The Panda's Black Box:
Opening Up the Intelligent Design Controversy
edited by Nathaniel C. Comfort

165 pp, with bibliography and index, hardcover, $20.00
Johns Hopkins University Press, 2007, ISBN 978-0-8018-8599-0

Edited by Nathaniel Comfort, a historian of medicine at Johns Hopkins University in Baltimore, *The Panda's Black Box* brings together a group of six scholars with the goal of discussing the validity of intelligent design (ID) as an alternative to Darwinian evolution. The title of the book, *The Panda's Black Box*, reflects the notion that ID is an unfathomable enigma. It is also a clever amalgam of the titles of two pro-ID books: *Darwin's Black Box*, by ID proponent and biochemist Michael Behe, and *Of Pandas and People*, a supplemental high school textbook that featured prominently in the Dover, Pennsylvania, trial *Kitzmiller vs. Dover Area School District*, which dealt with whether ID should be taught alongside evolution in public schools. (Incidentally, the decision of the judge, John E. Jones, III, was that it should not.)

The Panda's Black Box contains six chapters—one by each of the six scholars—as well as a foreword by Yale University historian Daniel Kevles. The first chapter, an introduction by Comfort, sets the tone for the rest of the book. Here, Comfort critiques not only ID, but also the extreme materialistic worldview of some scientists and philosophers, including Richard Dawkins, Daniel Dennett, and E. O. Wilson. He argues that the root of this extreme worldview is *scientism*, the belief that the only real source of knowledge about the universe is the natural sciences. In the past, Comfort argues, this view gave rise to phenomena such as social Darwinism and eugenics. Today, it incorporates the genetic notion of *innateness* that permeates the writings of Dawkins, Dennett, and Wilson. Regarding the modern misuse of Darwinism, Comfort writes, "Paired with a genetic understanding of heredity, [Darwinism] appears to explain almost anything. It is not irrational to be concerned about the encroachment of scientific authority into all aspects of life" (16). But, ironically—and this is the clincher—ID itself, like the materialistic worldview it rejects, is deeply scientistic:

> [The authority of ID] rests entirely on its ability to mount scientific-sounding cases and make them sound persuasive—on scientific rhetoric rather than scientific evidence. By adopting scientific trappings … the design theorists become co-opted by the very forces they oppose. In short, even while ID attacks science, it accepts science's authority. Of all the forms of anti-Darwinism … ID is the most scientistic. (16)

Thus, Comfort rejects both the extreme materialistic Darwinian worldview and the ID worldview. In the process, he opens the door to a deeper, less superficial coming together of science and religion.

Among the book's six chapters, two—the ones by noted author and philosopher Michael Ruse and by Pulitzer prize-winning historian Edward J. Larson—focus on the roots of the evolution-ID controversy. Ruse, starting with the ancient Greeks, gives a broad historical background. He highlights important past and contemporary figures such as Aristotle, St. Thomas Aquinas, Georges Cuvier, Charles Darwin, William Paley, Stephen Jay Gould, Richard Dawkins, and Michael Behe. Larson, on the other hand, is more cultural and sociological in his approach, focusing on recent events in American history, such

as the Scopes trial in the early twentieth century, the spread of creation science in the 1960s, and the recent promotion of ID by Phillip Johnson and Michael Behe. He also discusses the reactions of scientists to ID, describes the recent Cobb County, Georgia, and Dover, Pennsylvania, trials and emphasizes that teaching the theory of evolution in schools will remain controversial "so long as a significant proportion of Americans hold religious objections to it" (82).

The remaining three chapters stand out because of their unique perspectives on the evolution-ID debate. One of these is by Scott F. Gilbert and his students in the Evolution and Development Seminar at Swarthmore College near Philadelphia. It is titled "The Aerodynamics of Flying Carpets: Why Biologists Are Loathe to 'Teach the Controversy.'" An evolutionary developmental (evo-devo) biologist, Gilbert is author of what is arguably the most well-written and up-to-date college textbook in the life sciences, *Developmental Biology*, now in its eighth edition. He begins by observing that some ID proponents cite his work in the area of evo-devo in an effort to discredit Darwin's theory of natural selection. Gilbert sets the record straight here by emphasizing that evo-devo has no difficulty with Darwin's notion of natural selection or descent with modification. Rather, evo-devo argues that the evolutionary approach dominant today, one which focuses exclusively on population genetics, is incomplete, and that developmental genetics must be considered as well.

