

Darwin, *Origin of Species*—The Issues

From http://www.uky.edu/AS/Philosophy/BradshawPhi100/darwin_origin_of_species.doc [September 2007]

A. Clarifying the Issue

Let us distinguish the following claims:

(1) *Successive emergence*: Fossils show that different species have emerged successively over hundreds of millions of years in an order that generally goes from the less to the more complex.

(2) *Common descent*: These species can be related in a genealogical tree beginning with the less complex and leading to the more complex.

(3) *Naturalistic explanation*: The process by which this process took place can be understood naturalistically, i.e., without reference to God or other supernatural agents.

(4) *Darwinian evolution*: Specifically, the process was the accumulation of many small changes that had survival or reproductive value (“natural selection”).

(5) *Biological naturalism*: All other facts pertinent to biology, including the origin of life, can be understood naturalistically.

(6) *Scientific naturalism*: All facts pertinent to science, including the origin of the universe (the Big Bang) and the apparent “fine-tuning” of the laws of nature, can be understood naturalistically.

(7) *Complete naturalism*: All facts whatsoever, including human morality and the processes of reason, can be understood naturalistically.

Obviously there is a progression from (1) to (7). It is possible to agree with (1) but not (2)–(7), or (1) & (2) but not (3)–(7), and so on. Darwin himself asserted only (1)–(4). Whether he believed (5) is unclear; in the First Edition he spoke of the first organism as having been “created,” but he removed this passage in the Sixth Edition. In his *Descent of Man* and *Autobiography* he leans toward (7).

Here our focus will be on (1)–(4). We should keep in mind that the reason these are *philosophically* important is because of their relevance to (5)–(7). We should also keep in mind that even if (1)–(4) are true, (5)–(7) might be false. Nonetheless, the widespread acceptance of (1)–(4) did lead to the widespread acceptance of (5)–(7), so the two groups are certainly linked.

B. Darwin’s Strategy

Darwin thinks that (1) is definitely true. However, he also thinks that the fossil record seems to be *against* (2). He writes: “Why does not every collection of fossil remains afford plain evidence of the gradation and mutation of the forms of life? Although geological research has undoubtedly revealed the former existence of many links, bringing numerous forms of life much closer together, it does not yield the infinitely many fine gradations between past and present species required on the theory, and this is the most obvious of the many objections which may be urged against it.”

Thus Darwin needs an argument for (2) that is strong enough to overcome the obstacle posed by the fossil record. His argument can be paraphrased as follows:

(1) It is possible to explain many facts about the structure and distribution of organisms through natural selection.

(2) These facts cannot be explained through the rival theory of “special creation” by God.

(3) Natural selection and special creation are the only plausible contenders for explaining the origin of species.

(4) Since special creation fails to explain the facts mentioned in (1), we should accept natural selection as explaining the origin of species.

(5) Therefore (2)--(4) [of the original analysis] must be true, despite the apparent evidence of the fossil record.

Given the structure of this argument, it is important to understand precisely what is meant by “special creation.” The closest Darwin comes to defining it is his reference to the idea that “the more complex organs and instincts have been perfected . . . by means superior to, though analogous with, human reason.” Later he adds that on this view, “the inhabitants of any one country . . . have been specially created and adapted for that country.”

Darwin does not explain why natural selection and special creation (in this sense) are the *only* plausible contenders for explaining the origin of species. We will return to that question later. First let us examine his objections to special creation.

C. Darwin vs. Special Creation

The following are the major features that Darwin thinks are better explained by natural selection than by special creation:

(1) The “grand fact of the grouping [within a few great classes] of all organic beings.”

(2) Cases of apparent mismatch between structure and function: “How strange it is that a bird, under the form of a woodpecker, should prey on insects on the ground; that upland geese, which rarely or never swim, would possess webbed feet; that a thrush-like bird should dive and feed on sub-aquatic insects; and that a petrel should have the habits and structure fitting it for the life of an auk!”

(3) The fact that “the contrivances in nature be not, as far as we can judge, absolutely perfect; as in the case even of the human eye.”

(4) The fact that some of them are “abhorrent to our ideas of fitness.” “We need not marvel at the sting of the bee, when used against the enemy, causing the bee's own death; at drones being produced in such great numbers for one single act, and being then slaughtered by their sterile sisters; at the astonishing waste of pollen by our fir-trees; at the instinctive hatred of the queen-bee for her own fertile daughters; an *ichneumonidae* feeding within the living bodies of caterpillars; and at other such cases.”

(5) Traits that seem to serve no useful purpose, such as stripes on the shoulders & legs of horses. (“How simply is this fact explained if we believe that these species are all descended from a striped progenitor.”)

(6) The fact that “allied species, when placed under widely different conditions of life, yet follow nearly the same instincts; why the thrushes of tropical and temperate South America, for instance, line their nests with mud like our British species.”

(7) The geographic distribution of some species; for example, why frogs and terrestrial mammals do not inhabit oceanic islands, but bats do, and why species on islands generally are closely related to those on the nearest point of the mainland.

(8) The presence of “organs bearing the plain stamp of inutility, such as the teeth in the embryonic calf [which never emerge from the gums] or the shrivelled wings under the soldered wing-covers of many beetles.”

The assumption running throughout this list is that we are in a position to say what God would or would not have done in creating animal life. He would not have created anything that serves no useful purpose, such as the stripes on horses or the teeth in the embryonic calf; nor anything imperfectly matched to its function, such as webbed feet on birds that do not swim, or the imperfect human eye; nor anything “abhorrent to our ideas of fitness,” such as wasps that lay their eggs in living caterpillars. Nor would He have done anything that is simply arbitrary, such as creating species only of certain broad types but not others. Finally, He must have made each species “specially created and adapted for that country,” rather than (say) placing animals only on the mainland and allowing those that could do so to migrate to the islands.

D. Darwin & Rationalism

Why did Darwin make these assumptions? Because others had been doing so ever since the time of Descartes & Locke! Recall that on the rationalist view of God, God is an “ideal engineer.” This means that (a) He will have a *reason* for everything He does, and (b) He will *maximize good and minimize evil*. Thus He will do nothing that is arbitrary or pointless, and He will not permit suffering that could be avoided (such as that of the caterpillar).

There are also other signs that Darwin believes that God (if He exists at all) must fit the rationalist model. For example, he says of believers in special creation: “Do they really believe that at innumerable periods in the earth’s history certain elemental atoms have been commanded suddenly to flash into living tissues? Do they believe that at each supposed act of creation one individual or many were produced? Were all the infinitely numerous kinds of animals and plants created as eggs or seed, or as full grown? and in the case of mammals, were they created bearing the false marks of nourishment from the mother’s womb?” Here it is plain that Darwin thinks of God’s action as mechanistic, in that God must act on creation from the outside. The sort of causation proposed by Plato & Aristotle, in which God as the Good determines the entire structure of reality, does not occur to him.

What lesson should we draw? Perhaps it is possible to restate Darwin’s argument in a way that does not depend on debatable theological premises. At a minimum, the case of Darwin shows that *science is not independent of philosophy*. On the contrary, philosophical assumptions can be found throughout science, especially when science deals with things that happened extremely long ago or far away. The more one learns of both of them, the more obvious this becomes.