

Darwin, Wallace, and the *Descent of Man*

JOEL S. SCHWARTZ

*Department of Biology
College of Staten Island of the
City University of New York*

DARWIN'S RELUCTANCE TO WRITE ON MAN

Writing in his autobiography in 1876, between May and August, Charles Darwin looked back on his illustrious career and recounted his early views on the origin of man:

As soon as I had become, in the year 1837 or 1838, convinced that species were mutable productions, I could not avoid the belief that man must come under the same law. Accordingly I collected notes on the subject for my own satisfaction, and not for a long time with any intention of publishing. Although in the *Origin of Species*, the derivation of any particular species is never discussed, yet I thought it best, in order that no honourable man should accuse me of concealing my views, to add that by the work in question "light would be thrown on the origin of man and his history." It would have been useless and injurious to the success of the book to have paraded without giving any evidence my conviction with respect to his origin.¹

In 1838 Darwin began his first notebook on man. Yet two years before the publication of the *Origin*, on 22 December 1857, he expressed to Alfred Russel Wallace his reluctance to write about human evolution: "You ask whether I shall discuss Man; I think I shall avoid the whole subject, as so surrounded with prejudices, though I fully admit that it is the highest and most interesting problem for the naturalist."²

Time had not dimmed the aging naturalist's memory when he was penning his autobiography, for he had little inclination to publish his ideas on the evolution of man. In fact, as a careful study of his

1. Charles Darwin, *The Autobiography of Charles Darwin*, ed. Nora Barlow (New York: Norton, 1958), pp. 130–131.

2. Alfred R. Wallace, *Alfred Russel Wallace: Letters and Reminiscences*, ed. James Marchant (New York: Harper and Brothers, 1916), p. 110.

letters shows, he may never have wanted to undertake the task. His letters to Wallace after the publication of the *Origin* often mention his poor health and lack of vigor, particularly in reference to writing on man. On the other hand, he urged Wallace to write on man and on 28 May 1864 graciously offered all his notes and material on the subject: "I have collected a few notes on Man, but I do not suppose I shall ever use them. Do you intend to follow out your views, and if so would you like at some future time to have my few references and notes?"³

WALLACE VS. DARWIN ON MAN

Wallace delivered a paper on "The Origin of Human Races and the Antiquity of Man deduced from the Theory of Natural Selection" before the newly formed Anthropological Society of London on 1 March 1864. On 10 May Wallace wrote to Darwin, "I send you now my little contribution to the *theory* of the origin of man. I hope you will be able to agree with me. If you are able, I shall be glad to have your criticisms."⁴ Rather than accepting Wallace's invitation to criticize this paper, Darwin preferred to discuss his reaction to the abstract of Wallace's paper on butterflies, "On the Phenomena of Variation and Geographical Distribution, as illustrated by the Papilionidae of the Malayan Region," printed in the 16 April 1864 issue of the *Reader*. In his previously cited letter of 28 May Darwin told Wallace:

You must forgive me for not having sooner thanked you for your paper on Man received on the 11th. But first let me say that I have hardly ever in my life been more struck by any paper than that on variation, etc., etc., in the *Reader*. I feel sure that such papers will do more for the spreading of our views on the modification of species than any separate treatises on the single subject itself.⁵

3. *Ibid.*, p. 128. Doubting the sincerity of Darwin's offer, Kottler believes that "Darwin was concerned with another priority dispute with Wallace." (Malcolm Kottler, "Wallace, The Origin of Man and Spiritualism," *Isis*, 65 [1974], 145–192; quotation on p. 149.) But Kottler offers no evidence to support his disbelief in Darwin's sincerity. The priority in proposing the theory of natural selection was never disputed by either Darwin or Wallace, the entire matter being settled amicably to everyone's satisfaction.

4. Wallace, *Alfred Russel Wallace*, p. 126.

5. *Ibid.*, p. 127.

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Darwin, evidently more impressed by Wallace's abstract in the *Reader* than by the paper Wallace had delivered before the Anthropological Society, was circumspect in his remarks about the paper on man.⁶ As he wrote to Wallace in his 28 May letter:

But now for your Man paper, about which I should like to write more than I can. The great leading idea is quite new to me, viz. that during late ages the mind will have been modified more than the body; yet I had got as far as to see with you that the struggle between the races of man depended entirely on intellectual and moral qualities.⁷

