

## BOOK REVIEWS

**Darwin on Trial**, by Phillip E. Johnson. Washington, DC: Regnery Gateway, 1991, 195 pp.

"Evolution" and "creation" can be defined in a number of different ways, Phillip Johnson points out, and they are not inevitably conflicting concepts; but "Darwinism" and Darwin stand for fully naturalistic evolution which excludes direction, purpose, intelligent creation or design. The scientific establishment claims Darwinism to be proven fact and it is wrong about that, says Johnson; nothing known to science disproves "creationism", the belief that life was created and its development guided by a Creator. (Johnson distinguishes this "creationism" from "creation-science", the fundamentalist claim of a six-day creation about 10,000 years ago, for which he maintains no brief.)

A different book could make the case soundly. No scientific theory is ever finally proven true (even while some scientists declare it to be so); it always remains just the best so-far-conceived way of connecting together certain known phenomena (even while that connecting together is called "making sense of" or "explaining"). Beliefs about God, morals, purpose, and ultimate origins are always immune to disproof by science, albeit such beliefs may seem more or less plausible in the light of scientific knowledge. Thus it seems to most of us nowadays quite implausible that the universe was created ten thousand years ago with every appearance of having evolved for about ten billion years; but implausible, even highly or absurdly implausible, does not validly convert into "impossible": by definition, human beings cannot know or understand the mind of God. Quite plausibly, it seems to many people, the laws of Nature under whose guidance the universe has developed were somehow chosen or established or initiated by an Intelligence. That plausibility and the former implausibility do not exhaust the possible reconciliations between what science now seems to know and what religion seems to have revealed.

But Phillip Johnson has chosen not to make this sound case; instead, he attacks Darwinism within science, and thereby misleads about science and about what science says about evolution. The widespread ignorance over these matters is illustrated by the reviewers who applauded this book, calling it for instance a "cogent, succinct inquiry [that] cuts like a knife through neo-Darwinist assumptions" (1). *National Review* (2) likes it because "you aren't likely to see it reviewed in the *Washington Post* or *The New York Review of Books*". *Christianity Today* (3) sees it as "a credible challenge to evolution's sweeping claims". On the other hand, the book was diagnosed in *Booklist* as "superficially logical and reasonable" (4); and David Hull in *Nature* (5) destroyed the book's pretensions with quiet but decisive authority. Because such polarized reviews characterize

the literature on anomalies, the book is of interest to readers of *JSE* as well as specifically to people who follow the creation-vs.-evolution argument, or who are interested in the wrong things that intelligent people believe about science, or who like to practice critical reading.

In Chapter 5, "The Fact of Evolution", Johnson has a field day with the views of some of those—Isaac Asimov, John Dewey, Theodosius Dobzhansky, Julian Huxley, William Provine, Carl Sagan—who have dogmatically asserted that science demands atheism and a belief in purposeless evolution. Excessive claims by these gurus of science easily backfire; creationists are aided by them just as Velikovsky and his supporters were helped by the sloppy dogmatism of his critics (6). Johnson's case is assisted when he can quote Dobzhansky to the effect that "Evolution . . . may conceivably be controlled by man", Julian Huxley asserting that there is "no longer . . . need or room for the supernatural . . . [in view of] the evolutionary vision . . . the new religion that we can be sure will arise", and a president of the American Association for the Advancement of Science as saying "to doubt evolution is to doubt science, and science is only another name for truth". Stephen Jay Gould contends that "human beings evolved from ape-like ancestors", and Johnson corrects him: what we observe is similarity, not ancestry; "Gould draws the line between fact and theory in the wrong place" (pp. 66–7). One might add that Gould does so in a needlessly provocative way; he could with equal validity have said, "humans and apes have a common ancestry", or "apes evolved from human-like ancestors".

But Johnson himself is as prone as those he criticizes, to the delusion that the paradigms of science are true: "[to] say that naturalistic evolution is science, . . . [is] not very different from saying . . . true" (p. 7); "unquestionably . . . impressive explanatory power, but how are we to tell if it is true?" (p. 66); "before we would be justified in concluding that Darwinism is probably true" (p. 89). Johnson asserts that the National Academy of Science "defined 'science' in such a way that advocates of supernatural creation may neither argue for their own position nor dispute the claims of the scientific establishment" (p. 8). Not at all. No one is obliged to believe the conclusions that atheists draw from their interpretation of what science knows about evolution, just as no one is obliged to believe the conclusions that theistic evolutionists draw from the same body of scientific knowledge; it is just that outsiders to science should refrain from telling insiders how to do their job—just as Johnson and his colleagues would resist scientists telling them how the legal profession should go about its business.

