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Introduction

Janet Browne

IN *THE DESCENT OF MAN*, Charles Darwin dealt with what he called “the highest & most interesting problem for the naturalist.” This volume of essays shows how true these words still remain in the twenty-first century. Published in 1871, *The Descent of Man, and Selection in Relation to Sex** was a comprehensive statement of Darwin’s theory of evolution as it applied to human beings and a far-reaching account of the biological phenomenon that he termed sexual selection; in it Darwin described what he knew about human ancestral origins, the physical characteristics of different peoples, the emergence of language and the moral sense, the relations between the sexes in animals and in humans, and a host of similar topics that blurred the boundaries between ourselves and the animal world. His aim was to demonstrate that human beings had gradually evolved from animals and that the differences were only of degree, not kind. His conclusions were bold: “We must acknowledge, as it seems to

* The first edition, numbering 2,500 copies, was published on February 24, 1871. There are two issues of this edition. The first issue can be distinguished by the inclusion of a note about errata. The printer evidently corrected these errata in the second issue, of 2,000 copies, released in March 1871. The book cost one pound four shillings in a standard green binding. Darwin’s own copy, however, is dated 1870 and was evidently in his hands direct from the printer in December 1870. Richard Freeman, *The Works of Charles Darwin: An Annotated Bibliographical Handlist*, 2nd ed. (Folkestone, England: Dawson, 1977). *Descent* was the first book from which Darwin gained a financial profit. Publisher John Murray sent Darwin a check for £1,470.

me, that man, with all his noble qualities, with sympathy which feels for the most debased, with benevolence which extends not only to other men but to the humblest living creature, with his god-like intellect which has penetrated into the movements and constitution of the solar system—with all these exalted powers—Man still bears in his bodily frame the indelible stamp of his lowly origin.”¹

It had been a long process that brought Darwin to this point. Twelve years earlier, in *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*, he had cautiously written that if his views were accepted, “light would be thrown on the origins of man and his history.”² Since that time, controversy about the possibility of a natural origin for all living beings had swept the globe wherever science was seen as a modernizing force. Was Darwin seriously suggesting that the natural world had not been created by any form of divine being? Were the Judaic and Christian stories of Adam and Eve to be jettisoned? Was there convincing evidence for natural selection? And how could such a mechanical process, ultimately based on probabilities, produce the extraordinary adaptations of animals and plants, let alone the moral sense, language, or civilizations of human beings?

These were some of the issues that are now often referred to as the Darwinian controversies over science and religion. In the nineteenth century, frontline issues largely drew on strong antipathy to the idea of human descent from animals. Christian critics objected to losing the central doctrines of the Bible, even though the Genesis story was already mostly seen as an allegory, and believers in other faiths similarly recoiled from giving up the special place of human beings in nature. Yet, the debate spread further than religious controversy. Secular thinkers criticized the theory on practical grounds: Where was the evidence, and how could it work without some teleological organizing principle at its heart? Debates flared over the prospect of science providing answers to questions that had traditionally been the preserve of theologians and philosophers. To many, Darwin’s ideas heralded a new form of scientific naturalism that could transform the status of science in the Victorian world.³ Radicals saw in it the possibility of atheism and the overthrow

of contemporary political hierarchies.⁴ Throughout, the puzzle of human diversity and what was then called “racial science” pervaded imperial rhetoric and drew on evolutionary theory for support.

The Descent of Man, and Selection in Relation to Sex was Darwin’s carefully considered response to such questions. In its way, this book on humankind was just as memorable as *Origin of Species* and can perhaps be regarded as *Origin*’s missing half. The word “evolution,” first used in its modern sense, occurs on page two of the first volume of *Descent*, in the introduction, where Darwin discussed the likelihood of natural scientists accepting the idea of natural selection.⁵ Darwin also used the term “survival of the fittest,” which he had adopted from Herbert Spencer in 1868.⁶ *Descent of Man* was written in the same personal style as *Origin of Species*, with the same courteous modesty, the same clarity, the same inexhaustible piles of evidence, and the same explicit rationalism. Its intellectual breadth was astonishing. And even though the format now seems archaic, the style of reasoning overly anecdotal, and the social views regrettably typical of a nineteenth-century British gentleman, Darwin’s central arguments retain, even today, their power to explain aspects of the natural world, as is amply shown in this volume.

Darwin’s book was issued in two volumes and contained two parts, as indicated in the title. In Part 1, Darwin gave a systematic account of the connections between humans and animals. He covered comparative anatomy and, at much greater length, the human mental faculties—language, reasoning ability, morality, consciousness, the religious sense, memory, and imagination. Everything that characterized the mind of human beings, Darwin posited, had emerged from animal ancestors, stepwise, by entirely natural processes. In Part 2, Darwin presented his important new concept of sexual selection. He explained how this was different from natural selection and how it worked as a complementary force in evolutionary change. Much of this section was dedicated to establishing what he meant by sexual selection and necessarily included lengthy discussion of the process as discerned in animals. At the end of Part 2, Darwin proposed that sexual selection was instrumental in explaining the origin of what he called human “races” and cultural progress. Here there are fascinating glimpses into Darwin’s understanding

of the biological basis of Victorian racial hierarchies, gender relations, and the structure of contemporary civilization.

