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Book Review: Not from Heaven, Not in the Genes

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John Dupré, *Darwin's Legacy, What Evolution Means Today*, New York: Oxford University Press, 2003, 138 pp.

Professor of Philosophy of Science at the University of Exeter since 2000 and from 2002 director of the ESRC Center for Genomics in Society Egenis, John Dupré has written a small book on evolution means today - although at just 133 pages and with neither footnotes nor references, it might be better referred to as a pamphlet, in the best sense of the word. Darwin's Legacy is a polemical piece, aimed at those who believe that people and the universe they are part of are blueprints from god or genes. Basically, the polemic is concerned with two main issues. The first is the creation of boundaries, and Dupré draws them sharply. Without a shadow of doubt, he declares, the main propositions of the evolutionary program laid down by Darwin are not compatible with the concept of the existence of God. According to Dupré, we cannot understand ourselves theologically. Equally, he repudiates the idea that such an understanding can be accomplished by reading genes. Genes, he argues, do not carry blueprints, and do not explain to us who we are. The second issue is about turning the boundaries of God and genes into frontiers, behind which lies the conceptual space to be conquered.

Darwin's Legacy is the latest book by John Dupré in which he expounds a philosophical view on biology (his previously books being Humans and Other Animals, 2003; Human Nature and the Limits of Science, 2001; and The Disorder of Things: Metaphysical Foundations of the Disunity of Science, 1993). Dupré's research career has been in the philosophy of science, in particular of biology. The polemical style of this book and the targets Dupré aims at so explicitly - the proponents of intelligent and genetic design - must be understood against his long stay in the United States, a country not only where the idea of *intelligent design* (divine creation) is propagated in a partisan way by fundamentalist Christian groups and organizations, but which is also the breeding ground of genetic approaches to social behavior, e.g. sociobiology and its offspring, evolutionary psychology. Dupré worked and lived in the

United States for many years, both before and after he received his Ph.D. at Cambridge, having studied two years in the U.S. before his doctoral graduation in 1981, and later worked at the Department of Philosophy at Stanford University between 1985 and 1996 - following which he returned to the U.K. to take up a post as Professor of Philosophy in Birkbeck College before moving to Exeter.

Dupré is very clear about his own position, which is to the credit of the partisan and the scientist, and in Darwin's Legacy he is both. Early on (p.10), he explains that his own scientific position is grounded in skepticism and empiricism. Skepticism and empiricism are closely related: skepticism refers to a questioning of whether there are good grounds for believing those things we believe, while empiricism provides the standards to which belief should adhere, emphasizing direct experience as the basis of scientific knowledge. The term 'empirical' was originally used by the skeptic philosopher and physician Sextus Empiricus, who relied on the observation of *phenomena* as perceived in experience. Evolution, Dupré argues, is also based on observation and experience.

Dupré aim in Darwin's Legacy is not to explain to the reader in a nutshell the propositions of Darwin, but rather to consider what these propositions tell us about ourselves and our world. His answer is that, although the evolution theory has momentous consequences for our view of ourselves and our place in the universe, it is of limited use in illuminating human nature. His interesting idea is that evolution theory (which he refuses to call a theory) has not been able to give satisfying answers on the evolution of species (such as why giraffes have long necks, the species he repeatedly refers to in his book). Dupré suggests that the value of evolution theory lies not in its explanation of the evolution of species, but in its ability to provide meaning for ourselves. According to Dupré, evolution has much to say about our place in the universe. But what it tells is mainly negative. No God, no genes.

