

RESEARCH ARTICLE

Charles Darwin, sexual selection and the evolution of other-regarding ethics

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Abstract

Although many read Charles Darwin's *Origin of Species* as an endorsement, rather than merely a description, of individualism and competition, in *Descent of Man* (1871) Darwin intended to show that natural selection could account for the most noble aspects of human morality and conscience. He did so in response to Alfred Russel Wallace's 1869 statement to the contrary. In doing so, Darwin appealed to the natural selection of groups rather than individuals, and to the maternal, parental and filial instincts, as the origin of truly other-regarding moral sentiments. Further, the inheritance of acquired characters and sexual selection had important implications for Darwin's understanding of how other-regarding ethics might prevail in an evolutionary framework that seemed to reward self-interest. In a short addendum to this essay I highlight just three of a number of Darwin's contemporaries who were impressed by this aspect of his work: the science popularizer Arabella Buckley, the Scottish Presbyterian scholar Henry Drummond and the anarchist geographer and naturalist Peter Kropotkin. In closing, I point to an extensive network of others who framed their concerns about both the 'labour question' and the 'woman question' in evolutionary terms, as a fruitful area for future research in this direction.

In *On the Origin of Species* (1859) Charles Darwin was read by many of his contemporaries as having naturalized the competitive individualism of liberal capitalism. He wrote to his mentor and friend, Charles Lyell, that, according a reviewer for the *Manchester Guardian*, he had justified the behaviour of 'every cheating tradesman'.¹ While this was perhaps not exactly how Darwin had intended his book to be read, it is clear that he was at least relieved that his book had not been associated with the political radicalism that, as Adrian Desmond has shown, had tarnished the reception of earlier transmutationist theories.² The idea that Darwin's theory of evolution by natural selection naturalized, and thus endorsed, individualism and selfishness not only fed social Darwinism, but has remained the dominant interpretation of 'Darwinian ethics' even today. The politics of *Descent of Man* (1871), however, were different. As historians will know, one of Darwin's

1 C.R. Darwin to C. Lyell, 4 May 1860, in *The Correspondence of Charles Darwin*, 28 vols. (continuing), Cambridge: Cambridge University Press, 1993–, vol. 8, p. 188–9, 189, hereafter CCD. The review, 'National and individual rapacity vindicated by the law of nature', appeared in the *Manchester Guardian* of 20 April 1860, p. 4. The author, listed only by the initials T.H.W., has not been identified.

2 Adrian Desmond, *The Politics of Evolution: Morphology, Medicine, and Reform in Radical London*, Chicago: The University of Chicago Press, 1989.

main aims in *Descent* was to respond to his erstwhile colleague Alfred Russel Wallace, who in 1869 had publicly expressed doubts about the efficacy of natural selection to account for mind, morality and a sense of aesthetics – the characteristics that were held to most elevate humankind above the animal world. In stark contrast to the individualistic emphasis of *Origin*, in which even the slightest difference between individuals of the same species might give them a selective advantage in the struggle for existence, in *Descent* Darwin's underlying presumption was that humanity was a social species, and thus that cooperation had been as important for the evolution of our species as had competition. It was through the socially developed aspects of human nature that humans had become reflective, ethical beings, with morals and a conscience. Contrary to Wallace's 1869 conclusions, therefore, Darwin maintained that natural selection could indeed account for these most human of qualities. Further, though, Darwin had more to say about the origin and nature of the human moral sentiments. Far from having their origin in self-interested reason, as the vast majority of commentators on the moral sentiments had argued, Darwin maintained that the origin of human morality was to be found in the social instincts, and in the 'parental and filial affections' in particular. Thus, even though reason and had played a later role in shaping and developing the human moral sentiments, they were truly 'other-regarding' in their origin, and were not, as others had maintained, based in what he called the 'low motive' of self-interest.³

This distinction was and remains significant, for in this respect *Descent of Man* both can, and should, be read as a major contribution to nineteenth-century moral philosophy. Darwin was aware that both his former schoolmate, the industrialist William Rathbone Greg, and his own cousin, Francis Galton, had made arguments that suggested that ethical behaviours (such as preserving those usually deemed to be 'unfit') would undermine rather than strengthen the evolutionary fitness of a group, and he made arguments to counter each of them. Here I show that Darwin not only asserted his hopeful belief that on balance the unfit would not in fact proliferate in numbers sufficient to undermine society, but that maternal love, sexual selection and female choice in particular were factors in ensuring that other-regarding ethics had persisted across human history. While Darwin did not emphasize this last point in his argument, a number of his readers recognized that it was present in his work, and drew it out in their own writings on the social and political significance of Darwin's account of the evolution of the moral sense.

This paper will therefore speak to several historiographical concerns. First, there is an extensive literature that engages with Darwin's account of the evolution of the moral sense. Scholars who have written on this aspect of Darwin's work have expended a great deal of ink and energy debating the extent to which Darwin's account of the evolution of morals relied upon individual or group selection, and thus this engages not only with purely historical considerations, but also with current debate in biology in relation to what has been termed the question of the 'evolution of altruism' and the related debate regarding the levels of selection (i.e. whether selection occurs at the level of the gene, the individual or the group.) It is obviously important for us to understand exactly how Darwin understood the mechanisms of his theories of natural and sexual selection to function; however, we need to be mindful too that the history of this particular debate is still quite overtly tied up with the present, as many of those invested in the present debates seek to show that Darwin was on their side all along.

As we might expect, then, this debate about Darwin's views on the evolution of the moral sentiments is as old as this question in biology, but it became particularly prominent in the 1960s following the publication of vociferous debates about the gene's-eye view of selection and the vocal condemnation of the group-selectionist thinking not only of the

³ Charles Darwin, *The Descent of Man and Selection in Relation to Sex*, 2 vols., London: John Murray, 1871, vol. 1, p. 163.

ornithologist Vero Copner Wynne Edwards, but also of the evolutionary commentary on human nature suggested by Robert Ardrey, Konrad Lorenz and Irenäus Eibl Eibesfeldt.⁴ Richard Dawkins, who popularized the work of Hamilton, G.C. Williams, John Maynard Smith and Robert Trivers in *The Selfish Gene* (1976), made it clear that these advocates of group selection got their biology ‘totally and utterly wrong’, and that they ‘misunderstood how evolution works’ at the most fundamental level.⁵

Historians and philosophers of science have understandably entered into this debate as well, and have paid a great deal of attention to where Darwin stood on individual versus group selection. Michael Ruse has long maintained that Darwin was an advocate of individual selection, and was thus opposed to the group selection that Wallace had clearly advocated from at least 1864.⁶ Robert Richards, Ruse’s opponent on a great number of issues of interpretation where Darwin is concerned, had argued conversely that Darwin was a group-selectionist, but only in the sense that he recognized that the groups he was concerned with were largely made up of biologically related individuals (and not in the sense of a group selection ‘for the good of the species’, advanced by Wynne Edwards and others).⁷ Thus, for all that Darwin clearly had no understanding of genetics, Richards’s work paints Darwin’s understanding of selection as quite compatible with the later notions of inclusive fitness and kin selection advanced by Hamilton, Williams, George Price and Maynard Smith, amongst others. More recent scholarship in this field, however, has insisted that Darwin’s conception of group selection was broader than this, and that his ideas about the importance of culture and the inheritance of acquired characters were significant in this regard. Leading academic voices here have been the philosopher of biology Elliott Sober and the biologist David Sloan Wilson. Their co-authored book *Unto Others* remains one of the more significant contributions to this literature. Further, D.S. Wilson has continued to publish a number of books popularizing his belief that our social and city planning, as well as our public policy, would benefit from a recognition of our social evolutionary history. These works are just a part of a much larger popular literature about the evolution of altruism.⁸ It is notable too, that E.O. Wilson has come over to the group-selectionist way of thinking in recent decades, and, in doing so, has spurred Robert Trivers to underline what he sees as the self-deception of those like Wilson and Wilson, who persist in seeing the world through such rose-coloured spectacles.⁹ Given the partisan divide in this historiography, this paper will likely be of interest to some who follow this debate, and frustrate others.