Wallace's 1864 paper on man was an explanation of why, after man's superior intellect and moral nature developed, natural selection could not affect his anatomic form. There would be little change, he hypothesized, in the structure of man once his intellect had reached a crucial level sufficient to prevent natural selection. Wallace had written this paper to help resolve the issue of how the races of man had evolved. At the time there were two opposing views. One position, monogenesis, held that the races of man are varieties of a single species. The other view, polygenesis, regarded each race as a separate species. The polygenist's position was strengthened by observations suggesting that the races of man differed as much in ancient civilizations as they did in 1864. To support the monogenist view, Wallace ingeniously argued that the various races of man became differentiated at an extremely early time and since then had remained relatively fixed. He suggested that before man had completely evolved as man, the various races had already been formed. Then man's intellectual and moral capacity as well as his cultural development were able to resist any further physical change save the shape and size of the cranium. Wallace wrote:

Here, then, we see the true grandeur and dignity of man. On this view of his special attributes, we may admit that even those who claim for him a position as an order, a class, or a sub-kingdom by himself, have some reason on their side. He is, indeed, a being apart,

6. John Green, *The Death of Adam, Evolution and Its Impact on Western Thought* (Ames: Iowa State University Press, 1959, p. 320), states that by this date "Darwin was pleased with Huxley's views on man, but was disturbed by those of Lyell and Wallace."

7. Wallace, *Alfred Russel Wallace*, p. 127.

since he is not influenced by the great laws which irresistibly modify all other organic beings. Nay more; this victory which he has gained for himself gives him a directing influence over other existences. Man has not only escaped "natural selection" himself, but he actually is able to take away some of that power from nature which, before his appearance, she universally exercised. We can anticipate the time when the earth will produce only cultivated plants and domestic animals; when man's selection shall have supplanted "natural selection"; and when the ocean will be the only domain in which that power can be exerted, which for countless cycles of ages ruled supreme over all the earth.⁸

Wallace's paper before the Anthropological Society had a mixed reception. The discussion following his presentation showed considerable diversity of opinion among the members, particularly on the subject of natural selection. Many were surprised by the new ground that Wallace had staked out. The president of the society, James Hunt, remarked:

We were told of "natural selection" by virtue of external causes; now we are told of the inherent power; but this is surely wrong . . . the principle of selection is based on external circumstances. I should therefore expect Mr. Wallace, for the benefit of his argument to withdraw the expression "inherent power."⁹ . . . Then we are told that man can take away the power of natural selection. Well, if man can do that, what a powerless thing natural selection must be.¹⁰

8. Alfred R. Wallace, "The Origin of Human Races and the Antiquity of Man deduced from the theory of Natural Selection," *J. Anthropol. Soc.*, 2 (1864), clxviii.

9. Wallace refused to comply with Hunt's request: "As to the term 'inherent,' I do not mean to withdraw it. I mean to maintain it as a very proper expression; and the answer I gave to that last question about a provident race, will almost answer for this, — that peculiarities produced gradually by natural selection, or any other cause, become inherent." *Ibid.*, p. clxxxvi.

10. *Ibid.*, p. clxxx. J. W. Burrow, *Evolution and Society: A Study in Victorian Social Theory* (Cambridge: Cambridge University Press, 1966), p. 131, says: "The Anthropological Society was a by-product of the scientific excitement of the early 'sixties. . . The findings of prehistoric archaeology, the proofs of the immense antiquity of man, were pretty generally accepted . . . but not so Darwin's theory, or even the theory of evolution itself. At least until Wallace joined, Darwin was mentioned seldom and patronizingly, as another evolutionist speculator. Huxley's account of man's place in nature was strongly disputed, and the Neanderthal skull held by Hunt to be that of an idiot."

Another member of the society, one Luke Burke, indicated that Wallace's theory "assumes that one part of the organism can gradually be modified without the requisite correlations in the others. It divorces our power of judging of the mind from the body."¹¹ Thus, when Wallace's paper was delivered, the listeners perceived that he had weakened the case for natural selection and had begun to put some distance between his own views and those of Darwin. Wallace's approach to the directed evolution of man by the adoption of such ideas as man's "inherent power" must have troubled Darwin. Since Darwin remained quite guarded on the subject, it is extremely difficult to determine from the written record exactly what his reaction to Wallace's 1864 paper was.

Wallace, however, welcomed Darwin's brief comments about the paper on man, as he indicated in his letter of 29 May 1864:

I am glad, however, that you have made a few critical observations, and am only sorry you were not well enough to make more, as that enables me to say a few words in explanation. . . In my paper on Man I aim solely at showing that brutes are modified in a *great variety* of ways by Natural Selection, but that in *none of these particular* ways can man be modified, because of the superiority of his intellect.¹²