Gilbert presents a number of reasons why scientists are reluctant to "teach the controversy," the adoption of which would allow ID to be taught alongside evolution in schools. One of these reasons, which also explains the title of the chapter, is that there "isn't a scientific controversy," because ID has no scientific content of its own. He and his students write that "the debate between evolutionary biology and intelligent design is like a debate over whether the aerodynamics of the Boeing 747 are superior to those of flying carpets" (43). Here, of course, evolution is the Boeing 747 and ID is the flying carpet, a completely fictitious invention whose existence is not based on any scientific evidence. Next, in an interesting journey through developmental biology, Gilbert shows how the "irreducible complexity" of structures such as the vertebrate eye can, in fact, be explained if one understands the developmental context of their formation. Finally, in a concluding section, he takes a turn toward the philosophical. He makes a number of arguments, one of which is that the course of evolutionary history is contingent, and is not part of any divine plan. Intelligent design, he argues, is a sociological phenomenon that came about as a reaction to this hard reality:

> There is no plan for human success and survival. In two hundred years, the human species may be extinct, all our wonderful civilizations will have ended, and no one will remember us. This is a horrific thought. It is what scientists must confront and use their knowledge to prevent. It is what some evangelical Christians feel they must deny. And this denial forms the basis of intelligent design. (61)

Gilbert makes an excellent point here: it is important for us to not bury our heads in the sand of ID, blindly believing that God will save us no matter what we do. And yet for Christians, Gilbert's purely secular account is lacking. Is it not possible for us to both have our feet firmly planted in reality and *also* believe that God has a plan for the universe and for us individually? Cannot we believe that God might somehow work *through* evolution and that, by acting with justice toward the earth and each other, we can help bring God's plan to fruition?

The chapter by Jane Maienschein, Regents' Professor of Biology and Society at Arizona State University and author of the 2003 book *Whose View of Life?*, is titled "Untangling Debates about Science and Religion." Reflecting some of the themes of her earlier book, Maienschein attempts to connect the issues of embryonic stem cell research and ID. Her stated goal is to untangle these two apparently related issues, and thereby promote "tolerance and enlightenment rather than intolerance and misrepresentation" (84). Both ID proponents and "extreme embryo protectionists," she

argues, try to manufacture scientific controversy, and then assert what they consider to be their moral authority.

In the course of her argument, Maienschein asserts that the geneticism promoted by some scientists "feeds the sense that the organism is fixed and that it is, in fact, already effectively the person it might become later. Such thinking is unfortunate in that it unintentionally reinforces a religious and social interpretation that lies outside science and holds that the individual's life begins at conception (typically meaning fertilization)" (96).

Unfortunately, Maienschein is mistaken here. It is not true that the belief that human life begins at conception—a belief that many embryonic stem cell research opponents share—is necessarily rooted in a "genes are us" view. Granted, a gene-centric or genetically deterministic view is common among members of the public and even among Catholic philosophers and scientists. However, it is important to stress that believing that life begins at conception is in no way gene-centric. It is not preformationistic, i.e., it does not adhere to the notion that development follows a "program" that is fixed from the beginning. If anything, it is entirely the opposite, highlighting the holistic, integrated, and responsive nature of the organism throughout its development. The assertion that a new individual comes into being at conception is firmly supported by modern biological science. Thus, Maienschein notwithstanding, there is no validity to the argument that opposition to embryonic stem cell research is based on an interpretation of biological development that "lies outside science" or that, like ID, it tries to fabricate scientific evidence to satisfy religious motivations.

Finally, the chapter by Robert Maxwell Young, a London psychotherapist and scholar, is unique in that it argues that Darwin's thinking and his conception of the term "natural selection" suggest a teleological orientation. He cites cases in which Darwin used language that was "voluntaristic and anthropomorphic" and not at all scientific-sounding. Noting that many Christian writers in Darwin's time saw Darwin's analogy between artificial selection through animal breeding and natural selection as supportive of the argument from design, Young writes that "Darwin saw no point in banishing teleology and was content … to eschew the strictures of the reductionist paradigm" (132). Young's argument about Darwin's lack of rejection of teleology is in accord with the overall theme of *The Panda's Black Box*, which is to highlight the error of not only ID, but also of the more reductionistic interpretations of evolutionary biology. Expressing sympathy with those who believe that nature is deeper than the image that reductionism projects, Young writes, "The goal of reducing all explanations to matter, motion, and number impoverishes our worldview. Is it any wonder that sincere people reach for theological explanations to husband and celebrate the wonders of nature, life and human nature?" (133).

In conclusion, *The Panda's Black Box* succeeds in striking a more conciliatory note in the debate between intelligent design and evolutionary theory, a debate that is often discordant and shrill. On the one hand, borrowing Nathaniel Comfort's words, the book acknowledges the "well-founded nervousness about biology as the basis of morality and ethics" that many people feel. On the other hand, it convincingly argues against the extremes of both the reductionist paradigm that is dominant today and intelligent design. As such, it adds an important and gentler dimension to the debate between intelligent design and evolutionary theory.

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