A second line of historiographic inquiry that is clearly relevant here is that related to sexual selection. Sexual selection, and especially female choice, have received considerably less attention from Darwin scholars than his theory of natural selection. On the face of it, this has been because so many of Darwin’s contemporaries were not persuaded

4 For a detailed discussion of this debate see Mark E. Borrello, *Evolutionary Restraints: The Contentious History of Group Selection*, Chicago: The University of Chicago Press, 2010.

5 Richard Dawkins, *The Selfish Gene*, Oxford: Oxford University Press, 1976, p. 2. This work has been reiterated in a number of other popular works; see, for example, Matt Ridley’s *The Origins of Virtue: Human Instincts and the Evolution of Cooperation*, London: Penguin, 1996.

6 Michael Ruse, ‘Charles Darwin and group selection,’ *Annals of Science* (1980) 37, pp. 615–30.

7 Robert J. Richards, *Darwin and the Emergence of Evolutionary Theories of Mind and Behavior*, Chicago: The University of Chicago Press, 1987.

8 D.S. Wilson, *The Neighborhood Project: Using Evolution to Improve My City, One Block at a Time*, New York: Little Brown and Co., 2011; Wilson; *Does Altruism Exist*, New Haven: Yale University Press, 2015; Wilson; *This View of Life*, New York: Pantheon, 2019.

9 E.O. Wilson, *The Social Conquest of Earth*, London: Norton, 2012; Robert Trivers, *The Folly of Fools: The Logic of Deceit and Self-Deception in Human Life*, New York: Basic Books, 2011; Trivers, *Deceit and Self-Deception: Fooling Yourself the Better to Fool Others*, London: Penguin, 2013.

by his argument. Darwin debated sexual selection with Wallace, but failed to convince him. As Erika Milam has pointed out in her 2010 book *Looking for a Few Good Males*, Wallace found the whole thing just too anthropomorphic – a perspective with which subsequent generations of biologists have agreed.¹⁰ As Michael Ruse has more recently emphasized, though, for all that scientific practitioners found little use for sexual selection and for female choice, both were embraced by contemporary novelists from the first.¹¹ And, further showing the popularity of the idea, Kimberly A. Hamlin has provided a full account of the various ways in which both natural and sexual selection were appropriated by a number of the most influential American early feminist theorists, including Eliza Burt Gamble, Helen Hamilton Gardener, Charlotte Perkins Gilman and Elizabeth Cady Stanton, amongst others. They variously embraced Darwin's conception of female choice as a scientific grounding for female agency and women's rights.¹² It is clear that this kind of comprehensive work has yet to be done in the British context, although Evelleen Richards has certainly laid the groundwork for any such study of how Victorian women engaged with Darwin's works across a number of significant essays.¹³ Richards has also most recently written what is clearly going to be the foundational work for any future consideration of how Darwin developed his theory of sexual selection.¹⁴ As Richards points out in her monumental *Darwin and the Making of Sexual Selection*, generations of Darwin scholars have created an immense scholarly archive dedicated to exactly how Darwin arrived at his theory of natural selection, but prior to her effort, no one had hitherto directed this kind of attention to how Darwin arrived at his theory of sexual selection. Richards shows how Darwin's quite conventional Victorian male and middle-class conceptions of gender and race framed his theory of sexual selection. In making her case she points out that scholars have consistently overlooked the 'very British empiricist aesthetic tradition ... that was closely allied with the wider range of social, political, and ethical debates that relate to the middle-class rise to political power'. In consequence, she says, we have thus missed the extent to which Darwin's theory of sexual selection was deeply infused with, and thus further naturalized, Victorian anglocentric conceptions of the ugly and the beautiful, which in turn were both deeply embedded in and reinforced prevailing middle-class conceptions of gender, sex and race.¹⁵ Richards has written an insightful book, in which she underlines the fact that although Darwin was deeply enthusiastic about sexual selection, and saw what he called 'the law of battle' and 'female choice' as fundamental to his broader thinking about evolution and speciation across the animal world, when it came to humans Darwin was more reticent. Although both the 'law of battle' and 'female choice' had certainly played out among primitive and 'savage' peoples, just as it had for animals, when it came to modern man, however, Darwin was firmly of the opinion that it was the men who did the choosing.

A third area that I hope this work will speak to is perhaps not so much of historiographic significance, but rather speaks more to the public perception of Darwin and

¹⁰ Erika Milam, *Looking for a Few Good Males: Female Choice in Female Biology*, Baltimore: Johns Hopkins University Press, 2010.

¹¹ Michael Ruse, *Evolution as Religion: What Literature Tells Us about Evolution*, Oxford: Oxford University Press, 2016.

¹² Kimberley A. Hamlin, *From Eve to Evolution: Darwin, Science, and Women's Rights in Gilded Age America*, Chicago: The University of Chicago Press, 2014.

¹³ See Evelleen Richards, 'Darwin and the descent of woman', in David Oldroyd and Ian Langham (eds.), *The Wider Domain of Evolutionary Thought*, Dordrecht: D. Reidel, 1983, pp. 57–111; and Richards, 'Redrawing the boundaries: Darwinian science and Darwinian women intellectuals', in Bernard Lightman (ed.), *Victorian Science in Context*, Chicago: The University of Chicago Press, 1997, pp. 119–42.

¹⁴ Evelleen Richards, *Darwin and the Making of Sexual Selection*, Chicago: The University of Chicago Press, 2017.

¹⁵ Richards, op. cit. (14), p. xxv.

Darwinian thought. While scholars might well be aware that in *Descent* Darwin made efforts to understand how human morals, conscience and ethics had evolved, in the public mind the idea of ‘Darwinian ethics’ conjures up an individualistic, competitive ‘struggle for existence’ that leads to the ‘survival of the fittest’. Here I want to reiterate that for all that Darwin emphasized this aspect of natural selection in *On the Origin of Species*, when he came to discuss the evolution of the eminently social human species he saw quite a different mechanism at work. What Darwin’s contemporaries did not immediately pay attention to in *Origin* was Darwin’s suggestion that he had used the term ‘struggle for existence’ ‘in a large and metaphorical sense, including of one being on another, and including (which is more important) not only the life of the individual, but success in leaving progeny’.¹⁶ It was this aspect of evolution that he emphasized in his treatment of human evolution in *Descent of Man*.

This essay is the first in a series of works in which I hope to explore the ways in which Darwin’s ideas of natural and sexual selection were appropriated into the social and political arguments about women’s place in late Victorian and Edwardian British society, the set of concerns that were known to contemporaries as ‘the woman question’. Here my focus is upon Darwin’s articulation of sexual selection in the context of his explanation of the evolution of the human moral sense. Towards the end of this essay I briefly outline how just some of his contemporaries read this aspect of his work. Among them are the popular-science writer and former secretary to Charles Lyell Arabella Buckley, the Scottish evangelical advocate of evolution and author of *The Ascent of Man* (1894) Henry Drummond, and the Russian anarchist and naturalist Peter Kropotkin. In my conclusion I then point towards future directions in which this line of inquiry might profitably be explored.

Man’s place in nature

Darwin had confided his views on the origin of new species to his soon to be close colleague Alfred Russel Wallace in the late 1850s. He had been prompted to do so by a paper that Wallace had sent him, in which he had anticipated, almost exactly, the theory that Darwin had been working on for so long. The story of how Darwin’s mentors, the geologist Charles Lyell and the botanist Joseph Dalton Hooker, encouraged him to write up his efforts in order not to be forestalled is well known, and we know too, from Darwin’s notebooks, that he had speculated on the implications of his theory for humanity from the start.¹⁷ However, as Darwin worked to cut his growing manuscript down to the abstract of his ideas that would later be published as *On the Origin of Species*, he made the decision to excise all mention of human evolution. He had been trying to win his mentor and friend Charles Lyell over to his views, but was aware that this aspect of his theory remained a sticking point.¹⁸ Darwin had argued that if Lyell followed him on natural selection throughout the animal world, then the very uniformity that Lyell had spent his own career advancing implied that the same laws of development must surely apply to

¹⁶ Charles Darwin, *On the Origin of Species by Means of Natural Selection, or The Preservation of the Favoured Races in the Struggle for Life*, London: John Murray, 1859, p. 62.

