
Charles Darwin
ON THE ORIGIN OF SPECIES
1859

*Charles Darwin (1809–1882) began developing his theory of evolution by natural selection during the late 1830s, two decades before publishing his most famous book, *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life* (1859). Darwin published when he did because Alfred Russel Wallace had recently formulated a similar theory, and Darwin understandably wanted to assert his claim to priority. Poor health prevented Darwin from making additional excursions after his storied voyages on the *Beagle* (1831–36), but he continued to elaborate his theory for the remainder of his life. The notion that biological species evolved over time was not an idea original to Darwin—natural philosophers had long pondered this possibility. Nevertheless, at the time that *Origin* was published, the predominant assumption across the western world was that the species owed their origin to divine acts of “special creation.” Darwin’s scientific thinking gradually led him towards agnosticism or skepticism (as distinct from positive atheism), however, and he came to believe that the species could be explained without recourse to divine intervention. Darwin attempted to shatter the doctrine of special creation by identifying a mechanism of biological evolution that he believed could explain the apparently designed qualities of the species.*

*Throughout his career, Darwin insisted that natural selection was the main (although not only) mechanism of biological evolution and that this materialistic process was sufficient to explain even the most complex forms of life, including human beings. (He made an extended argument in *The Descent of Man*, published in 1871, that human beings had evolved from “ape-like progenitors.”) Darwin and his contemporaries were unable to observe evolution or natural selection occurring. The ability of the theory to persuade scientists derived from the fact that it offered a compelling, naturalistic explanation of a large and expanding body of observable facts. Darwin also lacked an understanding of genetics and DNA, but his theory allowed him to accurately postulate some of the qualities of genetic transmission. Many Christians during the late-nineteenth century attacked Darwinism as implicitly atheistic; they correctly perceived that the theory, if accepted, could allow one to dispense with the necessity of a divine creator of life. Many other Christians, however, attempted to assimilate the theory into a Christian framework by leaving room for providential intervention in the evolutionary process. —D. Voelker*

Bibliography: Jonathan Howard, *Darwin: A Very Short Introduction* (New York: Oxford Univ. Press, 2001); Edward J. Larson, *Evolution* (New York: Modern Library, 2004); Ronald L. Numbers, *Darwinism Comes to America* (Cambridge: Harvard Univ. Press, 1998).

[From the Introduction]

[1] In considering the *Origin of Species*, it is quite conceivable that a naturalist, reflecting on the mutual affinities of organic beings, on their embryological relations, their geographical distribution, geological succession, and other such facts, might come to the conclusion that each species had not been independently created, but had descended, like varieties, from other species. Nevertheless, such a conclusion, even if well founded, would be unsatisfactory, until it could be shown how the innumerable species inhabiting this world have been modified, so as to acquire that perfection of structure and coadaptation which most justly excites our admiration. Naturalists continually refer to external conditions, such as climate, food, etc., as the only possible cause of variation. In one very limited sense, as we shall hereafter see, this may be true; but it is

preposterous to attribute to mere external conditions, the structure, for instance, of the woodpecker, with its feet, tail, beak, and tongue, so admirably adapted to catch insects under the bark of trees. In the case of the misseltoe, which draws its nourishment from certain trees, which has seeds that must be transported by certain birds, and which has flowers with separate sexes absolutely requiring the agency of certain insects to bring pollen from one flower to the other, it is equally preposterous to account for the structure of this parasite, with its relations to several distinct organic beings, by the effects of external conditions, or of habit, or of the volition of the plant itself.

[2] It is, therefore, of the highest importance to gain a clear insight into the means of modification and coadaptation. At the commencement of my observations it seemed to me probable that a careful study of domesticated animals and of cultivated plants would offer the best chance of making out this obscure problem. Nor have I been disappointed; in this and in all other perplexing cases I have invariably found that our knowledge, imperfect though it be, of variation under domestication, afforded the best and safest clue. I may venture to express my conviction of the high value of such studies, although they have been very commonly neglected by naturalists.