Born into an Industrial, Colonial Age

Descent of Man shows Darwin at his most Victorian. His life (1809–1882) spanned much of the nineteenth century, and his science reflected the industrial and political transformations for which Britain was then famous.⁷ From his childhood, he absorbed the prevailing ideology of industrial and colonial progress. He was born in the British industrial Midlands, in the town of Shrewsbury, to a prosperous medical family. One of his grandfathers was Josiah Wedgwood, the chinaware manufacturer, who was a leading figure in the British industrial revolution and the antislavery movements of the day. Wedgwood transformed the consumer market with his factory-produced chinaware but also participated in developing new manufacturing operations, applying ideas such as the division of labor, and opened up the British transport infrastructure by investing in canals and roads. Much of the financial and social capital on which the family's prosperity rested derived from Josiah Wedgwood's commercial success. Darwin's other grandfather was the prominent physician, liberal thinker, and literary figure Dr. Erasmus Darwin. Erasmus Darwin was a member of the small circle of "improvers," medical men and politically progressive intellectuals, who called themselves the Lunar Society.⁸ The Darwin-Wedgwood circle was passionate in its support for abolitionism, and the young Charles Darwin adopted this frame of mind. The family's intellectual pursuits, along with its professional social standing, religious skepticism, high levels of education, commercial acumen, and liberal political views ensured that Charles Darwin always had a place in intellectual British society as well as the prospect of a comfortable financial inheritance, both of which were material factors in his later achievements.

More generally, during Darwin's lifetime, great currents of change were also making their presence felt. In the 1830s, the British nation came as close to political revolution as it ever did, owing to conflict: between landlords and manufacturers, workers against masters, prov-

ince versus metropolis, the hungry and mutinous threatening the commercial-minded and individualistic middle classes. Prime minister Benjamin Disraeli's imagery of two nations, rich and poor, was not overfanciful. The century had opened with warfare. At the end of the century, Britain was again at war, this time in South Africa. By then, imperial expansion and the second industrial revolution—marked by the coming of the railways, significant urbanization, the rise of the middle classes, increasing prosperity, and widespread dissemination of printed texts—was well under way. From the 1850s, a new and varied economy soaked up excess capital, leading to a diversification in the labor force. And in religious terms, although the Protestant (Anglican) faith provided the structure within which most British people operated, the grip of the church was loosening. Dissenting and nonconformist Protestant groups claimed the right to worship in their own manner, to educate the young, to be represented in Parliament, and to take public position and have their views heard. The foundation of a nondenominational University College in London in 1826 marked the opening of higher education to every citizen regardless of creed.

In science, matters were similarly expanding, diversifying, and refocusing. One by one, Victorian thinkers aimed to investigate the world around them without recourse to the Bible's word or the church's doctrinal authority. Religious doubts, secular inclinations, and dissatisfaction with conventional religious doctrines, especially the prevailing system of natural theology, were launched among British intellectuals long before Darwin came on the scene. There was as well rising engagement with science among many different groups of the British public.⁹

By the time Darwin published *Origin of Species*, the nation was witnessing industrial diversification, commercial and professional specialization, religious tension, intense colonial activity, and among the middle classes much talk of national "improvement" and "progress." The self-congratulatory sense of the era was captured by the Great Exhibition of the Works of Industry of All Nations, held in 1851 in central London, in the giant glass exhibition hall dubbed the Crystal Palace.

So why did Darwin deliberately choose to keep humankind out of *Origin of Species*? No doubt he was cautious about stirring up too much

controversy. As he explained to Alfred Russel Wallace in 1857, some years before publication, “You ask whether I shall discuss ‘man’; I think I shall avoid whole subject, as so surrounded with prejudices, though I fully admit that it is the highest & most interesting problem for the naturalist.”¹⁰ But perhaps also because there was widespread middle-class unease about any social, political, or intellectual activities that threatened the status quo. Among these threats were notions of self-generated evolution or, as it was then called, transmutation—that is, change and progress without any divine creation or oversight. To adopt transmutation, as was seen with Robert Chambers’s *Vestiges of the Natural History of Creation*, published anonymously in 1844,¹¹ or to promote points of view that advocated self-determination among human beings, such as the doctrine of phrenology,¹² was at that time to brand oneself as a dangerous political radical who might favor materialism and political upheaval. Radical thinkers might find biological support in transmutation for rejecting the hierarchical social structure of the United Kingdom and thus destabilize the state.