¹⁷ Janet Browne, *Charles Darwin: The Power of Place*, New York: Alfred A. Knopf, 2002, pp. 34–42; Alistair Sponsel offers an interesting analysis of Lyell’s intervention in *Darwin’s Evolving Identity: Adventure, Ambition, and the Sin of Speculation*, Chicago: The University of Chicago Press, 2018, pp. 230–40; Charles Darwin, Notebook M 84, in Howard E. Gruber and Paul H. Barrett (eds.), *Darwin on Man*, New York: E.P. Dutton & Co., 1974, p. 281. See also Sandra Herbert, ‘The place of man in the development of Darwin’s theory of transmutation, Part II’, *Journal of the History of Biology* (1977) 10(2), pp. 155–227.

¹⁸ C.R. Darwin to C. Lyell, 11 October 1959, CCD, vol. 7, p. 345.

humanity as well. 'I think you will be driven to reject all, or admit all', he said.¹⁹ However reluctantly, Darwin recognized that if he could not convince Lyell, he would be unlikely to convince less sympathetic readers. The inclusion of human evolution would only prejudice readers against his theory. At the end of 1857 Darwin replied to a query from Wallace regarding the extent to which he would discuss humankind in his work. Darwin replied, '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.'²⁰ Darwin could not let the subject go entirely unnoticed, though, and included in the last pages of his book what quickly became the most controversial sentence of his book: 'Light will be thrown on the origin of man and his history.'²¹

Darwin and Wallace

In the years that followed the publication of *Origin*, Darwin was busy with the preparation of subsequent editions, and relied on Huxley, Hooker and other allies to defend his argument in public debate. In 1863 he welcomed Huxley's popular series of lectures on the *Origin of Species* as well as his *Man's Place in Nature*, the arrival of which at Downe led him to whoop over the frontispiece image of man among the apes, 'Hurrah! The Monkey book has come!' he wrote.²² He had no such enthusiasm for Lyell's *Antiquity of Man*, which appeared the same year. Darwin had long counted on Lyell's support and was deeply disappointed with his mentor's 'timidity' regarding evolution. He vented to Hooker, 'I wish to Heaven he had not said a word on the subject.'²³

Darwin was most deeply impressed, though, with Wallace, who in 1864 presented his own views on how natural selection might explain the natural-historical development of mankind to the Anthropological Society of London. This was one of the first public statements by a serious naturalist regarding how natural selection might bear on humankind, and Darwin thought it 'the best paper that ever appeared in the Anth.[ropological] Review!'²⁴ Hooker too was 'amazed by its excellence.'²⁵ Wallace subsequently wrote to Darwin, saying that he had been led to the subject 'by the necessity of explaining the vast mental & cranial differences between man & the apes combined with such small differences in the other parts of the body'.²⁶ Wallace had suggested that as mankind had become intelligent tool users, natural selection had ceased to operate on their bodies so much as upon their minds.²⁷ It was by this process that Wallace sought to account not only for the significant intellectual gulf between man and ape despite the clear morphological similarity that Huxley had emphasized in *Man's Place in Nature*, but also for the development of the different races of humankind. While Huxley had focused upon the similarities between man and animal, Wallace focused on the differences. In *Origin* Darwin had described natural selection working on each individual organism in the animal world, and in this respect Wallace agreed. Among animals, Wallace had noted, each

19 C.R. Darwin to C. Lyell, 11 October 1859, *CCD*, vol. 7, p. 345.

20 C.R. Darwin to A.R. Wallace, 22 December 1857, *CCD*, vol. 6, pp. 514–15, 515

21 Darwin, *op. cit.* (16), p. 488.

22 C.R. Darwin to T.H. Huxley, 18 February 1863, *CCD*, vol. 11, p. 148.

23 C.R. Darwin to J.D. Hooker, 24 February 1863, *CCD*, vol. 11, p. 174.

24 C.R. Darwin to A.R. Wallace, 26 January 1870, *CCD*, vol. 18, p. 18; A.R. Wallace, 'The origin of human races and the antiquity of man deduced from the theory of natural selection', *Journal of the Anthropological Society of London* (1864) 2, pp. clviii–clxxxvii.

25 J.D. Hooker to C.R. Darwin, 14 May 1864, *CCD*, vol. 12, p. 182. See also Darwin's reply, 15 May 1864, in which he agrees that Wallace has written 'a capital paper', *CCD*, vol. 12, p. 183.

26 A.R. Wallace to C.R. Darwin, 10 May 1864, *CCD*, vol. 12, pp. 173–4.

27 Wallace, *op. cit.* (24), p. clxii.

‘depends mainly upon their self-dependence and individual isolation’. In contrast, however, Wallace had argued that man was ‘social and sympathetic’, and asserted that even ‘in the rudest tribes the sick are assisted, at least with food’, and those below the average vigor could still find a place in a mixed economy founded upon a division of labour.²⁸ Under such circumstances, he argued, mental abilities would quickly outstrip purely physical ability in their importance for survival, and thus become ‘the subjects of natural selection’, and significantly, unlike the animal world, in which selection targeted the individual’s ability to survive, Wallace now suggested that the human condition was such that selection had come to act to exacerbate the ‘capacity for acting in concert, for protection and for the acquisition of food and shelter’. Further, those individuals with well-developed ‘sympathy, which leads all in turn to assist each other’, combined with a more developed ‘sense of right, which checks the depredations upon our fellows’, and who exhibited both a ‘decrease in the combative and destructive propensities’ and an increase in the capacity for ‘self restraint’, would find themselves favoured by selection, and would, in consequence, have an ‘increasing influence on the well-being of the race.’²⁹ It is clear that Wallace believed that across the natural history of mankind, selection had worked to increase the size of the brain and the human intellect, that this intelligence had worked in such a way as to facilitate sympathy and cooperation among the forebears of modern man, and that ultimately selection had thus come to act upon communities as a whole, rather than merely upon individuals. ‘Tribes in which such mental and moral qualities were predominant, would therefore have an advantage in the struggle for existence over the other tribes in which they were less developed, would live and maintain their numbers, while the others would decrease and finally succumb’, he wrote.³⁰ It was this process, he concluded, that ‘has raised the very lowest races of man so far above the brutes (although differing so little from some of them in physical structure.)’ Given his audience at the Anthropological Society, and his own interest in how and when the various races of mankind had diverged from a common stock, Wallace suggested that this process had clearly affected each race at a different rate. The action of natural selection had thus led to each race undergoing a different degree of moral and intellectual development, but by far to the fore was ‘the wonderful intellect of the Germanic races’. In short, Wallace, who was on hostile polygenist territory, had argued for the common origin of all the races of mankind, but had left open the door for his audience to conclude that the divergence of the different races had occurred prior to the development of the present state of intellect that distinguished the white ‘Germanic’ races from their intellectual and racial inferiors.³¹

Darwin was pleased to see Wallace take on the subject of human evolution in the face of Lyell’s reticence, although he commented to Hooker, ‘I am not sure that I fully agree with his views about man.’³² His disagreement seems to have stemmed not from Wallace’s characterization of racial hierarchies, but rather from the issue of sexual selection, which Darwin thought had played a significant part in the development of some of the characteristics that Wallace had ascribed only to the action of environmental factors and the correlation of growth. Nevertheless, Darwin told Hooker, ‘There is no doubt, in my opinion, of the remarkable genius shown by the paper’, lamenting, ‘I wish he had written Lyell’s last chapter on Man.’³³

28 Wallace, *op. cit.* (24).

29 Wallace, *op. cit.* (24).

30 Wallace, *op. cit.* (24).

31 Wallace, *op. cit.* (24), pp. clxi, clxvi.

32 C.R. Darwin to J.D. Hooker, 22 May 1864, CCD, vol. 12, p. 204.

33 C.R. Darwin to J.D. Hooker, 22 May 1864, CCD, vol. 12, p. 204.

Darwin so appreciated Wallace's essay that he offered him his own notes on man. He doubted that he would have either the health or the time to venture into the subject himself, telling Wallace, 'I do not suppose I shall ever use them.'³⁴ In the midst of his own writing, Wallace put off Darwin's offer. Thus, in February 1867, when Darwin had finally sent the page proofs of *Variation of Animals and Plants under Domestication* off to Murray, his publisher, and was feeling in better health than he had in a long time, he turned to the subject himself. He wrote to Wallace again, telling him, 'I have almost resolved to publish a little essay on the Origin of Mankind.'³⁵