[3] From these considerations, I shall devote the first chapter of this Abstract to Variation under Domestication. We shall thus see that a large amount of hereditary modification is at least possible, and, what is equally or more important, we shall see how great is the power of man in accumulating by his Selection successive slight variations. I will then pass on to the variability of species in a state of nature; but I shall, unfortunately, be compelled to treat this subject far too briefly, as it can be treated properly only by giving long catalogues of facts. We shall, however, be enabled to discuss what circumstances are most favourable to variation. In the next chapter the Struggle for Existence amongst all organic beings throughout the world, which inevitably follows from their high geometrical powers of increase, will be treated of. This is the doctrine of Malthus, applied to the whole animal and vegetable kingdoms. As many more individuals of each species are born than can possibly survive; and as, consequently, there is a frequently recurring struggle for existence, it follows that any being, if it vary however slightly in any manner profitable to itself, under the complex and sometimes varying conditions of life, will have a better chance of surviving, and thus be NATURALLY SELECTED. From the strong principle of inheritance, any selected variety will tend to propagate its new and modified form.

[From the Conclusion]

[4] In the distant future I see open fields for far more important researches. Psychology will be based on a new foundation, that of the necessary acquirement of each mental power and capacity by gradation. Light will be thrown on the origin of man and his history.

[5] Authors of the highest eminence seem to be fully satisfied with the view that each species has been independently created. To my mind it accords better with what we know of the laws impressed on matter by the Creator, that the production and extinction of the past and present inhabitants of the world should have been due to secondary causes, like those determining the birth and death of the individual. When I view all beings not as special creations, but as the lineal descendants of some few beings which lived long before the first bed of the Silurian system was

deposited, they seem to me to become ennobled. Judging from the past, we may safely infer that not one living species will transmit its unaltered likeness to a distant futurity. And of the species now living very few will transmit progeny of any kind to a far distant futurity; for the manner in which all organic beings are grouped, shows that the greater number of species of each genus, and all the species of many genera, have left no descendants, but have become utterly extinct. We can so far take a prophetic glance into futurity as to foretel that it will be the common and widely-spread species, belonging to the larger and dominant groups, which will ultimately prevail and procreate new and dominant species. As all the living forms of life are the lineal descendants of those which lived long before the Silurian epoch, we may feel certain that the ordinary succession by generation has never once been broken, and that no cataclysm has desolated the whole world. Hence we may look with some confidence to a secure future of equally inappreciable length. And as natural selection works solely by and for the good of each being, all corporeal and mental endowments will tend to progress towards perfection.

[6] It is interesting to contemplate an entangled bank, clothed with many plants of many kinds, with birds singing on the bushes, with various insects flitting about, and with worms crawling through the damp earth, and to reflect that these elaborately constructed forms, so different from each other, and dependent on each other in so complex a manner, have all been produced by laws acting around us. These laws, taken in the largest sense, being Growth with Reproduction; Inheritance which is almost implied by reproduction; Variability from the indirect and direct action of the external conditions of life, and from use and disuse; a Ratio of Increase so high as to lead to a Struggle for Life, and as a consequence to Natural Selection, entailing Divergence of Character and the Extinction of less-improved forms. Thus, from the war of nature, from famine and death, the most exalted object which we are capable of conceiving, namely, the production of the higher animals, directly follows. There is grandeur in this view of life, with its several powers, having been originally breathed into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved.

Discussion Questions:

1. What conditions, according to Darwin, made natural selection possible? How was natural selection supposed to operate?
2. What were the main strengths of Darwin's theory? Weaknesses?
3. How did Darwin leave room, in this text, for a theistic interpretation of evolution?
4. In what ways might Darwin's theory be seen as a threat to Christian beliefs?

SOURCE: Charles Darwin, *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life* (London, 1859).



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