Darwin’s Early Views on Humankind

Descent of Man can be regarded as the completion of an intellectual project begun during Darwin’s travels on the *Beagle* nearly forty years beforehand.

Today the fame of the *Beagle* voyage sometimes makes it hard to remember that its purpose was not to take Darwin around the world but to carry out British Admiralty instructions. The ship had been commissioned to extend an earlier hydrographic survey of South American waters that had taken place from 1825 to 1830. The area was significant to the British government for commercial, national, and naval reasons, buttressed by the Admiralty’s preoccupation with providing accurate sea charts and safe harbors for its fleet in the world’s oceans. Robert FitzRoy, commissioned as the captain of the expedition, invited Darwin to join the voyage as an accompanying man of science, a “gentleman naturalist,” who would collect natural history specimens, make observations and excursions as possible, and very generally keep the captain



FIGURE 1.1. Fuegians encountered during the *Beagle* voyage, in 1835. Over thirty years later, Darwin wrote, in *Descent of Man*: “The astonishment which I felt on first seeing a party of Fuegians on a wild and broken shore will never be forgotten by me, for the reflection at once rushed to my mind—such were our ancestors.” (Engraving by T. Landseer after Conrad Martens, frontispiece of Robert FitzRoy’s *Narrative of the Surveying Voyages of HMS Adventure and Beagle*, vol. 2, 1839)

company. This curious relationship was unusual in the history of exploration. It also meant that Darwin's voyage was often a voyage on land. He had no duties on board. He could arrange whenever possible to be dropped off and picked up at various points, and he made several long inland expeditions in South America with hired guides, including a daring trek across the Andes.

Many aspects of the five-year voyage contributed to Darwin's emerging wish to understand the interconnections of living beings, although his visit to the Galápagos archipelago is the focus of most accounts. Retrospectively, however, it can be seen that his encounters with indigenous peoples were also important elements in unsettling his ideas about the stability of the natural world. The most significant of these was his experience with the inhabitants of Tierra del Fuego (Figure I.1). On board the *Beagle* were three individuals who had been taken from Tierra del Fuego to England by Captain FitzRoy on the previous *Beagle* voyage and were now being repatriated to serve in a projected Protestant mission station to be set up in the far south. FitzRoy had educated these three, and they had become relatively anglicized during their enforced stay in London. Darwin was fascinated by the returning Fuegians, especially O'rundel'lico (or Jemmy Button, as FitzRoy renamed him). In his diary, Darwin recounted his naïve amazement that, after so few years in English company, the three on board the ship were now almost another "species of man" from their literal relatives. This encounter encouraged him to think that human beings could be examined in scientific terms, as part of natural history, in the same way as other species. "I could not have believed," he wrote in his *Journal of Researches* after the voyage ended, "how wide was the difference, between savage and civilized man. It is greater than between a wild and domesticated animal, in as much as in man there is a greater power of improvement."¹³

For two decades after he returned from the *Beagle* voyage, Darwin kept notes about human evolution and pondered how best to develop and present his views.¹⁴ Nevertheless, he chose to foreground other themes in the research program he undertook in preparation for publishing and deliberately kept humankind out of *Origin of Species*. He must have felt justified in some way when the storm of controversy erupted

after publication of *Origin* over the possible apish origins of humankind. Such opinions were dramatized in England in 1860, in a public confrontation between the youthful naturalist Thomas Henry Huxley and conservative theologian Samuel Wilberforce, the bishop of Oxford. The confrontation (which was apparently unplanned) occurred at the annual meeting of the British Association for the Advancement of Science and is remembered today for a clever verbal exchange in which Wilberforce supposedly asked Huxley whether it was through his grandfather or his grandmother that he claimed his descent from an ape. Huxley is thought to have replied that he would not be ashamed to have a monkey for his ancestor but would not wish to be connected with a man who used his great intellectual gifts to obscure the truth. No verbatim account of the discussion exists, and there is considerable uncertainty regarding what Huxley and Wilberforce actually said. But the moment quickly came to symbolize the divergent positions that were being taken on human origins, with the Christian church, as represented by the bishop, standing firm on the divine creation of humankind, and science, as represented by Huxley, offering an entirely naturalistic alternative.¹⁵

So, Darwin bided his time. After *Origin of Species* was published, he threw himself into research projects that illustrated the concept of natural selection in ways that did not relate to human ancestry. He published a careful study of the fertilization of orchids by insects in 1862 that explored coadaptation in depth and an extensive analysis of the variation of animals and plants under domestication in 1868. It is important for us today to recognize Darwin as a superb experimental naturalist. But perhaps these projects also allowed him to evade harder questions, although he always considered such projects as vital supporting evidence for his theory.