As Robert Richards has pointed out, Darwin had all but finished what would become *Descent of Man* when he first heard from Wallace that he intended to write about the new-found doubts he had regarding the ability of natural selection to account for a number of aspects of humankind.³⁶ In a letter to Darwin, Wallace alluded to the content of his forthcoming essay review of Lyell's *Elements of Geology* and the latest edition of his *Principles of Geology*, which was slated to appear in the *Quarterly Review*. 'I venture for the first time on some limitations to the power of natural selection', he wrote. Darwin was deeply dismayed when he did read Wallace's review, and was even more perturbed when Wallace followed it up with 'The limits of natural selection as applied to man', the concluding essay in his *Contributions to the Study of Natural Selection*. Wallace's about-face was significant. He now argued that it was 'utterly inconceivable' that in addition to some morphological aspects of mankind, the 'moral and higher intellectual nature of man' could have 'been produced through the action of a law which looks only, and can look only, to the immediate material welfare of the individual or the race'. Rather, such qualities could only be explained by the intervention of a 'Higher Intelligence'.³⁷ Darwin was much aggrieved. 'I differ grievously from you, & am very sorry for it', he wrote.³⁸

The fact that Darwin clearly felt the need to respond immediately to what he could not help but see as Wallace's betrayal is evident from the fact that he turned directly to the subject, writing chapters on the evolution of the intellectual and moral faculties, which would eventually become Chapters 2 and 3 of the first edition of *Descent*. (Darwin would reshuffle the chapters in the second edition, making a much more logical progression of argument in the process.) As Richards has suggested, although Darwin had copious notes of his thoughts on the origin and development of the moral sense in his notebooks from 1837, there is no indication that he had intended to tackle the subject in *Descent* prior to Wallace's change of heart.³⁹ Rather, and as Darwin had outlined in the earlier passages of his book, his intention was to shed light on three questions: 'Whether man, like every other species, is descended from some pre-existing form; secondly, the manner of his development; and thirdly, the value of the differences between the so-called races of man.'⁴⁰ Between 1864 and 1867 Darwin had engaged in significant correspondence with Wallace over sexual selection, and it is clear that Darwin had initially intended *Descent* to be an elaboration on his differences with Wallace on this point, and, as far as his treatment of humans was concerned, to articulate where he differed from the argument that Wallace had made in the 1864 paper that Darwin had otherwise thought so highly of. However, when Darwin read Wallace's review, which he did in April 1869, he changed tack considerably.

34 C.R. Darwin to A.R. Wallace, 28 May 1864, *CCD*, vol. 12, pp. 216–19.

35 C.R. Darwin to A.R. Wallace, 26 February [1867], *CCD*, vol. 15, p. 109.

36 Richards, op. cit. (7), pp. 188–9.

37 A.R. Wallace, 'The limits of natural selection as applied to man', in Wallace, *Contributions to the Theory of Natural Selection: A Series of Essays*, London: MacMillan & Co. 1870, pp. 332–71, 359.

38 C.R. Darwin to A.R. Wallace, 14 April 1869, *CCD*, vol. 17, p. 175.

39 Richards, op. cit. (7), p. 189.

40 Darwin, op. cit. (3), vol. 1, pp. 2–3

Richards has pointed out too that Wallace's defection was not the only problem for Darwin.⁴¹ Although Darwin had greatly appreciated Walter Bagehot's 'Physics and politics' essays, the first two installments of which had been published by this time (the series would extend to five by January of 1872), both William Rathbone Greg and Darwin's own cousin, Francis Galton, had raised significant objections to the argument that Darwin had planned to make. Bagehot, a liberal essayist, economist and banker, and editor of the *Economist*, had discussed the historical and evolutionary development of animal and human social groups, making the case for both a social and an evolutionary function of deference of the individual to the group.⁴² Echoing Wallace, he argued that the suppression of self-interest would set such a group at a competitive advantage over other less socially cohesive groups. However, in his article 'The failure of natural selection in the case of man', published in *Fraser's Magazine* in 1868, Greg had attacked Wallace's 1864 argument for the gradual evolution of sociability. Rather than increasing the competitive advantage of a society, as Wallace had suggested, Greg argued that the preservation of the less useful members of a society would actually undermine rather than strengthen it. Indeed, as far as Greg was concerned, this was no mere hypothesis. The present conditions of society allowed for a 'weak' and 'emasculated' aristocracy to continue to propagate their kind because their unearned wealth and privilege enabled their 'unworthy and incapable inheritors ... to carry off the most desirable brides from their less favoured, though far nobler rivals', and 'to make those brides the mothers of a degenerating, instead of an ever improving race'. This tendency towards degeneration was only exacerbated, Greg argued, by the existence of a mass of paupers who similarly spread their own 'tainted constitutions' without restraint or heed of consequence; 'the poorer they are ... the faster they multiply', he concluded.⁴³ This was a concern that echoed the views of Darwin's own cousin, Francis Galton.⁴⁴ In his 1865 essay 'Hereditary character and talent', Galton had argued that society worked to unbalance nature's course and favoured the unfit aristocratic classes at the expense of the industrious middle class. Galton argued for the institution of a system of marriage that would provide an incentive for the fit to marry and reproduce, while working at the same time to discourage the profligate reproduction of those he considered to be a burden upon society.⁴⁵

When Darwin did turn to the evolution of mind and morality in *Descent*, he thus sought not only to respond to Wallace's rejection of the efficacy of natural selection to account for the evolution of man, mind and morals, but also to counter the arguments of Greg and Galton. He thus sought to frame the origin of humanity's moral sentiments in the animal instincts as a means to undermine the notion that moral sentiments were either a uniquely human attribute or beyond the explanatory power of natural selection, but also to defend the idea that other-regarding sentiments could not only persist, but thrive, in the context of natural selection. In *Descent*, therefore, Darwin countered the idea that the ethics of evolution somehow either endorsed or vindicated the actions of 'every cheating tradesman'. Rather, he now sought to show that what he called 'the most noble part of our nature', our moral conscience and capacity for ethics, was grounded in truly other-regarding sentiments, and not in 'the base principle of selfishness'.⁴⁶

41 Richards, op. cit. (7), pp. 174–5.

42 Walter Bagehot, *Physics and Politics, or Thoughts on the Application of the Principles of 'Natural Selection', and 'Inheritance' to Political Society*, London: H.S. King and Co., 1872, p. 22. The essays that made up this volume were originally published in the *Fortnightly Review* between 1867 and 1872.

43 W.R. Greg, 'On the failure of "natural selection" in the case of man', *Fraser's Magazine*, September 1868, pp. 353–62, 358–9.