Wallace did not accept Darwin's offer of his notes on man. The letters exchanged between the two men during the rest of the 1860s were devoted mainly to their views on sexual selection and the differences they had on this issue. Their disagreements regarding the evolution of man were not directly mentioned. The subject of sexual selection, however, was part of the larger problem of human evolution. In his 28 May letter to Wallace, Darwin stated that "a sort of sexual selection has been the most powerful means of changing the races of man."¹³ Finally, in a letter to Wallace dated 26 February 1867, Darwin indicated that he intended to write an essay on man and planned to tie it in with his work on sexual selection. He told Wallace, "The reason of my being so much interested just at present about sexual selection is that I have almost resolved to publish a little essay on the Origin of Mankind, and I still strongly think (though I failed to

11. Wallace, "The Origin of Human Races," p. clxx.

12. Wallace, *Alfred Russel Wallace*, pp. 128–129. Emphasis in original.

13. *Ibid.*

convince you, and this to me is the heaviest blow possible) that sexual selection has been the main agent in forming the races of man.”¹⁴ In a subsequent letter (dated March 1867) he further explained:

I can see that sexual selection is growing into quite a large subject, which I shall introduce into essay on Man, supposing that I ever publish it.

I had intended giving a chapter on Man, inasmuch as many call him (not *quite* truly) an eminently *domesticated* animal; but I found the subject too large for a chapter. Nor shall I be capable of treating the subject well, and my sole reason for taking it up is, that I am pretty well convinced that sexual selection has played an important part in the formation of races, and sexual selection has always been a subject which has interested me much.¹⁵

A year later Darwin again referred to his determination to tackle the question of man’s evolution; only his failing health seemed to be an impediment. On 6 July 1868 he confided to Alphonse de Candolle:

You ask me when I shall publish on the “Variation of Species in a State of Nature” [as a continuation of his “Variation of Animals and Plants”]. I have the MS. for another volume almost ready during several years, but I was so much fatigued by my last book that I determined to amuse myself by publishing a short essay on the “Descent of Man.” I was partly led to do this by having been taunted that I concealed my views, but chiefly from the interest which I had long taken in the subject. Now this essay has branched out into some collateral subjects [including sexual selection], and I suppose will take me more than a year to complete.¹⁶

Darwin received additional motivation to publish his views on man in 1869, a year after he wrote to de Candolle. Wallace asked Darwin in a letter dated 20 January 1869, “Have you seen in the last number of the *Quarterly Journal of Science* the excellent remarks on *Fraser’s* article on Natural Selection failing as to Man? In one page it gets to the heart of the question, and I have written to the Editor to ask who

14. *Ibid.*, p. 148.

15. *Ibid.*, p. 150. Emphasis in original.

16. Charles Darwin, *The Life and Letters of Charles Darwin*, ed. Francis Darwin (London: John Murray, 1888), III, 100.

the author is.”¹⁷ Later that year Wallace reviewed the tenth edition of Charles Lyell’s *Principles of Geology* and the sixth edition of Lyell’s *Elements of Geology* for the *Quarterly Review*. In these two works, for the first time, Lyell supported evolution by natural selection unequivocally, and Wallace used the occasion to propound his own views on the evolution of man. He not only repeated his previous contention that natural selection does not affect the development of man’s physical characteristics, but he suggested that the brain of man, as well as the organs of speech, could not have evolved by natural selection. He commented, “The mental requirements of the lowest savages, such as the Australians or the Andaman islands are very little above those of many animals.”¹⁸ Darwin marked this passage in his own copy of the review with the word “no” followed by three lines so to emphasize his sharp disagreement with these remarks.¹⁹ Darwin annotated other important portions of Wallace’s review. He added four exclamation marks after the passage that read:

The higher moral faculties and those of pure intellect and refined emotion are useless to them [meaning savages], are rarely if ever manifested, and have no relation to their wants, desires, or well being. How, then, was an organ developed so far beyond the needs of its possessor? Natural selection could not have endowed the savage with a brain a little superior to that of an ape, whereas he actually possesses one but very little inferior to that of the average members of our learned societies.²⁰

On the margin of the page next to this passage, Darwin wrote the comment, “I think the same argument could be applied to every animal — what use of 5 toes to dog’s foot.” He added, “Boat building weapons — surely final and competition with other savages.”²¹

In a later section Wallace introduced an “Overruling Intelligence” to explain the development of man:

Let us fearlessly admit that the mind of man . . . is able to trace . . . the laws by means of which the organic no less than the inorganic

17. Wallace, *Alfred Russel Wallace*, p. 190.

18. Darwin papers, vol. 133, item (14): A. R. Wallace, criticism of “Sir C. Lyell on Geological Climate and the Origin of Species,” *Quart. Rev.*, 126 (1869), 359–394; quotation on pp. 391–392.