Writing *Descent of Man*

Indeed, Darwin might never have published his ideas on humankind if it had not been for changing circumstances brought about by the controversies surrounding *Origin of Species* and the writings of some of his contemporaries on that very issue.

Soon after the publication of *Origin of Species*, three of Darwin's closest scientific friends produced important studies that developed different aspects of evolution as it related to humankind. In 1863, Charles Lyell published the *Antiquity of Man*. In this book, Lyell described the long course of human geological history. Lyell did not have much information to give on actual fossilized humans or prehumans—there were only a few broken parts of crania in collections at that time, and their identification was contested (we now know that they were among the earliest discovered remains of Neanderthals). He focused instead on prehistoric humankind—cavemen and -women. Until then, the paucity of early human artifacts such as worked flints and tools had suggested that humankind was very recent in geological terms, a view that accorded well with the notion that humans had appeared on Earth only when the Bible story started, some 4,000 years ago. Even those who believed in a longer age for the habitable Earth, including those few who believed in non-divine origins for humanity, were sure that human history was relatively short and could be measured in mere thousands of years, not whole geological epochs. The common assumption was that humans appeared only when the planet arrived at its modern state, which was presumed to be after the glacial period—or, for those who believed in the biblical flood, at the point when the floodwaters receded. Lyell pushed the origin of humankind further back, beyond this watery dividing line, into the geological deep past. It was the first significant book after Darwin's *Origin of Species* to shake the contemporary view of humanity.

Then came Thomas Henry Huxley's book, *Evidence as to Man's Place in Nature*, which was published a few weeks after Lyell's. The text showed Huxley at his most argumentative. He used this small volume to continue a scientific dispute with the great anatomist Richard Owen on the anatomical similarities between apes and humans. Partly, too, he used the opportunity to pioneer secular natural history and consolidate his rising position as the main public protagonist for Darwin.¹⁶ Even though Huxley did not fully adopt Darwin's ideas, he defended Darwin's right to propose entirely naturalistic explanations for the living world. In this short, polemical book, Huxley demonstrated how human-

kind must, on all biological grounds, be classified with the apes. The frontispiece (drawn by Benjamin Waterhouse Hawkins) showed five primate skeletons standing in line, each figure leaning slightly forward, ready to evolve into the next. The scale was cleverly adjusted to make the point. From gibbon to orangutan, chimpanzee, gorilla, and human, the implication could not be clearer—humans were the result of a series of physical changes from the apish state. The point was understood by readers but not necessarily accepted. One reviewer observed dryly, “We are not yet obliged to be quite on all-fours with Professor Huxley.”¹⁷

Soon after Huxley was Alfred Russel Wallace, who had formulated the principle of evolution by natural selection independently of Darwin. Wallace wrote two compelling articles on human evolution in the 1860s. In the first, saying what Darwin had stopped short of saying in *Origin*, he argued that natural selection was the primary force in changing apes into people. In the second article, published in the 1869 *Quarterly Review*, Wallace backtracked and declared that natural selection seemed to him insufficient to explain the origin of humankind’s extraordinary mental capacities. He agreed with Darwin that natural selection pushed our apish ancestors to the threshold of humanity. But at that point, he thought, physical evolution stopped and something else took over—the power of mind. The human mind alone continued to advance, human societies emerged, and cultural imperatives took over. According to Wallace, not every society developed at the same rate, accounting for what he and his contemporaries considered to be visible differences in cultural status. Darwin was thoroughly taken aback. “I hope you have not murdered too completely your own and my child,” he wrote to Wallace in surprise.¹⁸ Darwin’s view was that everything that could be considered characteristic of the human condition—language, morality, religious sense, maternal affection, civilization, appreciation of beauty—had emerged in gradual steps from animals. He could not agree with Wallace that some external force—Wallace believed it to be some spiritual power—had made us what we are.

Other publications on human origins were evident too. The creative evolutionism espoused by George Campbell, the Duke of Argyll, was gaining ground. Herbert Spencer’s *Principles of Biology* (1864) and



FIGURE 1.2. Darwin's study in his home, Down House, in Kent, United Kingdom. Here Darwin wrote his most famous books, including *Descent of Man* and *Origin of Species*.

(Photograph by Jeremy DeSilva)

Essays: Scientific, Political and Speculative (1868) integrated evolutionary concepts with political, social, and religious ideas that were already attractive to contemporaries. Ernst Haeckel was busy describing apish ancestry to a German-speaking readership.

