Did Darwin plagiarize his evolution theory?

Jerry Bergman

Some historians believe that all of the major contributions with which Darwin is credited in regard to evolution theory, including natural selection, actually were plagiarized from other scientists. Many, if not most, of Darwin's major ideas are found in earlier works, especially those by his grandfather Erasmus Darwin. Charles Darwin rarely (if ever) gave due credit to the many persons from whom he liberally 'borrowed'. This review looks at the evidence for this position, concluding that much evidence exists to support this controversial view.

A common (but erroneous) conclusion is that Charles Darwin conceived modern biological evolution, including natural selection.[1] An example of statements commonly found in the scientific literature indicating this would be the comment by Michael Fitch: 'Not until Darwin, did anyone draw the same conclusion … except Alfred R. Wallace. … But Darwin undoubtedly preceded him in the conception of the theory' of evolution by natural selection.[2] A study of the works of pre-Darwinian biologists shows that, in contrast to this common assumption, Darwin was not the first modern biologist to develop the idea of organic evolution by natural selection.[3,4]

Furthermore, most (if not all) of the major ideas credited to Darwin actually were discussed in print by others before him. De Vries noted that some critics have even concluded that Darwin did not make *any* major new contributions to the theory of evolution by natural selection.[5] A study of the history of evolution shows that Darwin 'borrowed' all of his major ideas—some feel plagiarized would be a more accurate word—without giving due credit to these people. A few examples are discussed below.

The pre-Darwin modern theories of biological evolution

The modern theory of biological evolution probably was first developed by Charles De Secondat Montesquieu (1689–1755), who concluded that 'in the beginning there were very few' kinds of species, and the number has 'multiplied since' by natural means.[6] Another important evolutionist was Benoit de Maillet (1656–1738), whose book on evolution was posthumously published in 1748. In this book de Maillet suggested that fish were the precursors of birds, mammals, and men.[7] Yet another pre-Darwin scientist was Pierre-Louis Maupertuis (1698–1759) who in 1751 concluded in his book that new species may result from the fortuitous recombining of different parts of living animals.

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Erasmus Darwin (1731–1802)

At about this same time the French encyclopedist, Denis Diderot (1713–1784), taught that all animals evolved from one primeval organism. This prototype organism was fashioned into all those types of animals alive today via natural selection. George Louis Buffon (1707–1788) even expounded the idea at length that 'the ape and man had a common ancestry' and, further, that all animals had a common ancestor.[8] Macrone concluded that, although Darwin put evolution on a firmer scientific basis

> ' … he was hardly the first to propose it. A century before Darwin the French naturalist Georges Buffon wrote extensively on the resemblance among various species of birds and quadrupeds. Noting such similarities and also the prevalence in nature of seemingly useless anatomical features (such as toes on a pig), Buffon voiced doubts that every single species had been uniquely formed by God on the fifth and sixth days of creation. Buffon suggested in guarded language at least a limited sort of evolution that would account for variances among similar species and for natural anomalies.'[9]

De Vries noted that

> 'Evolution, meaning the origin of new species by variation from ancestor species, as an explanation for the state of the living world, had been proclaimed before Darwin by several biologists/thinkers, including the poet Johann Wolfgang Goethe, in 1795. Jean-Baptiste de Lamarck in 1809, Darwin's grandfather, the ebullient physician-naturalist-poet-philosopher Erasmus Darwin, and in Darwin's time anonymously by Robert Chambers in 1844.'[10]

Erasmus Darwin

One of the most important pre-Darwinists was Charles Darwin's own grandfather, Erasmus Darwin (1731–1802). He discussed his ideas at length in a two-volume work,

Zoonomia, published in 1794. This work was no obscure volume, but sold well, and was even translated into German, French, and Italian. Darlington argued that Erasmus Darwin 'originated almost every important idea that has since appeared in evolutionary theory', including natural selection.[11] While still a young man, Charles travelled to Edinburgh where his grandfather had many admirers.[12] While there, Robert Grant explained to Charles Darwin at length Erasmus' ideas on 'transmutation', as evolution was called then. Darwin never once openly admitted that his grandfather had a major influence on his central ideas.