19. *Ibid.*

20. *Ibid.*

21. *Ibid.*

world has been developed. But let us not shut our eyes to the evidence that an Overruling Intelligence has watched over the action of those laws, so directing variations and so determining their accumulation, as finally to produce an organization sufficiently perfect to admit of, and even to aid in, the indefinite advancement of our mental and moral nature.²²

Next to this passage, in the margin of his copy, Darwin added the sardonic comment, "i.e. miracles."²³

After the publication of Wallace's review, Darwin could not overlook the large and irreconcilable gap that had developed between the two scientists on the issue of man. Darwin did not reproach Wallace. He scarcely referred to their differences in his letters. When he received his copy of the *Quarterly*, he wrote to Wallace on 27 March 1869, "I hope you have not murdered too completely your own and my child [natural selection]." ²⁴ After he read Wallace's review, he commented in his 14 April letter to Wallace:

I presume that your remarks on Man are those to which you alluded in your note. If you had not told me I should have thought that they had been added by some one else. As you expected, I differ grievously from you, and I am very sorry for it. I can see no necessity for calling in an additional and proximate cause in regard to Man. But the subject is too long for a letter. I have been particularly glad to read your discussion, because I am now writing and thinking much about Man.²⁵

Wallace tried to explain to Darwin the reasons for his much-modified analysis of the evolution of man and met with little success. On 18 April he wrote to Darwin:

I can quite comprehend your feelings with regard to my "unscientific" opinions as to Man, because a few years back I should myself have looked at them as equally wild and uncalled for. I shall look with extreme interest for what you are writing on Man, and shall give full weight to any explanations you can give of his probable origin. My opinions on the subject have been modified solely by the

22. *Ibid.*, p. 394.

23. *Ibid.*

24. Wallace, *Alfred Russel Wallace*, p. 197.

25. *Ibid.*, p. 199.

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consideration of a series of remarkable phenomena, physical and mental, which I have now had every opportunity of fully testing, and which demonstrate the existence of forces and influences not yet recognized by science.²⁶

Darwin said nothing further on the matter in his letters to Wallace but allowed *Descent of Man*, his long-awaited essay on man, to provide eloquent testimony to his own ideas.

Darwin wrote to Lyell on 4 May 1869 and again emphasized his dissatisfaction with the Wallace review:

What a good sketch of natural selection! but I was dreadfully disappointed about *Man*, it seems to be incredibly strange . . .; and had I not known to the contrary, would have sworn it had been inserted by some other hand. But I believe that you will not agree quite in all this.²⁷

Lyell, as Darwin feared, rather liked Wallace's directional approach to the evolution of man, and he told Darwin so in his letter of 5 May 1869:

I was therefore not opposed to his idea, that the Supreme Intelligence might possibly direct variation in a way analogous to that in which even the limited powers of man might guide it in selection, as in the case of the breeder and horticulturist. . . As I feel that progressive development or evolution cannot be entirely explained by natural selection, I rather hail Wallace's suggestion that there may be a Supreme Will and Power which may not abdicate its functions of interference, but may guide the forces and laws of nature.²⁸

Did Wallace serve as the stimulus for Darwin's *Descent of Man*, as he did for the *Origin*? There is no direct evidence supporting this idea, but the correspondence between Darwin and Wallace strongly suggests that Wallace's difference over the matter of human evolution may have served as the spur which made Darwin overcome his reluctance to discuss man. It has been argued that Lyell's initial inability

26. *Ibid.*, p. 200.

27. Darwin, *Life and Letters*, III, 117.

28. Charles Lyell, *Life, Letters and Journals of Sir Charles Lyell*, ed. Mrs. Lyell (London: John Murray, 1881), II, 442.

to accept Darwin's ideas on evolution might have been responsible for some of Darwin's action.²⁹ But Darwin confided in Lyell about his disappointment with Wallace and did not do so with Wallace about Lyell. Darwin also must have recognized that Lyell was much firmer in his support of natural selection in 1869 than he had been in 1864. Wallace was moving away from the Darwinian position in the period 1864 to 1869. His name was irrevocably linked with Darwin and natural selection, and his defection had to be, in Darwin's view, a serious blow.

THE DEVELOPMENT OF WALLACE'S VIEWS

How can one account for the dramatic turn in Wallace's conception of the efficacy of natural selection in the evolution of man? The roots of his shift seem to have been established quite early in his life. Wallace was the eighth of nine children born into a lower-middle-class family in early nineteenth-century Britain; he enjoyed few advantages and developed a vivid awareness of the inequality of his society. After receiving a brief formal education, Wallace in 1837 went to live with his brother John, near London. During his brief stay Wallace attended lectures at a working men's club called the "Hall of Science." The membership comprised followers of the utopian socialist Robert Owen,