Johnson does not understand that the conclusions of science are restricted to its own sphere of competence. Within that they are tentative even while research proceeds on the assumption that the current paradigms are true. Such belief is heuristic, not an article of faith. By supposing their beliefs to be true, scientists test them. If the assumption is wrong, Nature will sooner or later make that plain by producing inexplicable phenomena; then a scientific revolution follows and a new paradigm is established. Without a paradigm, there can be no organized research; and therefore a paradigm is never abandoned until a better alternative

is available, no matter how unsatisfactory some of the paradigm's corollaries may have become. Though Johnson cites Kuhn to this effect (p. 120), he fails to understand it and writes as though there were something reprehensible about it: "However wrong the current answer . . . it stands until a better . . . arrives. It is as if a criminal defendant were not allowed to present an alibi unless he could also show who did commit the crime (p. 8; see also pp. 28, 63, 154 in particular).

When Johnson says (p. 42), "supposing and believing are not enough to make a scientific explanation", he further reveals a lack of understanding; supposing and believing is precisely what goes on all the time, as tentative explanations are adduced at the frontiers of research. Johnson maintains that scientists "need more than ingenious excuses" (p. 54), but Lakatos pointed out that the invention of ingenious excuses is precisely what scientists do to maintain the utility of the prevailing paradigm as long as possible (7).

Johnson thinks in terms of "the scientific method of inquiry, as articulated by Popper" (p. 154)—apparently unaware that Popper has few if any followers left; "Karl Popper provides the indispensable starting point for understanding the difference between science and pseudo-science" (p. 145)—not according to most philosophers of science, he doesn't, nor to those who have studied specific instances of so-called pseudo-science; "If Darwinists wanted to adopt Popper's standards for scientific inquiry" (p. 152)—but there are no mainstream scientists anywhere who want to do that.

"Access to the relevant scientific information presents no great difficulty", Johnson claims (p. 13). To the contrary, John Ziman has pointed out (8) that although the scientific literature is open and publicly available, only experts can interpret it correctly. Johnson's book shows that he has read a lot of the right stuff, and he proves Ziman right because that reading has left him with quite mistaken views; for example, having explained pleiotropy and group selection, Johnson then reveals that he doesn't understand their import (pp. 30–31). He could scarcely write "all frog species look pretty much alike . . . but their molecules differ as much as those of mammals" (p.90) if he understood how important it is to specify which molecules are being discussed: DNA, hemoglobin, ATP, or what? And one who knows what mitochondria are must be taken aback to read that "mitochondrial DNA . . . is passed only . . . from mother to daughter" (p. 97), as though males had none. Here again there is a similarity with Immanuel Velikovsky and his ilk, the outsiders who think they can, by reading the literature, come to understand science well enough to engage in technical argument with the insiders. It just isn't so. And like Velikovsky, Johnson cites unpublished and privately printed work (of Bowden, p. 175; of Thaxton, p. 183), thereby revealing his ignorance that a goodly part of the reliability of science stems from ignoring what has not passed the gauntlet of referees and editors. On prebiological evolution, he "particularly" recommends (p. 182) not only the excellent books by Cairns-Smith and by Robert Shapiro but also *The Mystery of Life's Origin* (by Charles Thaxton, Walter Bradley, and Roger Olsen) which displays the misunderstanding of thermodynamics typical of the creation-science that Johnson claims to disavow.

In this book as in the Velikovsky affair, there is much more rhetoric than substance. Labeling natural selection tautological (*passim*) is rhetorically powerful; but if one recalls that the environment has changed dramatically over the 4 to 5 billion years of the Earth's existence, by both slow "uniformitarian" change and periodic "catastrophism", it follows that quite different chance variations will have been selected for at different times (as well as in different places), so that the concept of such selection does make it plausible that an evolutionary pattern could emerge. To call "saltationist evolution" a "meaningless middle ground somewhere between evolution and special creation" (p. 61) is just an unfounded assertion that there is no point in looking for possible mechanisms of generic differentiation; to recall that Darwin thought it "rubbish" is beside the point since no living biologist feels obliged to agree with something just because Darwin said it. That a dissected coelacanth showed no amphibian traits tells us nothing at all about its presumed relatives of several hundred million years ago, never mind that Johnson takes it to suggest "that a rhipidistian fish might be equally disappointing to Darwinists if its soft body parts could be examined" (pp. 74-5); it might, yes, but equally it might not. "That 130 years of very determined efforts . . . have done no better than . . . a few ambiguous supporting examples" is for Johnson "significant negative evidence" (p. 84) when it is nothing of the sort; science progresses at its own pace, one thing after another; Johnson fails to acknowledge that biochemistry and molecular biology have discovered a host of similarities and relationships among all living things that were not known in Darwin's time. Scientists "never find evidence that contradicts the common ancestry thesis" not "because to Darwinists such evidence cannot exist" (p. 152) but simply because the evidence hasn't yet shown up: there are no human footprints dating from dinosaurian eras, nor are there fossil mammals from the pre-Cambrian era, to give only two out of a myriad of possible finds that would be incompatible with the concept of common ancestry and descent with modification.