The moment at last seemed ripe to Darwin for completing his research on humankind and making it public. He could call on the investigations of prominent anatomists and anthropologists who were favorably disposed toward a secular, biological view of humankind. He was able to consult scientific contemporaries such as Francis Galton, John Lubbock, and Edward B. Tylor, and reach out to knowledgeable colleagues like Haeckel, Pierre Paul Broca, Jean Louis Armand de Quatrefages, Édouard Claparède, and Carl Vogt. His immense network of correspondents could help in locating specialists to guide him through relatively unfamiliar areas, such as the likely beginnings of human language, and in gathering further information on a mass of topics from individuals across the globe. The study in his house in Kent was his center of operations—arranged to offer a private and active working space for his many different projects (Figure I.2). He asked his daughter Henrietta Darwin, age twenty-eight, to act as copy editor and proof-reader, to correct his grammatical mistakes and help with clarity. Soon Darwin had gathered so much material that he felt obliged to put some of it aside for another book. This additional material concerned the expression of emotions in animals and humans and was published in 1872, one year after *Descent of Man*, under the title *The Expression of the Emotions in Man and Animals*. These two books represent Darwin's most important statements on the evolution of humankind.

There was a lot for Darwin to keep in mind, a lot to reformulate and squeeze into shape. "I shall be well abused," he remarked to his close friend Joseph Hooker just before publication, in February 1871.

Publishing *Descent of Man*

John Murray, the publisher of most of Darwin's previous books, flinched at the subject matter of the scientist's latest. Despite his familiarity with Darwin's unorthodox topics and his determination not to let them stand

in the way of a successful business relationship, this book on human ancestry rattled his confidence rather more than *Origin of Species* had done. He asked his publishing colleague, the Reverend Whitwell Elwin, for a professional opinion on Darwin's manuscript. Elwin was the former editor of Murray's *Quarterly Review* and often served as a useful barometer of public opinion for the publisher. "The arguments in the sheets you have sent me appear to me to be little better than drivel," Elwin grouched.¹⁹

Murray bravely went ahead. He printed 2,500 copies of *Descent of Man*, publishing the book in early 1871. Three further print runs were issued during the same year, bringing the number of copies available to readers up to 8,000. Darwin made small changes in the texts of each reprint. For bibliophiles, there are some interesting variants. Darwin's own copy, for example, was ready by December 1870 and has that date printed on its title page. Murray published a second edition in 1874 with corrections and emendations. By 1877 Murray's firm recorded that it had issued a total of 11,000 copies. The American publishing house of D. Appleton and Company simultaneously published *Descent of Man* in New York in 1871 and continued to match the English editions pretty closely. In Europe, the Franco-Prussian War would seemingly have obliterated any prospect of overseas editions and foreign translations. Yet—astonishingly, in view of the political situation, especially during the Siege of Paris and the dreadful events around the Commune of Paris—Darwin's book was translated into Dutch, French, German, Russian, and Italian in 1871, and into Swedish, Polish, and Danish shortly thereafter, a testimony to the fortitude of Darwin's European colleagues and general interest in evolutionary affairs.

Darwin began *Descent of Man* by relating the many incontrovertible anatomical features common to both animals and humankind. Part of his point was to establish that human beings are just as variable in their physical constitution as animals—a continuation of his comparative argument from *Origin of Species*. Then he turned to the mental powers, stating decisively, "There is no fundamental difference between man and the higher mammals in their mental faculties."²⁰ He presented anecdotal observations of animal behavior in substantiation of this claim, with examples

ranging from horses that knew the way home to ants that defended their property, chimpanzees that used twigs as implements, bowerbirds that admired the beauty of their nests, and household cats and dogs that apparently dreamed of chasing rabbits in their sleep. The domestic nature of Darwin's observations in this area, the large doses of willing anthropomorphism, his evident delight in traditional country pursuits, and the glimpses he provided of the congenial home life of a Victorian gentleman inspired Frances Power Cobbe to deride these accounts as "fairy tales of science," in a review published in 1872.²¹ These anecdotes probably went a long way toward softening his readers before he confronted them with the shock of apes in the family tree (Figure I.3).

To explain the emergence of the mind and language of humankind through variation and natural selection was altogether more problematic. Darwin launched straight into an examination of the power of human speech: this was obviously critical for him, since language was integral to all contemporary definitions of being human and was assumed to present an inseparable barrier between animals and humans. Darwin particularly wished to contest the widespread view that the ability to speak indicated God's special gift to humans. The great linguist and scholar Friedrich Max Müller had expressed the view that human language was a divine gift in the magazine *Nature* in 1870. Darwin believed that the ability to speak must have emerged quite differently, arising in a gradual fashion from the social vocalizations of apes and further developing in extremely early human societies through the imitation of natural sounds.²²

Darwin was similarly daring when dealing with the evolution of religious belief. Drawing on the work of the cultural anthropologist Edward B. Tylor, he mapped out a comparative evolution of the religious sense, proposing that religious belief was ultimately nothing more than an urge to bestow a cause on otherwise inexplicable natural events. He proposed that human dreams occurring in early societies might have given rise to the idea of external gods, as Tylor suggested, or to animism, in which plants and animals seem as if they are imbued with spirits. Darwin suggested that these beliefs could easily grow into a conviction about the existence of one or more gods who directed human affairs. As