Robert Chambers (1803–1871)

Some scholars even assert that Erasmus Darwin's view was more well developed than Charles Darwin's. Desmond King-Hele made an excellent case for the view that Charles Darwin's theory, even 'in its mature form in the later editions of the *Origin of Species*, is, in some important respects, less correct than that of Erasmus'.[13] Both writers stressed that evolution occurred by the accumulation of small, fortuitous changes that were selected by natural selection. Erasmus wrote that

> ' … in the great length of time since the earth began to exist, perhaps millions of ages before the beginning of the history of mankind … all warm-blooded animals have arisen from one living filament, which THE GREAT FIRST CAUSE endued with animality, with the power of acquiring new parts, attended with new propensities, directed by irritations, sensations, volitions, and associations; and thus possessing the faculty of continuing to improve by its own inherent activity, and of delivering down those improvements by generation to its posterity …' [spelling and punctuation modernized by author, emphasis in original.][14]

Large sections in many of Charles Darwin's books closely parallel Erasmus' writings.[15] King-Hele even claimed that the similarity between their works was so close that Darwin's grandfather 'had it all charted in advance for him'.[16] Yet 'Charles persistently fails to note the similarity … an omission which sometimes leaves him open to criticism' of plagiarizing. It is not difficult to conclude that Darwin's plagiarizing was on a large scale because even the terminology and wording is remarkably similar to his grandfather's wording.[17]

Furthermore, in some ways the conclusions of Erasmus Darwin were more advanced than those of Charles Darwin. For example, Charles evidently accepted Lamarckian evolution to a greater extent than did Erasmus, a conclusion that proved to be a major blunder for him.[18] In explaining the evolution of the giraffe's long neck, Darwin 'accepted the validity of evolution by use and disuse' although in this case he used natural selection as the major explanation of giraffe neck evolution.[19] And last, for both Darwins, 'the theory of Evolution was no mere scientific hypothesis but the very basis of life'.[20]

Robert Chambers

Another important pre-Darwinian thinker was Robert Chambers (1802–1871). His book *Vestiges of the Natural History of Creation* was first published in 1844.[21–23] In a summary of this work, Crookshank concluded that Chambers believed that the extant varieties of humans were a product of evolutionary advances and regressions. *Vestiges* not only advanced an evolutionary hypothesis, but argued that the natural world 'could best be understood by appeal to natural law rather than by flight to an intervening deity'.[24]

Without Chambers' book, Darwin admitted that he might never have written *The Origin of Species*.[25] Millhauser claimed that Chambers' work was critically important in the Darwinian revolution for other reasons. One reason was that Chambers' popularizing of his evolution theory in *Vestiges* helped prepare the way for Darwin. Middle-class consumers 'took up the book with the same enthusiasm they felt for the latest novels …'.[26] *Vestiges* went through four editions in only six months, and 10 editions only a decade later. It is still in print even today.[27]

Many radical reformers were especially enthusiastic about the book but, ironically, scientists 'quite generally dismissed its shoddy zoology and botany'.[26] Nonetheless, *Vestiges* was read or discussed by most all segments of British society.[28] Equally important was the fact that Robert Chambers' works were the stimulus for Thomas Henry Huxley, who became 'Darwin's Bulldog' and one of the most active and important of all of Darwin's disciples.[29]

Patrick Matthew

Yet another naturalist who discussed major aspects of evolution, specifically natural selection, long before Darwin was Patrick Matthew, whose priority was later acknowledged both by Charles Darwin and Edward Blyth.[30,31] Matthew actually

> ' … anticipated Darwin's main conclusions by twenty-eight years, yet he thought them so little important that he published them as an appendix to his book … and did not feel the need to give substance to them by continuous work. Darwin's incessant application, on the other hand, makes one think that he had found in evolution and its related concepts, not merely a scientific theory about the world, but a vocation ... .'[32]

Gould notes that: 'Matthew, still alive and vigorously kicking when Darwin published the *Origin*, wrote to express his frustration at Darwin's non-citation'.[33] In response to Matthew's evidently valid concern Darwin only 'offered some diplomatic palliation in the historical introduction added to later editions of the *Origin*'. Darwin also responded to Matthew's ire in the *Gardener's Chronicle* for April 21 1860 as follows: 'I freely acknowledge that Mr. Matthew has anticipated by many years the explanation which I have offered of the origin of species, under the name of natural selection …'.[34]

This statement indicates Darwin's guilt. Nonetheless, Gould tries to justify Darwin with the excuse that Darwin was not aware of Matthew's views on natural selection because they only appeared in the appendix to Matthew's book on timber and arboriculture. This could well be, but does not justify the slight Matthew was given ever since. His priority should be acknowledged today but instead he is totally ignored.