Evidence that Johnson cannot deny he talks aside. The mammal-like reptiles, which show progressive change from reptile-like in the lower strata to mammal-like later, are dismissed because "The notion that mammals-in-general evolved from reptiles-in-general through a broad clump of therapsid lines is not Darwinism" (p. 76); maybe not, but it is consistent with the idea of evolution gradually under natural selection, which is the whole point, after all. "Darwinian transformation requires a single line of ancestral descent" (p. 76) only because this is the straw man that Johnson feels able to attack. The therapsids show that "for this example some sort of evolutionary model is preferable to the creation-science model of Gish, but . . . does not qualify, or purport to qualify, as a genuine testing of the common ancestry hypothesis itself" (p. 174) only because Johnson says so; others would view the evolutionary hypothesis confirmed by the finding of this group not only intermediate between reptiles and mammals but even showing change from more like the one to more like the other.

Archaeopteryx cannot be explained away either, so Johnson calls it "a point for the Darwinists, but how important . . . ?"; "a possible bird ancestor rather

than a certain one" (p. 79); as though science were suggesting anything else. That there is "plenty of difficulty in imagining . . . descendants as varied as the penguin, the humming bird, and the ostrich", no one denies, though scientists find it a challenge rather than an invitation to stop working at it or to deny the value of the evolutionary paradigm.

The subtlety of Johnson's rhetoric may be recognized best if one suggests paraphrases: for "scientific orthodoxy" (p. 3), read "currently most common scientific opinion"; chemical evolution did not achieve its "greatest" (p. 102) success in Miller's work of the 1950s, though one might legitimately call it the earliest success. Instead of evolution by macromutation is "impossible" (p. 37), say more correctly "not currently explicable or conceivable"; it is not that "to Darwinists unsolvable problems are not important" (p. 85), it is that scientists do not call problems not yet solved "unsolvable". For Darwinists "cannot demonstrate", for their "inability" (p. 142), read "cannot yet demonstrate" and "present inability". Calling "impossible to understand" what is merely not yet understood is a common ploy in these sorts of arguments. Also common is the citation of authorities as though they agreed with the author's main point when actually they do not; Johnson misleads in this fashion with De Beer (p. 172), Dose (p. 183), Eldredge (p. 60), Grene (pp. 171, 186), Kimura (p. 180), Mayr (p. 89), Raup (p. 171), and Shapiro (p. 183).

Johnson lumps all evolutionists together as Darwinists (pp. 4, 5, 9) to whom "the possibility that beyond the natural world there is a further reality which transcends science . . . is absolutely unacceptable" (p. 110; see also pp. 8, 101, 114, 127). Johnson doesn't understand that even Darwin's original "theory" contains at least five separate concepts that can be held independently (9); and he doesn't understand the diversity that obtains within the scientific community, the republican working of that community (10) in which there coexist umpteen different flavors of "evolutionist", when he confuses Judge Overton's finding that the conclusions of science are always tentative with the fact that (according to Johnson) "scientists are not in the least 'tentative'" (p. 113); that some scientists are dogmatic is no more to the point about what science has to say about evolution than the fact that some lawyers are dishonest tells us anything about the law's attitude toward honesty.

Johnson reveals the dogmatism of his own beliefs when he cites "the profound dissimilarities between humans and animals of any kind" (p. 91) and says that "the positive evidence . . . [for] Darwinian evolution . . . is nonexistent" (p. 115); and he can be rather nasty about those he sees as his opponents: "the experts, meaning those who had the most to lose" (p. 82); "Richard Lewontin and Stephen Jay Gould have proudly claimed Marxist inspiration for their biological theories" (p. 135); "human descent from apes is not merely a scientific hypothesis; it is the secular equivalent of the story of Adam and Eve . . . [which] requires a priesthood, in the form of thousands of researchers, teachers, and artists" (p. 83).

Why did Johnson feel the need to dispute Darwinist theory on its own ground, in the details where he cannot win, instead of on the broad and sound ground

that science cannot disprove a wide range of possible religious beliefs? Because, it turns out, Johnson wishes a "supernatural Creator [who] not only initiated . . . but in some meaningful sense controls . . . [evolution] in furtherance of a purpose" (p. 4); and if one wants a Creator who intervenes tangibly, then one requires tangible evidence of intervention and is pushed to look for such evidence in "impossible" saltationist leaps between genera or classes or orders; one asserts that "In a word (Darwin's word), a saltation is equivalent to a miracle" (p. 32). Phillip Johnson "is creating something new" with this critique, according to *Christianity Today* (3). Not at all. Another lawyer made much the same argument twenty years ago (11), complete with the same misunderstandings of how science works and a reliance on Karl Popper for defining what science ought to be. New might be a discourse on the wide range of religious belief that remains plausible in the light of what science has learned about the physical mechanisms of life.

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### References

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