29. Ruse claims that Darwin by 1869 "had lost patience with Lyell" and had little sympathy for Lyell's religious misgivings. But Ruse goes on to state that Darwin was "downright appalled at Wallace." (Michael Ruse, *The Darwinian Revolution* [Chicago: University of Chicago Press, 1979], p. 247.) Darwin was also somewhat displeased with Thomas Huxley during this period. Huxley, a steadfast champion of Darwin and his views, nevertheless wanted Darwin to provide direct evidence of transmutation of species. Hull states that "Darwin grew weary of telling people that he did not pretend to address direct evidence of one species changing into another. Among those who contributed most to Darwin's weariness was Huxley. Throughout their collaboration, Huxley steadfastly maintained that intersterility infallibly distinguished species and 'until selective breeding is definitely proved to give rise to varieties intersterile with one another, the logical foundation of the theory of natural selection is incomplete.' Darwin believed, on the other hand, that it was difficult 'to make a marked line of separation between fertile and infertile crosses.'" Darwin's "weariness" with Huxley is not nearly so significant as the serious breach that had occurred between Darwin and Wallace over the subject of man. Darwin's *Descent* cannot be regarded as a response to the reservations of Lyell or Huxley. Both men, despite these reservations, became with the passage of time in the 1860s stronger supporters of Darwin and his position. (David Hull, *Darwin and His Critics: The Reception of Darwin's Theory of Evolution by the Scientific Community* [Cambridge, Mass.: Harvard University Press, 1973], p. 49.)

and this early exposure to new and exciting social theories left an indelible impression on young Wallace. Later that year Wallace went to work for another brother, William, a surveyor and architect. He worked for this brother during the period 1837 to 1843, enjoying the opportunity to be outdoors a good deal of the time. From this pleasant experience he began to develop a love of nature and an appreciation for the land and its unspoiled beauty. Wallace also felt a strong sympathy for the tenant farmers, whose rent he had to collect as part of his job.

In 1844 Wallace went to teach school in Leicester. There he read George Combe on phrenological psychology and became interested in phrenology and mesmerism. He also read Herbert Spencer's first work, *Social Statics*, which was heavily based on phrenology. His own interest in this subject was connected with his skeptical attitude toward the traditional methods of inquiry into the human mind, just as his disenchantment with Victorian life and morality in England had led him to Owenite socialism. Phrenology had significant impact when he directed his attention to human evolution twenty years later, for it enabled him to separate man from the rest of the organic world.

While living in Leicester, Wallace met a young naturalist, Henry Walter Bates; through this association he received encouragement and direction for his developing interest in natural history. Wallace spent much of his spare time collecting plants and insects and frequently discussed his experiences in the field with Bates. In 1848 the two men journeyed to the Amazon region to study and to collect the many tropical specimens of this area. Unfortunately, in 1852 the ship carrying Wallace and the material he had collected caught fire and sank. He barely escaped and was able to salvage only his diary and some notes and sketches. He utilized these meager resources in publishing an account of his bizarre experience in the tropics.³⁰

Undaunted by this bad luck, Wallace in 1854 undertook another trip to the tropics. This time he traveled to the Malay Archipelago, where he spent eight years (from 1854 to 1862). He collected the flora and fauna of Java, Sumatra, the Moluccas, New Guinea, Aru, Timor, Borneo, and other small islands in the region. He began to pay more attention to the question of how species evolved, a problem that had intrigued him since his trip to the Amazon.³¹ In 1858 in

30. Alfred R. Wallace, *A Narrative of Travels on the Amazon and Rio Negro* (London: Reeve and Company, 1853).

31. McKinney says that Wallace was stimulated by reading Robert Chambers' *Vestiges of Creation* and became motivated to travel to the Amazon and investigate

Ternate, while recovering from a fever, Wallace recalled Malthus' *Essay on Population*. In a flash of inspiration remarkably similar to the effect the essay had on Darwin in 1838, Wallace discovered (as Darwin had before him) the principle by which species evolved, namely, natural selection. He sent a brief sketch of his ideas to Darwin and thereby prodded Darwin into publishing his own views on the subject. Wallace's paper was presented jointly with a brief contribution by Darwin before the Linnean Society on 1 July 1858. Wallace's paper unequivocally supported natural selection as the force responsible for speciation in all organisms. At this time he did not exclude man from the effects of natural selection, there was no mention of an "inherent power," nor was there any discussion of how man's intellect shielded him from physical change. In 1858 he wrote:

Those which are best adapted obtain a regular supply of food, and to defend themselves against the attacks of their enemies and the vicissitudes of the seasons, must necessarily obtain and preserve a superiority in population; while those species which from some defect of power or organization are the least capable of counteracting the vicissitudes of food, supply &c, must diminish in numbers, and, in extreme cases, become altogether extinct . . . and it is thus we account for the abundance or rarity of species.³²

Six years later, in 1864, Wallace's views on evolution had changed: natural selection had no effect upon man's physical characteristics, he reasoned, as it still had on all other living things. In the 1864 paper delivered to the Anthropological Society Wallace wrote:

But in man, as we now behold him, this is different. . . If a larger or more powerful beast is to be captured and devoured . . . it is only the strongest who can hold, — those with most powerful claws, and formidable canine teeth, that can struggle with and overcome

the species question. (H. Lewis McKinney, *Wallace and Natural Selection* [New Haven and London: Yale University Press, 1972], pp. 9–13.