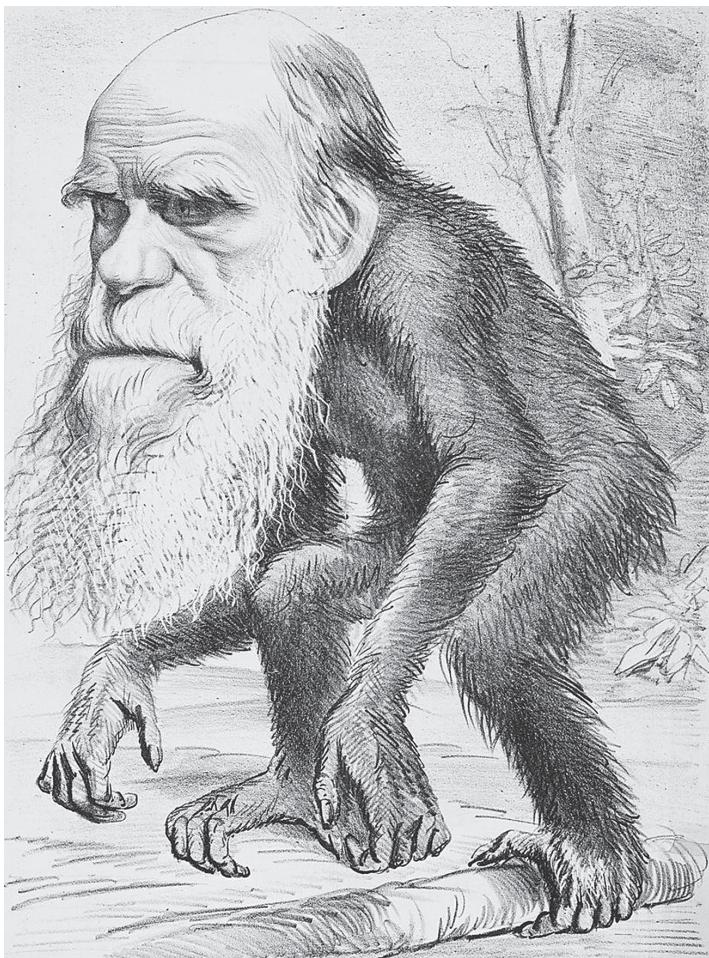


FIGURE 1.3. "A Venerable Orang-Outang." Caricature of Charles Darwin issued after *Descent of Man* was published. (From *The Hornet*, March 22, 1871)

societies advanced in civilization, he said, ethical values would become attached to such ideas. “Strange superstitions and customs” would give way to the “improvement of reason, to science, and our accumulated knowledge.” Human beings have a biological need to believe in something “other,” he suggested. Audaciously, he compared religious devotion to the “love of a dog for its master.”²³

As for human morality, Darwin pointed out that the concept was only relative. Careful reading in canonical moral philosophy texts and long observational experience with household pets (and no doubt his children as well) told him that living beings had to learn the difference between “good” and “bad” behavior—the knowledge was not innate. Moreover, members of what he called “primitive” societies held a wide range of ideas about acceptable behavior, many of which he knew would horrify contemporary Victorians, such as cannibalism. If honeybees ever became as intelligent as humans, Darwin explained, unmarried females would think it a “sacred duty to kill their brothers, and mothers would strive to kill their fertile daughters; and no one would think of interfering.”²⁴

Darwin proposed this more for effect than logical necessity, because he went on to argue that higher human values emerged and spread only as human civilization progressed, meaning that duty, self-sacrifice, virtue, altruism, and humanitarianism were acquired fairly late in human history and not equally by all tribes or groups. “How little the old Romans knew of [sympathy] is shewn by their abhorrent gladiatorial exhibitions. The very idea of humanity, as far as I could observe, was new to most of the Gauchos of the Pampas.”²⁵ It is clear that Darwin thought there had been a progressive advance of moral sentiment from the ancient “barbaric” societies described in Victorian history books, such as those of ancient Greece or Rome, to the civilized world of nineteenth-century England that he inhabited. In this manner, he kept the English middling classes to the front of his readers’ minds as representative of all that was best. The higher moral values were, for him, self-evidently the values of his own class and nation.

