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Confuting Darwinism's Enemies—and False Friends Too

Darwinism and Its Discontents. by Michael Ruse

Review by: DAVID DEPEW

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Confuting Darwinism's Enemies—and False Friends Too

Darwinism and Its Discontents. Michael Ruse. Cambridge University Press, New York, 2006. 316 pp. \$30.00 (ISBN 9780521829472 cloth).

Referring to the aura of mystery surrounding the ancient Etruscans and their supposedly indecipherable language, D. H. Lawrence once wrote, “I don’t think there is any other field of human knowledge in which there is such a daft cleavage between what has been scientifically ascertained and the unshakeable beliefs of the public” (quoted in Robert Hughes, *Things I Didn’t Know: A Memoir* [New York: Knopf, 2006], p. 246). Lawrence must not have known about evolutionary biology—or was unaware of the gap between his own daft view of it and what had been scientifically ascertained even in his day.

I mention this because it gives a feel for the situation to which Michael Ruse addresses himself in *Darwinism and Its Discontents*. In part because he has been more willing than most biologists and philosophers of biology to engage in the rough-and-tumble of public debate, Ruse has been an effective advocate for Darwinism. The present book follows on the heels of Ruse’s *The Evolution–Creation Struggle* (Cambridge, MA: Harvard University Press, 2005). It thus reflects his keen awareness that, although they have lost every court case since they began their most recent crusade to get Darwinism out of the schools, creationists and their kissing cousins in the intelligent design (ID) movement (who take Darwinism’s opposite number to be Paley’s argument from design rather than a literal reading of Genesis) have nonetheless managed to throw so much sand in the eyes of the general public that many people actually think that evolution—specifically, the common descent of all organisms on Earth from a common ancestor—is still in dispute. Worse, the public has been led to believe that the factuality of evolution is hostage to Darwin’s theory of natural selection as its

cause, and therefore that the mere existence of controversies among Darwinians throws doubt on the phenomenon of evolution itself. Commendably, Ruse’s aim in this book is to wise up the public.

Ruse’s strategy is to update Darwin’s own argument. With respect to evolution itself, Darwin cited converging facts from a variety of different sciences—embryology, biogeography, classification, and so forth—and inferred that evolution is their best explanation. (This is a proof procedure that William Whewell, whom Ruse somewhat controversially takes to be Darwin’s primary methodological mentor, called “consilience.”) Ruse points out that evolution (a “theory” only in the nontechnical sense in which any factual conclusion drawn from reasoning rather than direct observation alone is a theory) remains the best explanation of the fact that “missing links” have been popping up regularly since Darwin’s day, with no countervailing finds; that phylogenies first established by traditional systematic methods have been corroborated, except for details, by phylogenetic systematics; and that recently these phylogenies have been shown to be beautifully consilient with molecular sequencing data coming from a flood of genome sequencing projects.

Ruse’s account of natural selection follows suit. Selection is the best explanation of evolution. Selection has been confirmed in the lab and, with increasing success and sophistication, in the wild. In the second connection, Ruse cites the well-known work of Peter and Rosemary Grant on Darwin’s finches. Is there empirical evidence for speciation, too? Ruse cites apple maggot flies, which parasitize both apple trees and hawthorns. Although capable of interbreeding, the sexual unattractiveness of these subpopulations to each other suggests a speciation event in the making.

Ruse’s portrait of Darwinism as a continuous, cumulative, progressive research tradition set on the correct path by its ingenious founder is a good part of the

persuasive strategy of the book. After all, we do like our science to be cumulative. The very idea that it might not be is what bothers people about Thomas Kuhn’s paradigms. But this strategy also commits Ruse to (or perhaps springs from) a substantive claim according to which the main line of Darwinism always has been, and presumably always will be, one in which the targets and beneficiaries of adaptive natural selection are individual organisms considered as members of discrete interbreeding populations. The discovery of genes, Ruse assures us, did not affect this continuity. “The genes (genotype),” he declares, “and the physical features (phenotype)...are not rivals” (p. 108). Accordingly, Ruse thinks that group-level selection either is rare or turns out to be individual selection after all. So much for groups, above the level of the individual. What about genes below? Ruse’s assurance of preestablished harmony between genes and adapted traits implies that “selfish gene theory” is just another way of formulating organism-centered Darwinism, perhaps more useful on some problems than others. This is controversial, and I would have welcomed some discussion.