32. Alfred R. Wallace, "On the Tendency of Varieties to Depart Indefinitely from the Original Type," *J. Proc. Linn. Soc. (Zool.)*, 3 (1859), 57. Reprinted in *Charles Darwin and Alfred Russel Wallace, Evolution by Natural Selection*, foreword by Sir Gavin de Beer (Cambridge: Cambridge University Press, 1958), pp. 268–279, and *The Darwin-Wallace Celebration Held on Thursday 1st July, 1908 by the Linnean Society of London* (London: Linnean Society, 1908), pp. 98–107.

such an animal. Natural selection immediately comes into play, and by its action these organs gradually become adapted to their new requirements. But man, under similar circumstances, does not require longer nails or teeth, greater bodily strength or swiftness. He makes sharper spears, or a better bow, or he constructs a running pitfall, or combines in a hunting party to circumvent his new prey. The capacities which enable him to do this are what he requires to be strengthened, and these will, therefore, be gradually modified by "natural selection," while the form and structure of his body will remain unchanged.³³

Wallace's belief in phrenology allowed him to discard natural selection as an influence on the human body when he wrote his paper on man in 1864. In it such expressions as faculties, propensities and feelings were employed in a phrenological style. For example, Wallace's use of the term "faculties" (which developed, according to him, when man's brain had become fairly complex and his physical form and structure ceased to be influenced by natural selection) was the same as that of the phrenologists, who assigned such "faculties" to man but not to animals. Thus, Wallace declared in 1864, "when the social and sympathetic feelings came into active operation, and the intellectual and moral faculties became fairly developed, man would cease to be influenced by 'natural selection' in his physical form and structure."³⁴ He concluded his 1864 paper with the observation that man's external form will remain unchanged, and "the passions and animal propensities will be restrained within those limits which most conduce to happiness."³⁵

The impact of Wallace's utopian socialist ideas on his scientific thought becomes evident in another section of this concluding paragraph. In this passage Wallace dealt with the future of mankind, and his approach was decidedly utopian:

While his external form will probably ever remain unchanged, except in the development of that perfect beauty which results from a healthy and well organized body, refined and ennobled by the highest intellectual faculties and sympathetic emotions, his mental constitution may continue to advance and improve till the world is

33. Wallace, "The Origin of Human Races," pp. clxii-clxiii.

34. Ibid.

35. Ibid., p. clxix.

again inhabited by a single homogeneous race, no individual of which will be inferior to the noblest specimens of existing humanity. Each one will then work out his own happiness in relation to that of his fellows; perfect freedom of action will be maintained, since the well balanced moral faculties will never permit any one to transgress on the equal freedom of others; restrictive laws will not be wanted, for each man will be guided by the best of laws; a thorough appreciation of the rights, and a perfect sympathy with the feelings, of all about him; compulsory-government will have died away as unnecessary (for every man will know how to govern himself), and will be replaced by voluntary associations for all beneficial public purposes.³⁶

In addition to Wallace's interest in socialism and phrenology, in 1865 he began to show an interest in spiritualism. This attraction has been attributed to the same factors that led him to socialism and phrenology, namely, a progressive social outlook and a rejection of traditional religion and science.³⁷ In an interview shortly before his death in 1913 Wallace described how he first became curious about spiritualism:

When I returned from abroad . . . I had read a good deal about Spiritualism, and, like most people, believed it to be a fraud and

36. Ibid.

37. Discussing the origins of Wallace's socialism, phrenology, and spiritualism, Turner regards them as components of a school of thought called "physical puritanism," popular with "amateurs who often tended toward political radicalism." Physical puritanism had as its goal "the healing, cleansing and restoration of the animal man." (Frank Miller Turner, *Between Science and Religion: The Reaction to Scientific Naturalism in Late Victorian England* [New Haven and London: Yale University Press, 1974], p. 80.) Young looked at the origins of phrenology and natural selection from an entirely different perspective. He maintained that both phrenology and natural selection relied on the "naturalistic method" of gathering evidence: "Logically it [natural selection] was in the same position as phrenology for most of the nineteenth century. It rested on naturalistic observations and a mass of anecdotes collected more or less systematically." Young has overstated his position in placing phrenology on an equal footing with natural selection. The standards of evidence were much higher for evolutionary work, as Young observed, and also the meager evidence based on nonscientific happenings in support of phrenology is certainly not comparable to the enormous amount of data carefully compiled in support of natural selection by Darwin and others in many areas of study, such as anatomy, paleontology, and geology. (Robert M. Young, *Mind, Brain and Adaptation in the Nineteenth Century: Cerebral Localization and Its Biological Context from Galt to Ferrier* [Oxford: Clarendon Press, 1970], pp. 44-45.)