Even the sense of duty was for Darwin biologically based in the social instincts. “The highest stage in moral culture at which we can arrive,” he

wrote, "is when we recognise that we ought to control our thoughts."²⁶ To be sure, Darwin praised the intrinsic nobility of this moral feeling, quoting Immanuel Kant. "Duty! Wondrous thought, that workest neither by fond insinuation, flattery, nor by any threat . . . whence thy original?"²⁷ Yet as Darwin described it, a female monkey who voluntarily sacrificed herself for her offspring would not only ensure her children's survival but also supply the next generation with the hereditary material (Darwin had no notion of modern genetics or kin selection) that favored such action again. Personally, he declared, he would rather be descended from a heroic little monkey that sacrificed her life in this manner than from a savage "who delights to torture his enemies, offers up bloody sacrifices, practises infanticide without remorse, treats his wives like slaves, knows no decency, and is haunted by the grossest superstitions."²⁸

In Part 1, Darwin also discussed fossil intermediaries between ape and human and mapped out (in words) a provisional family tree, in which he took information mostly from fellow evolutionists such as Ernst Haeckel and Thomas Henry Huxley. In truth, Darwin found it difficult to apply an actual evolutionary tree to humans. Briefly, he tracked humans back as far as the Old World monkeys, saying that the human species must have diverged from the original monkey stock considerably earlier than did the anthropoid apes, probably at a point close to now-extinct forms of Lemuridae. He recognized the great apes as humanity's nearest relatives. Darwin knew very little about fossil primates and could name only *Dryopithecus*, the largest fossil ape identified in the deposits of Europe at that time (for the second edition of *Descent of Man*, Darwin asked Huxley to fill this gap with an up-to-date essay about fossil finds). He could only guess at possible reasons for human ancestral forms to have abandoned the trees, lost their hairy covering, and become bipedal.

The early progenitors of Man were no doubt once covered with hair, both sexes having beards; their ears were pointed and capable of movement; and their bodies were provided with a tail, having the proper muscles. . . . The foot, judging from the condition of the great

toe in the foetus, was then prehensile; and our progenitors, no doubt, were arboreal in their habits, frequenting some warm, forest-clad spot. The males were provided with great canine teeth, which served them as formidable weapons.²⁹

Sexual Selection and Society

An important part of *Descent of Man* was Darwin's account of human racial diversification. He believed that sexual selection held the answers. "I do not intend to assert that sexual selection will account for all the differences between the races," he wrote in *Descent*.³⁰ Nonetheless, he told Wallace in a letter in 1867 that he felt certain that it was "the main agent in forming the races of man."³¹ As early as 1864 he had in fact explained to Wallace that sexual selection could be "the most powerful means of changing the races of man that I know."³²

In defining sexual selection, Darwin postulated that all animals, including human beings, possess many trifling features that are developed and remain in a population solely because they contribute to reproductive success. These features were heritable (as Darwin understood it) but carried no direct adaptive or survival value. The classic example is the male peacock that develops large tail feathers to enhance its chances in the mating game, even though the same feathers actively impede its ability to fly away from predators. The female peahen, argued Darwin, is attracted to large showy feathers and, if she can, will choose the most adorned mate and thereby pass his characteristics on to the next generation. It was a system, he stressed, that depended on individual choice rather than survival value. Darwin devoted nearly one-third of *Descent of Man* to establishing the existence of this sexual selection in birds, mammals, and insects. In animals, he argued, the choice of mate was determined by the female: the female peahen did the choosing. When he came to humans, he reversed that proposition and insisted that men did the choosing.³³

Darwin used sexual selection to explain the divergence of early humans into the racial groups that Victorian physical anthropologists described. Skin colors were for him a good example. Early men, he

suggested, would choose their mates according to localized ideas of beauty. As the men in any group continued to express their preference for one or another ideal of beauty in women, so the external characteristics of the population would shift. "The strongest and most vigorous men . . . would generally have been able to select the more attractive women . . . who would rear on an average a greater number of children."³⁴ Each society would have dissimilar ideas about what constituted attractiveness, and so the physical features of various groups would gradually diverge through sexual selection alone.

Darwin argued that sexual selection was not confined to physical attributes such as hair or skin color. According to him, sexual selection among humans would also affect mental traits such as intelligence, maternal love, bravery, altruism, obedience, and the "ingenuity" of any given population; that is, heterosexual human pairing choices would go to work on the basic animal instincts and push them in particular directions.

These views were utterly embedded in Darwin's personal social circumstances. While he made a good attempt to be culturally relativistic, he still drew on the conventional ideas of his era and social position about human pairing behavior, choice, and gender. For example, he believed that sexual selection had fostered built-in male superiority across the world. In early human societies, he argued, the necessities of survival had resulted in men becoming physically stronger than women and in their intelligence and mental faculties improving beyond those of women. In civilized regimes it was evident to him that men, because of their well-developed intellectual and entrepreneurial capacities, ruled the social order.

In this way Darwin made human society an extension of biology and saw in every human group a "natural" basis for primacy of the male. After *Descent of Man*'s publication, early feminists and suffragettes bitterly attacked this doctrine, feeling that women were being "naturalized" by biology into a secondary, submissive role.³⁵ Indeed, many medical men asserted that women's brains were smaller than those of men, and they were eager enough to adopt Darwin's suggestion that women were altogether less evolutionarily developed and that the "natural" function

of women was to reproduce, not to think. For several decades, Anglo-American men in the medical profession thought that the female body was especially prone to medical disorders if the reproductive functions were denied. Something of this belief can be traced right through to the 1950s and beyond.