44 Francis Galton, 'Hereditary talent and character', *Macmillan's Magazine* (1865) 12, pp. 157–66, 318–27, 320.

45 Galton, op. cit. (44).

46 Darwin, op. cit. (3), vol. 1, p. 98.

The most noble part of our nature

Darwin recognized that his attempt to explain what his contemporaries agreed were the most human aspects of our nature, our intellectual and our moral sensibilities in particular, would be controversial. However, in light of Wallace's about-face, he could hardly avoid the subject. Introducing his consideration of the moral sentiments, he wrote, 'This great question has been discussed by many writers of consummate ability; and my sole excuse for touching on it, is the impossibility of here passing it over; and because, as far as I know, no one has approached it exclusively from the side of natural history.'⁴⁷ This was essentially true; Wallace had initially done so in 1864, but had not really explained in detail, or, to Darwin's satisfaction, exactly how the moral sentiments might have arisen. Added to this, he had more recently, and very publicly, recanted his earlier position to now insist that supernatural intervention was necessary. Further, many of the other authors whom Darwin had read on the subject had said nothing from a natural-historical perspective at all. Those who did, Greg and Galton, had concluded that nature's processes only served to undermine ethical sensibilities. Darwin had read James Mackintosh's *Dissertation on the Progress of Ethical Philosophy* (1836), and had thought its great strength to be Mackintosh's intention to ground human morals in a genuinely other-regarding sentiment. His weakness, though, was that, like Wallace, he had ultimately concluded that morality could only be accounted for by appealing to divine intervention.⁴⁸ Darwin read widely: Alexander Bain had recently published his *Mental and Moral Science* (1868), a compendium of twenty-six British authors who had written on the subject. He also read Benjamin Brodie, John Stuart Mill, Harriet Martineau, Dugald Stuart and David Hume, as well as returning again to Adam Smith, and thus Darwin was aware that every one of these writers had characterized the moral sentiments as the product of human reason, and in consequence unique to humans.⁴⁹ Even Wallace, in his 1864 study, had suggested that sociability, and thus morality, had evolved among humans, whereas animals entered the struggle against nature each on their own individual merits. Hume, whose *Enquiry Concerning Human Understanding* (1772) Darwin had reread as he prepared his manuscript, had drawn an analogy between human reason and animal instinct, but had said little else to suggest a natural origin of these most human qualities. Similarly, in his *Theory of Moral Sentiments*, which remained a major point of reference in discussion of the nature of the moral sentiments, Smith had suggested that the origin of morality lay in the development of 'sympathy', which, he had claimed, was both grounded in reason and essentially self-regarding in character.

Darwin's reading notebooks reveal that he thought long and hard about these authors and issues. He certainly agreed that self-interested sympathy and the rational calculations of utility had been important in the development of the moral sentiments, but, like Mackintosh, he was convinced that the moral sentiments were genuinely other-regarding in nature, and thus that their origin must lie elsewhere. Apparently taking a lead from Wallace, Darwin certainly agreed that the human moral sentiments had their origin in sociability, but, expanding on the hints he had drawn from Hume, he sought to make the case that they were developed from animal instinct and not from reason at all. Neither associationism, nor its attendant utilitarianism, ultimately provided satisfactory

⁴⁷ Darwin, op. cit. (3), vol. 1, p. 71.

⁴⁸ R.J. Richards notes that Darwin read Mackintosh starting in the summer of 1838, referring to it in his notebooks throughout much of 1839 and writing a short essay, dated 5 May 1839, on what he read. See Richards, op. cit. (7), pp. 114–18; the essay is reproduced as a part of 'Old and useless notes', in Gruber and Barrett, op. cit. (17), pp. 398–405.

⁴⁹ Darwin's reading notebooks are reproduced in CCD, vol. 4, Appendix IV, pp. 434–573. See also the footnotes of *Descent of Man*.

answers; as he wrote in *Descent*, ‘Philosophers of the derivative school of morals formerly assumed that the foundation of morality lay in a form of selfishness; but more recently in the greatest Happiness Principle’; both, though, failed to explain so many instances of moral action. What of those circumstances that clearly elicited instantaneous action – of a man rushing to save a drowning child, for instance? Here there was no pause for the rational calculation of pleasures and pains, of costs and benefits. What of discernment and discrimination? Reason demanded that we recognize all men as beings who feel pleasure and pain in like measure to ourselves, and yet Darwin had seen a great many times in his travels the members of which, while acting with great consideration towards their fellows, displayed total indifference to the most abject sufferings of a stranger.⁵⁰ He discussed this in correspondence with the suffrage campaigner and animal welfare advocate Francis Power Cobbe, noting, ‘I cannot see how this view [of morality being grounded in reason] explains the fact that sympathy is excited in an immeasurably stronger degree by a beloved than by an indifferent person.’⁵¹ A further question that bothered him was how reasoned sympathy might account for those most heroic actions of self-sacrifice – what of those who sacrificed their lives in the defense of others? Where was the self-interest in this? he mused. Finally, of course, and this had more to do with Darwin’s aims in his overarching evolutionary project than with pointing out flaws in the argument from reason, he was well aware that if the capacity for morals was the product of reason, a character that was generally accepted as a purely human attribute, then the existence of morality opened up precisely the gap between man and animal that he sought to close.

As is well known, and despite the fact that it received much less emphasis than the individualist and competitive aspects of natural selection, in *Origin* Darwin had discussed the social insects as being a notable exception to the individualism that had otherwise characterized his theory of natural selection. In the case of the social insects, for instance, selection worked for the benefit of the group, shaping the morphologies, behaviours and even the fertility of its different members not for the good of the individual, but for the good ‘of the community’.⁵² It was in the social animals, and in the social insects in particular, that Darwin saw the precursors of morality. He remarked, ‘The following proposition seems to me in a high degree probable – namely, that any animal whatever, endowed with well-marked social instincts, would inevitably acquire a moral sense or conscience, as soon as its intellectual powers had become developed, or nearly as well developed, as in man.’⁵³ As he went on to explain, the existence of social instincts would lead animals to associate with others, to take pleasure in their company, and through the familiarity and sympathy born of this association to perform various services for them ‘of a definite and evidently instinctive nature’. Further, ‘As soon as the mental faculties had become highly developed’, each would not only become aware of its own actions, past as well as present, but would also have a conception of its future. It seemed reasonable, Darwin surmised, to believe that any animal that had developed these faculties would also develop a sense of satisfaction or dissatisfaction over the extent to which its instinctive desires had been fulfilled. Finally, the development of language and the ability to communicate would allow each individual to express their opinions on this matter to others in the community, and as a result, ‘the common opinion how each member ought to act for the public good would naturally become to a large extent the guide to action’. Darwin concluded that habit, and the frequent repetition of such sentiments and actions, would strengthen

50 Darwin, op. cit. (3), vol. 1, p. 167.

51 Darwin, op. cit. (3), vol. 1, p. 81.

52 Darwin, op. cit. (16), p. 236.

53 Darwin, op. cit. (3), vol. 1, pp. 71–2.

them into moral rules.⁵⁴ The social instincts were thus key, and as Darwin later wrote to John Morley, the editor of the *Pall Mall Gazette*, and author of one of the first and most favourable reviews of *Descent of Man*, ‘I do not think that there is any evidence that man ever existed as a non-social animal.’⁵⁵ Darwin made it clear that the most important of these social instincts were the ‘parental and filial affections’.⁵⁶

Not reasoned sympathy, therefore, but instinctive love, not self-interest, but a genuinely ‘other-regarding’ sentiment, such as a mother might feel for her offspring, was the origin of the moral sentiments. This was a distinction that Smith had drawn in his *Theory of Moral Sentiments* – sympathy was reasoned, utilitarian and self-interested; love was not. Love, which had its origins in the sexual passions and familial attachment, was genuinely other-regarding, was one of ‘the passions which we share in common with the brutes’, and, Smith thought, could often result in consequences that, far from securing one’s own self-interest, could often be ‘fatal and dreadful’.⁵⁷

An instinctive love could account for all those things that Darwin felt reasoned sympathy alone could not. It could account for the instantaneous and uncalculated act of the man who rushed to save a drowning child. It might also readily account for acts of discernment or discrimination. An organism might instinctively favour its closest relatives, and tribes similarly might favour their own members over strangers; whereas, if the regard of others was grounded in reason alone, then, Darwin mused, it should logically be extended to all men equally. Further, though, it was certainly the case that only an other-regarding sentiment might account for actions of supreme self-sacrifice, in which an individual gave up his or her life so that another might live. Finally, of course, and as Smith had acknowledged, the parental and filial affections, like all instincts, were evident across the animal kingdom, and thus provided the bridge between man and his animal origins that Darwin sought. For all that the gap between the highest animal and the lowest of mankind was immense, it was one of degree and not one of kind, but – and importantly – tracing the origin of the moral sentiments to such other-regarding instincts as the parental and filial affections allowed Darwin to conclude that ‘the reproach of laying the foundation of the most noble part of our nature in the base principle of selfishness is removed’.⁵⁸