Patrick Matthew (1790–1874)

Edward Blyth

Loren Eiseley spent decades trying to trace the origins of the ideas commonly credited to Darwin. He summarized his conclusions in a 1979 book titled *Darwin and the Mysterious Mr. X*. Eiseley reached the conclusion that Darwin 'borrowed' heavily from the works of others, and never publicly acknowledged many of these persons. According to Eiseley, one of these persons, English naturalist Edward Blyth (1810–1873), originated many of the ideas for which Darwin was given credit, and less-charitable evaluators may be inclined to label Darwin's many unacknowledged borrowing infractions as plagiarizing:

> 'No less a scientific giant than Charles Darwin has been accused of failing to acknowledge his intellectual debts to researchers who preceded him. Loren Eiseley, professor of anthropology and history of science at the University of Pennsylvania until his death in 1977, came across the work of Edward Blyth, a British zoologist and contemporary of Darwin. Eiseley argues that Blyth wrote on natural selection and species evolution in two separate papers published in 1835 and 1837, years before Darwin's *Origin of Species* was published in 1859. Eiseley details similarities in phrasing, the use of rare words, and the choice of examples between Blyth's and Darwin's work. While Darwin quotes Blyth on a number of points, he doesn't reference Blyth's papers that directly discussed natural selection.'[35]

Even Darwin's book, *The Descent of Man* (1871), Eiseley argues, was largely a repeat of the ideas of others such as Carl Vogt's 1864 book *Lectures on Man*. Eiseley states that Darwin's ideas on human evolution in this book were 'scarcely new' and 'could not have been new since the time of the *Origin* … . Nevertheless, the world wanted to hear what the author of the *Origin* had to say on the evolution of man'.[36] Although the fact that many naturalists preceded Darwin is now widely recognized, some die-hard defenders of Darwin—such as the late Stephen J. Gould—have tried, unsuccessfully in this reviewer's opinion, to justify (or even deny) Darwin's lack of candour in acknowledging the origin of 'his' ideas.

Gould[31] claims that Darwin was influenced by many people, and could have developed his ideas tangentially (as evidently happened with Wallace). Although Gould[37] claims that 'all good biologists' discussed natural selection 'in the generations before Darwin' he argues that the charges of plagiarism are not entirely true because certain aspects of Darwin's theory were unique to him. This may well be, but a cloud of suspicion still hangs over Darwin. The very close similarity of Darwin's ideas to many of his forerunners—and even the wording Darwin used—argues that 'suspicion' is a very charitable interpretation of the situation. It is true that Darwin's and Blyth's ideas did differ in certain minor details, but, in this reviewer's opinion, Blyth's theory of natural selection was much closer to the findings of empirical research, both then and today, than was Darwin's. Specifically, Darwin saw natural selection as the creative force in evolution, a 'positive force for evolutionary change', whereas Blyth saw it more as a negative force that eliminated species.

Darwin's view has been carefully refuted by others and will not be reviewed here. Suffice is it to say that natural selection can only eliminate traits by eliminating those organisms with them and opening up new ecological niches. It cannot create new traits. This fact was recognized even in Darwin's day. For example, Richard Owen wrote much about this concern. For example, in one letter Owen used

> ' … the same analogy to restate figuratively the basic objections he had expressed when Darwin's *Origin of Species* was first published in 1859: that although natural selection is a valid mechanism to explain species diversification through time, *it did not answer the more basic question of the origin of the inheritable individual differences* subsequently "naturally selected" for survival in a surrounding and changing environment. Without an answer to the problem of inherited variations, Owen believed that the origins of species were not fully understood. Darwin himself confessed: "Our

ignorance of the laws of variation is profound" [emphasis mine].'[38]