a delusion. This was in 1862. At that time I met a Mrs. Marshall, who was a celebrated medium in London, and after attending a number of her meetings, and examining the whole question with an open mind and with all the scientific application I could bring to bear upon it, I came to the conclusion that Spiritualism was genuine. However, I did not allow myself to be carried away, but I waited for three years and undertook a most rigorous examination of the whole subject, and was then convinced of the evidence and genuineness of Spiritualism.³⁸

Wallace was receptive to spiritualism because it filled a religious void in his life. He belonged to no organized church and, prior to his conversion in 1865, probably considered himself an agnostic. Before this religious interest he approached spiritualism with a scientific attitude, weighing the evidence for and against it and eventually deciding that the evidence warranted it to be genuine. After 1865 his attitude changed: spiritualism was no longer a phenomenon that required investigation, it was his religion. This conversion had a significant effect on his scientific views. However, Wallace's initial departure from the Darwinian view of human evolution in 1864 cannot be attributed to his belief in spiritualism, which commenced in 1865. After 1865, however, Wallace's religious views were responsible for widening the gulf between Darwin and himself.

This is illustrated by a comparison of Wallace's 1864 paper with a later revision. His 1864 paper, presented before the Anthropological Society and printed in the society's *Journal* that same year, was revised when Wallace included it in an 1870 selection of his essays entitled *Contributions to the Theory of Natural Selection*.³⁹ Among other new concepts, the revision added Wallace's belief in an "Overruling Intelligence." This did not appear in the original paper, although he had there referred to "inherent power."⁴⁰ That inherent power, however, was purely natural, whereas the 1870 revision maintained:

There is undoubtedly an advanced – on the whole a steady and permanent one – both in the influence of public opinion of a high morality, and in the general desire for intellectual elevation; and as I cannot impute this in any way to the "survival of the fittest,"

38. W. B. Northrop, "Alfred Russel Wallace," *Outlook*, 105 (1913), 621.

39. Alfred R. Wallace, *Contributions to the Theory of Natural Selection* (London: Macmillan, 1870), pp. 303–331.

40. Wallace, "The Origin of Human Races," p. clxxxvi.

I am forced to conclude that it is due, to the inherent progressive power of those glorious qualities which raise us so immeasurably above our fellow animals, and at the same time afford us the surest proof that there are other and higher existences than ourselves, from whom these qualities may have been derived, and towards whom we may be ever tending.⁴¹

Therefore Wallace's belief in social equality and political reform conflicted with the ineluctable operations of natural law (including natural selection). It has been suggested that in the 1860s Wallace chose socialism, phrenology, and spiritualism over scientific naturalism.⁴² Yet there is no evidence to suggest that Wallace was able to resolve this conflict satisfactorily. Because of his Owenite socialist background, he could not satisfactorily reconcile his social beliefs with his scientific views. Spencer, a committed social Darwinist, disliked socialism and found no conflict between his belief in the unrestricted marketplace and his acceptance of evolution by means of natural selection. He expressed his laissez-faire economic and social views succinctly in a letter to Wallace on 6 July 1881:

The whole process [of civilization], with all its horrors and tyrannies, and slaveries, and wars, and abominations of all kinds, has been an inevitable one accompanying the survival and spread of the strongest, and the consolidation of small tribes into large societies; and among other things the lapse of land into private ownership has been, like the lapse of individuals into slavery, at one period of the process altogether indispensable.⁴³

Wallace, however, never rejected "scientific naturalism" completely.⁴⁴ Furthermore, this discordance did not induce in his mind the kind of

41. Wallace, *Contributions*, p. 331.

42. Young has suggested that "socialism and 19th century evolutionism were very uneasy bedfellows, and in the conflict between them Wallace chose socialism." (Robert M. Young, "Non-Scientific Factors in the Darwinian Debate," *Actes XII Congrès Inter. Hist. Sci.*, 8 [1968], 221–226; quotation on p. 224.)

43. Wallace, *Alfred Russel Wallace*, pp. 391–392. Peel states that "the social ideals of [Spencer's] *Social Statics* which had seemed so radical for 1848, came to seem old fashioned in the climate of the new liberalism [in the 1880s] . . . he [Spencer] attacked socialism as the 'New Toryism.'" J. D. Y. Peel, *Herbert Spencer: The Evolution of a Sociologist* (New York: Basic Books, 1971), p. 19.