In *Descent of Man*, Darwin also made concrete his thoughts on human cultural progress and civilization. The notion of a hierarchy of races informed his discussion and took added weight from being published at a time when the ideology of extending one nation's rule over other nations or peoples was unquestioned. Darwin stated that natural selection and sexual selection combined with cultural shifts in learned behavior to account for the differences that he saw between populations. The racial hierarchy, as Darwin called it, ran from the most primitive tribes of mankind to the most civilized and had emerged over the course of eons through competition, selection, and conquest. Those tribes with little or no culture (as determined by Europeans) were, he thought, likely to be overrun by bolder or more sophisticated populations. "All that we know about savages, or may infer from their traditions and from old monuments," he wrote, "shew that from the remotest times successful tribes have supplanted other tribes."³⁶ Darwin was certain that many of the currently existing peoples he called primitive would in time similarly be overrun and perhaps destroyed by more advanced races, such as Europeans; he had in mind particularly Tasmanian, Australian, and New Zealand aboriginal peoples. This to him was the playing out of the great law of "the preservation of favoured races in the struggle for life," as expressed in the subtitle of his earlier book *On the Origin of Species*. Such an emphasis on the natural qualities underpinning social cultural development explicitly cast the notion of race into biologically determinist terms, reinforcing then contemporary ideas of a racial hierarchy.

Partly because of Darwin's endorsement and partly because of the influential writings of others, these views intensified during the high imperialism of the early twentieth century. Herbert Spencer's doctrine of "survival of the fittest," as used by Darwin, Wallace, Spencer, and others, in *Descent of Man* and elsewhere, became a popular phrase in

the development of social Darwinism. Embedded in powerful class, racial, and gender distinctions, social Darwinism used the prevailing ideas of competition and conquest to justify social and economic policies in which prosperity and success were the exclusive aim.³⁷ “Survival of the fittest” was a phrase well suited to encourage hard-nosed economic expansion, rapid adaptation to circumstance, and colonization. Karl Pearson, a committed Darwinian biologist, expressed it starkly in Britain in 1900: no one, he said, should regret that “a capable and stalwart race of white men should replace a dark-skinned tribe which can neither utilise its land for the full benefit of mankind, nor contribute its quota to the common stock of human knowledge.”³⁸

Several of Darwin’s remarks in *Descent of Man* captured anxieties that were soon to be made manifest in the eugenics movement. Darwin feared that what he called the “better” members of society were in danger of being numerically swamped by the “unfit.” In this latter category Darwin included men and women of the streets, the ill, indigents, alcoholics, and those with physical disabilities or mental disturbances. He pointed out that medical aid and charity given to the sick and the poor ran against the fundamental principle of natural selection. Evidently torn between his social conscience and what he understood about evolutionary biology, he went on to declare that it was a characteristic of a truly civilized country to aid the sick and help the weak.

In these passages Darwin anticipated some of the problems that his cousin Francis Galton would try to alleviate through the eugenics movement. Galton was an enthusiastic convert to Darwin’s theories and had little hesitation in applying the concept of selection to human populations. He aimed to improve human society through the principles of natural selection: in essence, by reducing the rate of reproduction among those he categorized as the poorer, unfit, profligate elements of society and promoting higher rates of reproduction among the middle classes. Galton hoped that the men he called highly gifted—the more successful men—should have children and pass their attributes on to the next generation. Galton did not promote policies of incarceration or sterilization ultimately adopted by the United States, nor did he conceive of the possibility of the whole-scale extermination of “undesir-

able” groups as played out during World War II. But he was a prominent advocate of taking human development into our own hands and the necessity of improving the human race. Darwin referred to Galton’s point of view in *Descent*.

While Darwin’s *Descent of Man* can hardly account for all the racial stereotyping, nationalist fervor, and prejudice expressed in years to come, there can be no denying the impact of his work in providing a biological backing for notions of racial superiority, reproductive constraints, gendered typologies, and class distinctions.

Legacy

Darwin’s *Descent of Man* could nowadays be considered something of a period piece in the style of argument, the use of evidence, and the conclusions put forward. Yet, as this volume of essays shows, it opened one of the first genuinely public debates about human origins to stretch across general society. The critiques, scientific responses, and thoughtful debates originally generated were evocative of the social diversity of the nineteenth century and remind us that the introduction of new and culturally difficult ideas is rarely straightforward. Moreover, Darwin’s book encouraged important long-term further investigation, both in the lab and in the field, for many different audiences and in many different languages. This continuing work is a remarkable tribute to the lasting power of Darwin’s vision and the ideas themselves.

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