Others also charged Darwin with plagiarism

Although some feel that it is inappropriate to judge Darwin by today's ideas about plagiarism, accusations of plagiarism were first made by Darwin's peers only a few years after Darwin published his classic work *Origin of Species*:

> 'Eiseley is not the only critic of Darwin's acknowledgement practices. He was accused by a contemporary, the acerbic man of letters Samuel Butler, of passing over in silence those who had developed similar ideas. Indeed, when Darwin's *On the Origin of Species* first appeared in 1859, he made little mention of predecessors.'[39]

Edward Blyth (1810–1873)

When essayist and novelist Samuel Butler (1835–1902) 'accused Darwin of slighting the evolutionary speculations of Buffon, Lamarck, and his own grandfather, Erasmus', Gould reported that Darwin reacted to these accusations with 'silence'.[40] Evidently aware that these charges may have had some merit, in the third edition of his *Origin* book, Darwin gave a few more details about the sources of his ideas. Nonetheless, 'Under continued attack, he added to the historical sketch in three subsequent editions'[40] of the *Origin*. This concession, though, was

> ' … still not enough to satisfy all his critics. In 1879, Butler published a book entitled *Evolution Old and New* in which he accused Darwin of slighting the evolutionary speculations of Buffon, Lamarck, and Darwin's own grandfather Erasmus. Remarked Darwin's son Francis: The affair gave my father much pain … .'[41]

One can certainly understand why the affair gave Darwin 'much pain'. Others have concluded that Darwin's plagiarism went well beyond copying sentences in books or even borrowing ideas without giving credit.

Alfred Russel Wallace

Even Darwin's commonly alleged major contribution to evolution, natural selection, had been developed earlier by others including William Charles Wells in 1813, and later Alfred Russel Wallace (1823–1913). In 1858, Wallace sent Darwin a copy of his paper describing his independently developed theory of evolution by natural selection. Although Leslie concluded that 'Darwin conspired to rob Wallace of credit for natural selection',[42] others argue that Darwin was backed into a corner and was left with no choice but to co-author his first paper on natural selection with Wallace. Stent concluded that it was not Darwin's sense of fair play that required the simultaneous publication with Wallace, but rather Darwin's fear of getting scooped.[43] Brackman claims that Darwin's putative plagiarizing from Wallace was 'one of the greatest wrongs in the history of science'. He adds that 'Darwin and two eminent scientific friends conspired to secure priority and credit' for the theory of evolution, and specifically the mechanism of evolution, natural selection, for Charles Darwin.[44] Zoologist Williams uses even stronger words, arguing that Brackman demonstrated that 'Darwin stole (not too harsh a word) the theory from Wallace' [parenthetical comment his].[45]

Evidence for this includes similarities in phrasing, the choice of specific examples to support the theory and the use of certain uncommonly used words. Broad and Wade bring out that even contemporaries of Darwin such as Samuel Butler criticized Darwin 'passing over in silence those who had developed similar ideas' before he did.

Kenyon even concludes that the famous so-called joint paper by Darwin and Wallace was in fact presented without Wallace's prior knowledge![46]

Regardless of whether Darwin appropriated some of Wallace's ideas, Darwin still managed to receive most all of the credit for the theory. Wallace is largely unknown today except among a small group of Darwinian scholars. Brooks relates that his interest in Wallace was aroused when he was preparing to teach a

> ' … course on evolution organized around the study of original scientific contributions on this subject. Each year began with a reading of Wallace's 1855 "law" paper, the joint Darwin-Wallace papers, and Darwin's *On the Origin of Species*. Over several annual cycles the similarities between the concepts, *even the wording*, in Wallace's papers and several chapters, but especially chapter IV, in Darwin's 1859 book had become increasingly apparent and disturbing. Were these really coincidences of two totally independent conceptions? Or did Darwin somehow profit from Wallace's papers and manuscript?—a possibility to which Darwin gave no recognition, not even a hint. A nagging doubt remained; there were too many similarities … but, as noted in the preceding chapter, there is no mention of Wallace's work anywhere in chapter IV' [emphasis mine].[47]

After his extensive study of Wallace and Darwin,

Brooks concluded that 'Wallace's ideas emerged, without any attribution, as the core of Chapter IV of the *Origin of Species*, a chapter which Darwin himself cited as central to his work'.[48]

Rhawn is even more direct about Darwin's plagiarism, and concludes that the reason for Darwin's unethical behaviour was fame.