The persistence of the other-regarding sentiments in human societies

Darwin spent considerable time in *Descent* outlining just how he thought sociability and other-regarding sentiments might contribute to the success of a community in terms of natural selection. He noted, ‘A tribe including many members who, from possessing in high degree the spirit of patriotism, fidelity, obedience, courage and sympathy, were always ready to aid one another and to sacrifice themselves for the common good, would be victorious over most other tribes; and this would be natural selection.’⁵⁹ However, although Darwin had thus offered an explanation for how such other-regarding sentiments might prove useful to a community, he was aware that this was only half of the problem. Under the rubric of an individualistic natural selection, those individuals in a community who were more other-regarding than their fellows would – all things being equal – be at a disadvantage, and thus one might reasonably expect that those who exhibited such characteristics would be squeezed out in the struggle for existence. Although

54 Darwin, op. cit. (3), vol. 1, p. 72.

55 C.R. Darwin to J. Morley, 14 April 1871, CCD, vol. 19, pp. 286–7, 287.

56 Darwin, op. cit. (3), vol. 1, p. 80.

57 Adam Smith, *Theory of Moral Sentiments*, Indianapolis: Liberty Fund, 1984, p. 33.

58 Darwin, op. cit. (3), vol. 1, p. 98.

59 Darwin, op. cit. (3), vol. 1, p. 166.

natural selection working on a community level might work to develop these moral sentiments, natural selection working upon the individuals themselves would just as quickly eradicate them. Darwin again returned to his conception of early tribal life to explain this point:

He who was ready to sacrifice his life, as many a savage has been, rather than betray his comrades, would often leave no offspring to inherit his noble nature. The bravest men, who were always willing to come to the front in war, and who risked their lives for others, would on an average perish in larger numbers than other men. Therefore, it seems scarcely possible (bearing in mind that we are not here speaking of one tribe being victorious over another) that the number of men gifted with such virtues, or that the standard of their excellence, could be increased through natural selection, that is, by the survival of the fittest.⁶⁰

So, all things being equal, other-regarding sentiments that led to bravery and altruism would be self-defeating. But, and this was crucial to Darwin's view, all things were not always equal. In fact, he marshalled several lines of argument that militated against this outcome.

First, Darwin acknowledged that certainly, if these brave and self-sacrificing men had children, then these traits would likely persist into the next generation, but, even if this was not the case, Darwin noted that 'the tribe would still include their blood relations'. As Darwin knew from his interactions with breeders and agriculturalists, they were well aware 'that by preserving and breeding from the family of an animal, which when slaughtered was found to be valuable, the desired character has been obtained', so too it would have been with fallen altruists. Darwin doubted, though, whether the family members of those who were willing to risk their own lives for the general good would have children in greater numbers than would those more inclined to preserve their own lives over and above the interests of the community. Their own tendency to act for the common good would similarly put their lives in jeopardy, and thus the self-interested would be the more likely to lead a long life and reproduce their kind.⁶¹

A second possibility that Darwin suggested was grounded not in the other-regarding social instincts at all, but rather in the very self-interest he sought to undermine. He argued that once early humans had developed sufficient reason, they would clearly see that that if they aided others they would be likely to receive aid in return, and from this initially self-motivated action, a general habit of mutual aid might develop, and become instinctive, which would in turn become hereditary and be passed on to future generations.⁶² However, there was a third and, Darwin thought, more significant motivation to serve the community at risk to the self: 'There is another and much more powerful stimulus to the development of the social virtues, namely, the praise and blame of our fellow-men.'⁶³ The tendency to be motivated by the opinions of others had been of long growth even among the progenitors of mankind. Darwin cited John Lubbock and other anthropologists in support of this claim, but he had witnessed as much in his own travels:

Primeval man at a very remote period, would have been influenced by the praise and blame of his fellows ... members of the same tribe would approve of conduct which appeared to them to be for the general good, and would reprobate that which

60 Darwin, *op. cit.* (3), vol. 1, p. 163.

61 Darwin, *op. cit.* (3), vol. 1, p. 161.

62 Darwin, *op. cit.* (3), vol. 1, p. 163.

63 Darwin, *op. cit.* (3), vol. 1, p. 164.

appeared evil. To do good unto others – to do unto others as ye would they should do unto you, – is the foundation of morality.⁶⁴

Indeed, Darwin went so far as to say that the searching after praise and glory, even in an individual who had no instinctive drive to aid his fellow men, would work to develop the tendency to risk one's own life for the good of the community. Indeed, such a man, who might through his own actions inspire others to put themselves at risk for the common good, 'might thus do far more good to his tribe than by begetting offspring with a tendency to inherit his own high character'.⁶⁵

Again, it is important to realize that while there has been a tendency among some commentators to argue that this shows that Darwin was in fact quite in line with modern-day kin-selectionists, it is also important that we recognize where he differed from them. Darwin did indeed seem to be saying that 'genuine' altruism (the 'psychological altruism' of modern debate) would not survive selection, but that self-interested 'biological altruism' could, i.e. that altruistic actions might only survive selection if they benefited the genes of their holders. However, he was also saying much more than this. As I have already suggested, Darwin followed a number of his contemporaries in arguing that just as reason, once developed, could conquer instinct, and give humans genuine free will, so too he believed the converse – that repeated intentional actions could, by becoming habitual, become instinctive, and thus heritable. Importantly – and here he followed Herbert Spencer – once the action had become instinctive, it was the tendency to act and not the intention to act that was inherited, and thus subsequent generations would inherit the tendency to act in a selfless manner not only devoid of conscious selfishness, but in a manner that would quickly be recognized as genuinely other-regarding.⁶⁶ Thus, while Darwin was well aware of the importance of what is now termed kin-selection, his persistent commitment to the inheritance of acquired characters makes his overall views on heredity more difficult to square with present-day theories than some commentators might like to think.

Further, though, there was another aspect of the all-important 'praise and blame' that Darwin returned to in the last chapters of the book, in which he discussed the role that sexual selection had played in the evolution of human sex and society, that had some bearing on the development of the moral sentiments. Although Darwin did not emphasize this aspect of his theory in his chapter on the evolution of the moral sense, reserving comment to the section of *Descent*, in which he discussed sexual selection in humans at length, the implications of his views for the evolution of morality are clear.

The role of sexual selection in the preservation of other-regarding ethics

When Darwin first discussed praise and blame as a motivating force he had made it clear that self-interest would be the likely impetus for individuals to risk their own lives for the good of the group, because, all things being equal, those who acted out of genuine regard for others would be likely to very quickly become a minority in the population as a result of putting themselves in harm's way. However, as I have indicated above, all things were not always equal, and this was especially so when it came to sexual selection.

⁶⁴ Darwin, op. cit. (3), vol. 1, p. 165.

⁶⁵ Darwin, op. cit. (3), vol. 1, p. 165.

⁶⁶ It was debate about Spencer's views on the nature and inheritance of the moral sentiments that occupied the members of the Metaphysical Society for much of the existence of that group. Richard Holt Hutton, William Benjamin Carpenter, James Martineau and Henry Edward Manning were among those who debated the issues. See Piers J. Hale, 'Between intuition and empiricism: William Benjamin Carpenter on man, mind, and moral responsibility', in Catherine Marshall, Bernard Lightman and Richard England (eds.), *The Metaphysical Society (1869-1880): Intellectual Life in Mid-Victorian England*, Oxford: Oxford University Press, 2019, pp. 204–27.