Ruse’s claim about the continuity of the organism-centered Darwinian main line may well be historically and theoretically defensible. It is far from self-evident, however, if only because Ruse burdens it with a more contentious line of argument. He claims that self-proclaimed Darwinians who depart from the main line are not Darwinian at all, but constitute a fifth column of false friends whose ill-disguised “visceral hatred” of Darwinism gives aid and comfort to the creationist enemy and might even spring from psychological disorders. The context indicates that Ruse has at least partially in mind the late Stephen Jay Gould and the distinguished population geneticist Richard Lewontin. Their famous criticism of “the adaptationist program” sprang, Ruse implies, from a prior commitment to Marxism that trumped their

supposed Darwinism. For Ruse, the cure for bad adaptationist arguments is good ones, not confessions of failure invoking phylogenetic constraints, hopeful monsters, or species selection.

If I were a creationist or ID enthusiast, I would take comfort from the heresy-hunting and *ad hominem* quality of this dismissal. To me, these arguments sound more like politics than science or philosophy. But I must confess that I am a bit sensitive about the issue. At one point in Ruse's book, I myself am excommunicated. In *Darwinism Evolving: Systems Dynamics and the Genealogy of Natural Selection* (Cambridge, MA: MIT Press, 1994), Bruce Weber and I never claimed that *Darwinism* needs to be "augmented" by nonlinear dynamics, as Ruse reports. We suggested only that the mathematical models used by Darwinian research programs associated with the modern evolutionary synthesis do. Our remark can be interpreted Ruse's way only if any departure from the main line is called "non-Darwinian," the point at issue. Darwinism's history itself sug-

gests that sometimes departures from the main line are actually causes of its ultimate continuity. Ruse himself reports that by using Sewell Wright's "not very Darwinian" theory of genetic drift, Mayr's hypothesis of allopatric speciation unified selection and isolation—and did so by discounting Darwin's own commitment to sympatric speciation. Other, similar stories suggest that if the hypotheses and conjectures of evolutionists hug the shore as closely as Ruse seems to recommend, Darwinism even of his preferred sort might be badly served—especially now that a revolution in developmental genetics is putting pressure on existing models of gene-environment interaction, a topic Ruse does not discuss.

A difficult issue looms here. Is it better to admit the contentiousness of the Darwinian tradition, thereby giving scandal to people who want their science smoothly cumulative, or to exploit the public's assumptions by portraying Darwinism as always piously conforming to conventional notions of what science

must be like? The choice is especially vexed because—as Ruse acknowledges in his critique of Karl Popper's doubts about whether Darwinism is science at all—evolutionary science is more focused on particular cases than, say, physics. Physics-envying evolutionists like R. A. Fisher have tried to portray the mathematization of selection as a step toward the discovery of universal laws. It is more likely, however, that mathematical modeling serves evolutionary biologists as an increasingly powerful toolkit for finding the best explanation of particular cases—and is "good quality science" for all that. Nonetheless, physics-oriented scientists and philosophers will always worry about this difference, and creationists will always exploit their worries by exaggerating to nontechnical audiences the significance of controversies among evolutionists, making too much of rare cases of fraud, and proclaiming in consequence that it is metaphysical materialism rather than science that holds Darwinism together.

This unedifying argumentative dynamic is especially important now that

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Darwinian naturalism is steadily encroaching on the territory of the human sciences, including psychology. In the last third of his book, Ruse draws attention to the possibility—for him a strong probability—that our reasoning powers (or rather their endemic defects) and our ethical norms “have the pragmatic origin of having proven themselves in the struggle for existence.” I resonate with Ruse’s argument that these encroachments are sufficiently powerful to undermine the indifference to the consequences of Darwinism (as well as the misunderstanding

that for him divine design remains a plausible alternative. Ruse’s rejection of Plantinga’s hyperbolic standard of reasoning is of practical, as well as theoretical, importance. ID adherents have used the same tactic as opponents of global warming, stem cell research, and other *bêtes noires* of the right: Exploit the public’s high regard for the validity of science by setting the bar for what will count as good science so high that even the best actual science must fail to meet it. Whether knowingly or not, Plantinga gives these folks undeserved cover.