> 'As fame repeatedly escaped him, Darwin became increasingly withdrawn and depressed. He dabbled in this area and that, and then spent 15 years devoted to the study of barnacles, about which he wrote four short papers. And then, on June 8, 1858, Darwin received a letter from Alfred Russel Wallace, accompanied by a 12 page summary of Wallace's ideas on evolution, i.e. natural selection. Wallace was a renowned naturalist and had published a number of papers on evolution which Darwin had read and expressed interest in. From an island near Borneo Wallace had forwarded his monograph to Darwin. The paper was utterly brilliant! Darwin then claimed to have recently arrived at identical conclusions, and thus claimed Wallace's theory as his own.'[49]

Rhawn also concludes that as a result of this paper:

> 'Darwin immediately abandoned the study of barnacles and began feverishly working on a book, a synthesis of the words of Blyth, Wells, Pritchard, Lawrence, Naudin, and Buffon: *On the Origin of Species by Means of Natural Selection* which he published in November of 1859, almost 18 months after receiving the paper by Wallace.'[49]

According to Rhawn, Darwin relied heavily on the paper by Wallace in producing his work, and speculates that Darwin's motivation was the same as is often true today among scientists:

> 'As Darwin well knew, this "synthesis" and the theory of "natural selection" would garner him world fame. Darwin, his well connected friends in the scientific community, and his acolytes had gone to extraordinary lengths to rewrite history and to spin myths regarding Darwin's' utterly insignificant observations when as a youth he sailed on the "Beagle"—observations which were little different from numerous naturalists writing and publishing at the time.'[49]

Clearly, there remain many unsolved issues surrounding Darwin's most famous work that need to be resolved.

Summary

It is widely recognized that all of the major ideas on biological evolution that Darwin discussed predated his writings. As is noted by Kitcher:

> ' … creationists propounded a "creation model" of the origins of life on earth. Their story was based on a literal understanding of the book of Genesis. … The trouble with this proposal is that it was abandoned, for excellent reasons, by naturalists, virtually all of them extremely devout, *decades* before Charles Darwin wrote *The Origin of Species'* [emphasis mine].[50]

Although Charles Darwin was highly successful in popularizing the idea of organic evolution by natural selection, especially among the scientific community, he was not the originator of major parts of the theory as is commonly supposed. Nor was Darwin the originator of even those aspects of evolution for which he most often is given credit today, including natural selection and sexual selection. Yet, he implied that these and other ideas were his own creation. In a study of Darwin, Gould concluded that:

> 'Darwin clearly loved his distinctive theory of natural selection—the powerful idea that he often identified in letters as his dear "child". But, like any good parent, he understood limits and imposed discipline. He knew that the complex and comprehensive phenomena of evolution could not be fully rendered by any single cause, even one so ubiquitous and powerful as his own brainchild.'[51]

Good evidence now exists to show that Darwin 'borrowed'—and in some cases plagiarized—all or most of his 'dear child' from other researchers, especially his grandfather. They were not 'his own brainchild', nor his child, but that of others which he appropriated, evidently often without giving them proper credit.

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Non-conformist life

'All living things are aberrations in the sense that they do not conform to the second law of thermodynamics as it applies to isolated systems. They are not in equilibrium with their surroundings in any ordinary sense, for then they would be dead and decomposed. They are sustained in their exceptional condition only because they are intermediates in the conversion of flows of energy from one form into another. Plant cells absorb sunlight, producing low-grade heat and atmospheric gases in return. Animal cells take in food that is ultimately derived from plants and excrete chemicals of lesser complexity. Only the flux of energy from the sun makes life possible.'

John Maddox
What Remains to be Discovered
The Free Press
New York, p. 193, 1998.