44. Durant supports the view that Wallace never decided against scientific

creativity that sometimes burst forth in others subjected to similar tensions.⁴⁵ Wallace was never able to come to terms with this conflict, and his scientific output suffered later in his career as he devoted more time and energy to social concerns.

DIVERGENT OPINIONS ON WALLACE'S VIEWS

Pointing out that Wallace's interest in spiritualism began in 1865, Malcolm Kottler reasons that Wallace's views on man also began to change at that time, whereas before 1865 Wallace was firmly committed to the action of natural selection alone in the development of man. Thus, Kottler states, "in 1864 Wallace has unequivocally supported natural selection's sufficiency in the development of *all* of man."⁴⁶ But, as pointed out above, Wallace's views on human evolution started to change in 1864. This shift was recognized by Peter Vorzimmer, but he mistakenly relied for his evidence on Wallace's 1870 revision, which invoked the need for an extranatural intelligence absent from the 1864 original.⁴⁷ Vorzimmer refers to the 1870 version and, assuming it to be the same as the original, says: "It was a fact-filled essay whose main thesis was that man's body could be explained only by the theory of natural selection up to the time he became a social animal, but that man's peculiar attributes of mind and soul could be explained only on grounds of intervention of the deity."⁴⁸

Vorzimmer's mistake was pointed out by Kottler.⁴⁹ However, Kottler himself falls into error in failing to realize that Wallace discarded natural selection as an influence on the human body in 1864; he therefore supposes that Wallace's interest in spiritualism was responsible

naturalism. (John Durant, "Scientific Naturalism and Social Reform," *Brit. J. Hist. Sci.*, 12 [1979], 31–58; esp. pp. 34, 36, 48–53.)

45. Smith suggests that Wallace believed socialism would establish a society that would permit the natural selection of the higher moral and intellectual qualities he cherished, and this would allow human progress. However, Wallace arrived at these beliefs during the latter stages of his career (in the early 1900s) and it is not likely that he enjoyed such a clear vision of the value of socialism for the human race in 1869. (Roger Smith, *Brit. J. Hist. Sci.*, 6 [1972], 177–199; quotation on p. 196.)

46. Kottler, "Wallace, The Origin of Man," p. 189. Emphasis in original.

47. Peter Vorzimmer, *The Years of Controversy: The Origin of Species and Its Critics, 1859–1882* (Philadelphia: Temple University Press, 1970), p. 296.

48. *Ibid.*, p. 190.

49. Kottler, "Wallace, The Origin of Man," p. 147.

for his deviation from Darwin.⁵⁰ Wallace himself dated his interest in spiritualism as 1865, and Kottler supports this. So although Wallace's religious beliefs played a role in the development of his scientific ideas, these beliefs cannot be attributed to his initial deviation from Darwin on human evolution.

Wallace's departure from the Darwinian view of the origin of man resulted from his inability to bridge his scientific and moral beliefs. In part, the latter arose from his disenchantment with life in Victorian England and with the answers that the scientific community offered as an explanation of that world. His split with Darwin also expressed his desire for a new and better world, which his evolutionary scheme could provide and the Darwinian mechanism could not.

Ironically, just as Wallace's simultaneous discovery of natural selection helped to goad Darwin into publishing his *Origin of Species*, so it appears that Wallace's rejection of natural selection as a force in the evolution of man played a part in pushing Darwin to publish his views on the *Descent of Man*. Darwin obviously recognized that he could not escape the responsibility of tackling this important issue. He was also aware that his whole concept of "evolution by natural selection" was endangered by Wallace's insistence that natural selection was not the only factor in the evolution of man. If one essential part of the theory was denied, the entire theory was called into question. This was a conclusion that did not escape James Hunt, president in 1864 of the association to which Wallace first revealed his growing differences with Darwin over this issue, the Anthropological Society of London.

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50. Like Kottler, George maintained that spiritualism was the sole cause for the shift in Wallace's view and that this shift took place after 1865. She refers to Wallace's 1864 paper and states (without any supporting evidence) that Darwin was "pleased" with Wallace's views on man. Moreover, George ignores the modifications in Wallace's thinking about natural selection and man and fails to note or examine the comments made by the members of the Anthropological Society at the time Wallace delivered his paper. Surely Darwin could not be "pleased" with Wallace's new position. (Wilma George, *Biologist Philosopher: A Study of the Life and Writings of Alfred Russel Wallace* [London: Aberlard-Schuman, 1964], p. 71.)

Darwin, Wallace, and the *Descent of Man*

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