Ruse acknowledges that Darwinism and religious belief are not logically inconsistent and that, this being so, Darwinism has no a priori commitment to philosophical materialism. To be sure, by any reasonable standard of proof, Darwin did “undermine the argument from design” and with it “all of natural theology.”

of it) blithely shown by literary humanists and most philosophers (chapters 10 and 11). After all, John Dewey made these very points a century ago. Nonetheless, I do think that Ruse trips too lightly over the unhappy track record of prior incursions of Darwinism into human affairs. “Not real Darwinism,” Ruse replies when speaking of social Darwinism. He would probably say the same of eugenics, which he doesn’t mention. Well, sure, I say—but only in retrospect. Thus I think Ruse’s confidence in the reliably and responsibly cumulative prowess of Darwinian science might well be tempered by what Gould and Lewontin took from the Marxist tradition: an awareness that largely unconscious ideological distortions are so strong and pervasive that a high burden of proof must be put on scientific claims about human nature, beliefs, and actions.

It is simply amazing how much information and argumentation Ruse has packed into an average-sized trade book. I hope *Darwinism and Its Discontents* does what it is intended to do: change minds. I am especially hopeful about the lessons taught by Ruse’s spirited rejoinder to the antievolutionism of the philosopher Alvin Plantinga. Plantinga uses skepticism about claims less than absolutely certain (and laws less than universal) to find Darwinism so wanting

Ruse’s reply to Plantinga is all the more effective because Ruse acknowledges that Darwinism and religious belief are not logically inconsistent and that, this being so, Darwinism has no a priori commitment to philosophical materialism. To be sure, by any reasonable standard of proof, Darwin did “undermine the argument from design” and with it “all of natural theology.” So distancing religious belief from natural theology is especially important in light of Richard (“Selfish Gene”) Dawkins’s claim in a highly publicized trade book (*The God Delusion* [New York: Houghton, 2006]) that the invalidity of the argument from design turns Darwinism into a defense of atheism. In the final chapter, Ruse opposes this argument: Religious belief and practice have very little to do with the argument from design, and Darwinism has little to say about the many religious beliefs and practices that are not predicated on strict Biblical literalism.

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TO WHOM AM I SPEAKING?

Animal Communication Networks. Peter McGregor, ed. Cambridge University Press, New York, 2005. 657 pp., illus. \$135.00 (ISBN 9780521823617 cloth).

Sometimes, when we want to be careful about our communication or we are not sure who is listening, we adopt a formal tone and say something like, “To whom am I speaking?” This can be a humorous inquiry when we know very well who is listening and we do not have to be careful. Or it can be a serious question when, as observers, we are not sure who is being addressed. An animal communication network approach, as outlined by Peter McGregor in his previous writings and now in his excellent book *Animal Communication Networks*, asks us to reconsider to whom animals are speaking when they signal. Are they being careful in ways we have not previously considered? Are they addressing a number of different recipients in ways we have not understood? What are the implications of these, and other, considerations for the study of signaling strategies?

For years, researchers in the field of animal communication have focused primarily on the dyad of sender and receiver. Although they were aware that communication events were actually more complex, it was often necessary to first demonstrate more straightforward aspects of these events to provide a strong basis for further study. The dyad was also often the easiest and quickest aspect that could be analyzed—especially before the development of such things as handheld electronic event recorders, compact digital audio and video equipment, and computers with statistical packages.

In this book, Peter McGregor shows us that it is difficult to build a strong basis for understanding communication if one looks only at dyads, and that the time has come to build on the dyad information base. He offers a network approach as a logical next step in a maturing field. It seems we live in an age of networks—brain networks, genetic networks, and,