The no-God proposition of the book argues that the evolutionary program 'delivers a death-blow to pre-scientific, theocentric cosmologies' (p.41) and 'provided a fatal injury to the pretensions of religion' (p.42). Therefore, Dupré thinks that the religiously minded should be fearful of the general acceptance of evolutionary thought. He believes that the growth of science over the last centuries has gradually eroded the grounds for religious belief (actually a rather bold proposition, with which many a social scientist would disagree), and that Darwin's contributions were significant in this process (ch.4). Dupré puts the Darwinist account of the origin of species and the religious account

of the origin of man in diametrical opposition to each other, as irreconcilable perspectives on life on earth. In so doing, he distances himself from the attempts of two prominent evolutionists, Steven Jay Gould and Michael Ruse, to defend the compatibility of Darwinism and Christianity. In order to reach his conclusion, however, Dupré uses a rhetorical trick. Basically, the argument is that science is incompatible with religion, and that Darwinism is science, so Darwinism is therefore incompatible with religion. However, the argument that science is incompatible with religion is not given a foundation in Darwin's thought, but in Dupré's understanding of science. Dupré is, as we have remarked, a skeptic and empiricist. He argues that belief in the existence of things should be grounded in experience, and therefore there refuses to countenance the existence of ghosts, souls, and, ultimately, God. However lucid his argument ('An entity that intervenes in space and time can, while so intervening, provide empirical evidence for its existence. It fails to do so, I remain so far unconvinced of its existence.'), the proposition of the incompatibility of evolutionism with religious thought does not convince. It only proves that in Dupré's understanding of science there is no place for such thoughts.

Dupré's no-genes proposition does not only disqualify attempts to correlate features of an organism's adaptation of genes to particular circumstances (ch.3), but also attempts to correlate features of the genome to features of the mind, the subject of research in sociobiology and evolutionary psychology (ch.6). The approach of sociobiologists and evolutionary-psychologists (pseudo-science according to Dupré) puts genetics at the center, failing to recognize, he ague, that many features of organisms (or, for that matter, human beings) cannot be accounted for in genetic terms. In his conclusion, Dupré observes that "the hopelessness of the attempt to correlate features of the genome with features of the mind can provide an extreme illustration of the hopelessness of the genetic view on evolution".[1]

In chapter 2, Dupré argues that that the evolution theory is not so much a theory, but a set of propositions. The core propositions of the theory which is not a theory, assert that life on earth evolved, complex forms derived from simpler forms, and life forms share common ancestors. These propositions themselves gave life to several theories - for example, theories of natural selection, which aim to contribute to an understanding of how life forms evolved and modifications occurred, and to explain how complex forms evolved from these simpler ones. However, there is a heated debate with competing theories of how this process of natural adaptation occurred, ranging

1 See also Steve Hughes, Navigating genomes: The space in which genes happen, in *Tailoring Biotechnologies*, Volume I, Issue 1, pp. 35-46.

from theories at the gene-level (which argue that the target of selection is not the organism, but the gene, and the organism is only the vehicle of the gene to project itself most effectively into the next generation) to theories at the system level (which offer an account of natural selection at the level of development cycles, arguing that those organisms will survive that are best able to gather together and deploy the full set of resources necessary for their reproduction). The gene/system debate is a source of controversy between different schools of thought, but, Dupré claims, is completely internal to the 'broad evolutionary program', and fit unproblematically into the general propositions of evolutionary thought (with the exception of sociobiology and evolutionary psychology, which he disqualifies as pseudo-sciences).

Dupré also suggests (ch.3) that the ability to provide detailed explanations of specific phenomena is often overstated. Take the example of the long necks of giraffes - if giraffes are fitter with longer necks, allowing them to reach for higher leaves and thereby survive food shortages at ground level, and long-neck giraffes have longer-necked offspring, then a population of giraffes will evolve with even longer necks. The explanation is awfully reductionistic, since it takes the neck apart from the organism (the giraffe, which is more than a neck to support leaf consumption), giving us an account based on how the particularities of the parts explain the whole. Dupré argues that giraffes already had long necks when they started eating high leaves; and, furthermore, that it is likely that the advantage of finding food at high levels above the ground is at least sometimes outweighed by the disadvantages, and to explain the story of the long necks therefore, one needs to write a full history of the lineage. There is no simple selective story to explain the giraffes' long necks. Unfortunately, Dupré does not give us any indications as to how to write such histories, and this is where the book fails to give a positive explication of the subtitle of the book, what evolution means today - other, that is, than that we do not originate from heaven and are not to be localized in genes.