Darwin had initially, if briefly, outlined his theory of sexual selection in *Origin*, and there had pointed out that he understood it to have two distinct aspects, the so-called ‘law of battle’ and ‘female choice’.⁶⁷ The law of battle described male–male competition for available females; female choice applied in those species – or those societies – in which the female played an active role in mate selection. As Darwin recorded in *Descent of Man*, contemporary anthropologists had noted that among primitive peoples, one of the primary reasons for conflict, even more compelling than a struggle for food, was competition between the men of a tribe for females. Theorists such as John Lubbock, John McLennan, Lewis Henry Morgan and Johann Jakob Bachofen had each noted that this had been the case. In the terminology Darwin had employed, this would be the ‘law of battle’. Darwin pointed out that these sources agreed that in the earliest stages of human social development, ‘what Sir. J. Lubbock by courtesy calls “communal marriages” prevailed, that is, that all the men and women in the tribes are husbands and wives to each other’. Exclusive marriage likely had its origins in the capture of women from other tribes who would then become the wife only of their captor.⁶⁸ Once a measure of exclusivity had become the norm, as Darwin argued it very quickly would have done, then competition between men – even of the same tribe – for women would prevail. ‘With barbarous nations’, he noted, ‘the women are the constant source of war both between the individuals of the same tribe and between distinct tribes’.⁶⁹ Given that under these circumstances only the most assertive and the most pugnacious would secure a bride, it seemed reasonable, Darwin thought, that these characteristics would prevail throughout society. How, then, might sexual selection act to preserve other-regarding rather than self-serving sentiments? In essence, it was female choice that ensured that the distinction between the two became blurred, and that both other-regarding actions and sentiments might persist and spread in a population.

In light of what Darwin had already said about the importance of praise and blame in moulding the social behaviour of members of a community, female choice was perhaps the most significant form of societal approval. As Darwin noted, in those societies in which women had a say in the choice of their mate, ‘the women would generally choose not merely the handsomer men, according to their standard of taste, but those who were at the same time best able to defend and support them’. If it was the case, then the standard of taste would also favour not only those who risked their lives for their immediate family, but those who came to the fore to defend the community in times of need. As a result, even if it was the case that those brave enough to risk their own lives for the safety and security of the community died in disproportionate numbers, those who survived would also, on the average, reproduce in greater numbers than either the timid or the selfish man who sought only to preserve his own life.⁷⁰

Darwin went on to document a number of examples of societies in which female choice prevailed. Although in almost every case the ‘law of battle’ persisted, even in these instances it was clear that as the men fought to obtain wives from other tribes, it was the warriors’ highest aspiration ‘to render themselves attractive to the ladies and conspicuous in war’.⁷¹ Perhaps closer to the norm, though – and perhaps at least analogous

67 Darwin, op. cit. (16), pp. 87–90.

68 Darwin, op. cit. (3), vol. 2, pp. 358–60.

69 Darwin, op. cit. (3), vol. 2, p. 323.

70 Darwin, op. cit. (3), vol. 2, pp. 358–9, 374–5. Eveleen Richards, ‘Redrawing the boundaries’, op. cit. (13), pp. 119–42, 140 n. 1, notes that this aspect of female agency was not taken up by many contemporary Darwinians or feminists. Although note my comments in the conclusion to this essay.

71 Darwin, op. cit. (3), vol. 2, p. 342.

to the reality of the arrangements made in many progressive Victorian households – was the tradition that persisted among the ‘Kalmuck’ (Kalmyk) people.⁷²

As Darwin went on to relate, among the Kalmuck, in order for a young man to win his chosen bride from her family, he had to first catch her in a foot race – she being given a judicious head start upon her suitor, her advantage to be determined by her family. As Darwin noted, though, while this had the appearance of being organized and managed by the males of the young woman’s family, according to the anthropologists who had studied this phenomenon, ‘no instance occurs of a girl being caught unless she has a partiality to her pursuer’.⁷³ This was the case too among the native people of the Malay archipelago; and, as Darwin quoted John Lubbock’s influential anthropological work *Prehistoric Times* (1865), in this case too, ‘the race is not to the swift, nor the battle to the strong, but to the young man who has the good fortune to please his intended bride’.⁷⁴ Thus, assuming that women exhibited a preference for males who would protect not only themselves and their children, but also the society more broadly, female choice would militate against the tendency of natural selection to eliminate other-regarding sentiments from the population. Indeed, taking female choice into account, it seems that perhaps Darwin had been a little hasty in his initial judgement that, on average, those who risked their lives for the good of the community would have fewer children than those who who avoided such risks.

As Darwin had made clear, reason as well as instinct had played a role in the evolution of the moral sentiments. Not only did he think that it was the case that intentional actions could become instinctive, but also – and importantly – that instinctive actions could be conquered by reason. Willed action, after all, was what moralists meant by duty and ethics, not an act that was the result of unconscious instinct alone. Thus, while those who acted from self-interest might well be one source of inherited other-regarding instinctive actions, as I have indicated above, so too they and their descendants, once they had developed reason enough, might come to see the rationality of extending their moral regard not only to all in their community but also to those beyond their community, to include the whole of humankind, and, Darwin suggested, eventually, all sentient creatures.

As Darwin put it,

As the feelings of love and sympathy and the power of self-command become strengthened by habit, and as the power of reasoning becomes clearer so that man can appreciate the justice of the judgments of his fellow-men, he will feel himself impelled, independently of any pleasure or pain felt at the moment, to certain lines of conduct.⁷⁵

Sympathy towards the broader community would grow, if not indeed feelings of love that would spread from the family to the tribe, to the nation and the race, and eventually to include the men and women of all races. The fight against slavery was perhaps not, as Adrian Desmond and James Moore have contended, Darwin’s motivation in theorizing the common ancestry of all life on Earth, but it was certainly the logical implication of his conception of the origin and growth of the moral sentiments:

⁷² As is evident to anyone who has read any of Jane Austen’s novels, it seems that a significant occupation among middle-class female society was engaged in ensuring that the ‘right’ young man paid suit to the ‘right’ young lady, all under the guise that it was ultimately the men – the fathers, brothers and future husbands, that were the ones doing the choosing.

⁷³ Darwin, op. cit. (3), vol. 2, p. 373.

⁷⁴ Darwin, op. cit. (3), vol. 2, p. 373.

⁷⁵ Darwin, op. cit. (3), vol. 1, p. 186.

As man advances in civilisation, and small tribes are united into larger communities, the simplest reason would tell each individual that he ought to extend his social instincts and sympathies to all the members of the same nation, though personally unknown to him. This point being once reached, there is only an artificial barrier to prevent his sympathies extending to the men of all nations and races.⁷⁶

Indeed, ever an animal lover, Darwin noted that ‘sympathy beyond the confines of man, that is humanity to the lower animals, seems to be one of the latest moral acquisitions’, and was, he thought, an outgrowth of the general expansion of other-regarding ethical sentiments. ‘This virtue, one of the noblest with which man is endowed, seems to arise incidentally from our sympathies becoming more tender and more widely diffused, until they are extended to all sentient beings.’⁷⁷

Darwin thus hoped not only to demonstrate, contra Wallace, that it was quite possible for man’s intellectual character and moral sentiments to have arisen by natural selection, but also to demonstrate that the human moral sentiments were not ultimately grounded in self-interest, and that even if self-interested reason had played an important, and perhaps even essential, role in their development, they too had developed, and would continue to develop, into an ever greater other-regarding sentiment. Indeed, far from being accurately described as a relentless war of each against all, in *Descent of Man* Darwin clearly suggested that the view of life that he found so full of grandeur was that which told the story of the evolutionary development of the generous communitarian liberalism he held dear.

The embrace of evolutionary altruism

For all that in *Descent of Man* Darwin made a significant contribution to nineteenth-century moral philosophy, a great many of his contemporaries, as well as those who came after him, read him, through *Origin*, as endorsing the competitive politics of ‘every cheating tradesman’. Nevertheless there were a number of significant authors, even if they have thus far been treated as somewhat marginal figures in the history of evolutionary thought, who did recognize Darwin’s contribution, and maintained that it was the most significant aspect of his work. Here I outline only three, each of whom came at this work from very different religious and political perspectives: the science popularizer, spiritualist and former secretary of the geologist Charles Lyell Arabella Buckley; the Scottish Presbyterian biologist and author of the best-selling *Ascent of Man* (1894) Henry Drummond; and the Russian anarchist geographer and naturalist Peter Kropotkin, whose work on the evolution of mutualism stretched from the late 1880s into the 1920s. Here there is not the space to consider each of them in depth, but I hope to flesh out enough of their concerns to show that they did indeed appreciate this aspect of Darwin, and to show that this was in fact quite a widespread interpretation of Darwin’s works from at least the 1880s. I intend to expand upon my consideration of these and other writers in this respect in future work.⁷⁸

Arabella Buckley’s moral teachings of Darwinian descent

Arabella Buckley was deeply influenced by Darwin’s account of the evolution of a truly other-regarding ethics. As a successful popularizer of science Buckley has also received

⁷⁶ Darwin, op. cit. (3), vol. 1, pp. 100–1.

