted, propounds that all kinds of organisms abruptly came into existence when God created the universe, that the world is only a few thousand years old, and that the biblical Flood was an actual event that only one pair of each animal species survived. In 1987 the Supreme Court of the United States ruled Louisiana’s “Creationism Act” unconstitutional, because by advancing the religious belief that a supernatural being created humankind, which is embraced by the phrase “creation science,” the act impermissibly endorses religion.

The most recent confrontation between creationism and the theory of evolution in the courts of law involves the concept of intelligent design (ID). The notion of “intelligent design” as an argument based on natural observations for demonstrating the existence of God has a long history going to classical Greece and Rome. St. Thomas Aquinas had, in mid-thirteenth century, set up the argument from design as the “fifth way” to demonstrate the existence of God: “We see that things that lack intelligence act for an end, which is not fortuitous but results from design ... directed by some being endowed with knowledge and intelligence.” The argument from design for the existence of God based on the living world, would be formulated much later by the English clergyman William Paley in his Natural Theology (1802). Famously, Paley compared a telescope and the human eye, arguing that both were designed, “one by a telescope maker, the other by the same Power who had also created the immense diversity of organisms.” Paley’s argument crumbled, of course, after Charles Darwin’s discovery of natural selection, which provided a scientific explanation of the design of organisms.

Paley’s argument from design is two-tined. The first prong asserts that humans, as well as all sorts of organisms, in their wholes, in their parts, and in their relations to one another and to their environment, cannot have come about by chance, but rather manifest to have been designed for serving certain functions and for certain ways of life. The second prong of the argument is that only an omnipotent Creator could account for the perfection and functional design of organisms. In the 1990s, several authors in the United States revived the argument from design, but modified the second prong of the argument by referring to an unspecified “intelligent designer,” thus avoiding explicit reference to God, so that the argument from design could be taught in the public schools as an alternative to evolution.


*Panda’s* is atypical in that the chapters are written not by evolutionists (or other biologists), but by philosophers and historians of science, with one notable exception, chapter 3, “The Aerodynamics of Flying Carpets: Why Biologists are Loath to ‘Teach the Controversy,’” authored by developmental biologist Scott F. Gilbert “and the Swarthmore College Evolution and Development Seminar.” This chapter is the source of the delightful insight quoted above, at the start of this review.

The distinctive interests of *Panda’s* authors bring to the critique of ID subjects that are not always or mostly biological. Social scientist and historian Jane Maienschein brings new perspectives to the societal dimensions of the evolution-ID conflict by comparing it to the stem-cell research controversy in the United States. Historian and philosopher Robert Maxwell Young focuses on the reductive features of modern evolutionary theory, and of all of science for that matter. Philosopher Michael Ruse, who has written so much and so cogently about the subject in a great variety of venues, here reviews the history of the argument from design and Darwin’s disposition of the argument. He writes: “Darwin managed to turn the problematic nature of adaptation ... on its head, both as confirmation of selection and critique of the Argument from Design” (p. 31). Historian Edward J. Larson eloquently reviews the history of the dispute over the teaching of evolution in the U.S. public schools. Nathaniel C. Comfort, professor of history of medicine and editor of this wonderful book, provides an overview of the controversy, pointing out the struggle of the ID movement to gain credibility, given that only one author, Michael Behe is a “practicing bench scientist among the movement’s leaders” (p. 5). Like Maienschein and other *Panda’s* authors, he posits that “although the controversy is couched in the language and standards of science, it is not about the findings of science. Rather, it is about the place of science in society” (p. 7). *Panda’s* Foreword is written by Daniel J. Kevles, distinguished historian of science and medicine.

There is much to learn that is instructive and edifying in this very readable small book.

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