⁷⁷ Darwin, op. cit. (3), vol. 1, p. 101.

⁷⁸ Thomas Dixon has discussed some aspects of this history in *The Invention of Altruism: Making Moral Meanings in Victorian Britain*, Oxford: Oxford University Press, 2008.

some historical attention, and through a number of recent studies we are getting a full picture of her significance.⁷⁹ Buckley began writing about the natural world shortly after the death of Charles Lyell, for whom she had worked as secretary from her mid-twenties. Darwin complemented her on her work, and, being so closely connected with Lyell and others of Darwin's most intimate circle, she was ideally placed to write about evolution in a way that mirrored and developed the ideas she had witnessed them discuss. Buckley stressed the moral lessons that could be drawn from the natural world, first in her books intended for young readers, such as her *Fairyland of Science*, but later, and more explicitly, in works written for adults, most notably her *Moral Teachings of Science* (1892).

Buckley's main aim in this last book was to demonstrate that there was nothing irreligious about Darwin's theory of evolution, and that there was nothing unorthodox about the idea of Creation through uniform laws, rather than at the hand of an ever-intervening God. Further, though, and as Jordan Larsen has suggested, clearly in opposition to the reticence of her former employer on this point, she argued that there was nothing degrading to humanity inherent in the idea that God had created mankind in a like manner.⁸⁰ Further, and again echoing Darwin, she sought to explain to her readers that the most noble part of our nature could indeed be accounted for by both natural and sexual selection; and in doing so, she too stressed the role of the maternal instincts.

Buckley did not shy away from acknowledging that a sincere study of the natural world revealed that the laws of life were dictated in large part by self-preservation; the struggle for existence demanded this much of any organism. The careful student would quickly notice, though, that this dictate had led to many instances of cooperation and mutualism. As she stated in *Winners in Life's Race*,

one of the laws of life, which is as strong, if not stronger than the law of force and selfishness, is that of mutual aid and dependence ... The great moral lessons taught at every step in the history of the development of the animal world, and amidst toil and suffering, struggle and death, the supreme law of life is the law of SELF DEVOTION AND LOVE.⁸¹

Further to this, in her *Moral Teachings of Science*, she noted, 'The most important adaptations ... are connected with the second great instinct of reproduction ... the far more important qualities of love and sympathy.'⁸² Following Darwin's lead, she pointed her readers to the lives of the social insects, the ants, the wasps and the bees, for 'it is in the insects especially that we can best trace how a mother's care was at first a mere mechanical instinct'.⁸³ The lesson to be learnt here was of paramount importance, for this revealed how 'in the struggle for existence, self devotion and self sacrifice for the good of all have been developed out of the maternal instinct'.⁸⁴ For, she said, not only was it the case that 'on the theory of natural selection, the best mothers would rear the most

79 Barbara Gates, 'Buckley, Arabella Burton', in Bernard Lightman (ed.), *Dictionary of Nineteenth-Century British Scientists*, 4 vols., Chicago: The University of Chicago Press, 2004, vol. 1, pp. 337–9; Barbara Gates, *Kindred Nature: Victorian and Edwardian Women Embrace the Living World*, Chicago: The University of Chicago Press, 1998, pp. 51–64; Bernard Lightman, *Victorian Popularizers of Science: Designing Nature for New Audiences*, Chicago: The University of Chicago Press, 2007, pp. 238–53; Dixon, op. cit. (78); Jordan Larsen, 'The evolving spirit: morals and mutualism in Arabella Buckley's evolutionary epic', *Notes and Records of the Royal Society* (2017) 71, pp. 385–408.

80 Larsen, op. cit. (79), pp. 390–1.

81 Arabella Buckley, *Winners in Life's Race, Or, The Great Backboned Family*, London: Edward Stanford, 1882, p. 252–3.

82 Arabella B. Buckley, *The Moral Teachings of Science*, New York: D. Appleton & Company, 1892, p.61.

83 Buckley, op. cit. (82), p. 61.

84 Buckley, op. cit. (82), p. 64.

offspring', but that the maternal instincts to protect them would also be subject to, and exacerbated by, this process.⁸⁵

Thus Buckley, like Darwin, maintained that in fact quite a higher ethic resulted from the working out of nature's laws:

we shall find the results very far removed from the doctrine of selfishness and cruelty, of which the theory of Natural Selection has been accused; and, moreover, we shall see that the high moral instincts and duties which all religions inculcate have their elementary roots deep down in the subsoil of life.⁸⁶

Henry Drummond's *Ascent of Man*

The Scottish Presbyterian biologist, academic and author Henry Drummond consciously built upon Buckley's work in his incredibly popular 1894 book *The Ascent of Man*, and also briefly acknowledged the evolutionary mutualism of Kropotkin, Herbert Spencer, G.J. Romanes, and Geddes and Thompson, amongst others. The book, which sold in excess of 30,000 copies across its first five years of existence in Britain alone, was the published version of the Lowell Lectures he had only recently delivered in the United States.⁸⁷ Drummond's work was perhaps more reliant on these other authors than he acknowledged, but he brought their message to a wider audience, and, like Buckley, he did so under the mantle of evolutionary Christian apologetics.

Echoing arguments that Kropotkin had made in the late 1880s, Drummond made the case that in *Origin* Darwin had overemphasized the struggle for existence, or, as he called it in *Ascent*, 'the struggle for life', at the expense of what he called 'the struggle for the lives of others'. The former was certainly an outcome of natural selection, and was inherently attached to the nutritive demands of any organism; the latter, though, was of at least equal importance, and was the aim and object of reproduction – the thoroughly other-regarding altruism of a mother's unconditional love for her offspring. Drummond's book traced the increasingly complex evolutionary development of these twin, but often contrary, instincts across the animal world and into the highest realm of God's creation, humankind. However, as Thomas Dixon has argued, 'by making a distinction between the struggle for life as the domain of the father, and the struggle for the life of others as the world of the altruistic mother, [Drummond] reinforced the Victorian idea that men and women belonged in separate spheres'.⁸⁸

Peter Kropotkin's Darwinian mutualism

Although in recent years Kropotkin has begun to receive some serious consideration in the history of science, there is still much to be said about both his ideas and his influence. It is well known, for instance, that Kropotkin was motivated to write the series of articles that were later brought together and published as *Mutual Aid: A Factor in Evolution* (1902) in response to the publication of Thomas Huxley's essay 'The struggle for existence: a programme', which had been published in the journal *Nineteenth Century* in 1888. Kropotkin rejected not only Huxley's conception of nature as a 'gladiators' arena' in which the 'strongest, the swiftest and the cunningest' survived, but also the conception of human nature that followed from it, i.e. as divided between the deep and powerful selfish instincts that millennia of struggle had carved into human nature, on the one hand,

⁸⁵ Buckley, op. cit. (82), p. 63.

⁸⁶ Buckley, op. cit. (82), p. 32.

⁸⁷ Dixon, op. cit. (78), p. 284.

⁸⁸ Dixon, op. cit. (78), p. 298.

and the comparatively shallow ethical feelings that had only more recently evolved within human society, on the other. Kropotkin responded to Huxley's assertions by citing *Descent of Man* to a contrary end, and arguing, as Darwin had done, that humans had been social throughout their existence, and further, that the same could be said of the vast majority of the more highly developed animals.⁸⁹ Indeed, and what many historians have missed, is that Kropotkin was arguing that his own interpretation of the natural history of humankind was more in line with Darwin's ideas than was Huxley's, and thus that he was a better Darwinian than Huxley, whom he believed to be misrepresenting the true meaning of Darwin's work.

While Kropotkin embraced Darwin's evolutionary ideas, he did not do so uncritically, however. As Drummond had noticed, Kropotkin criticized Darwin for getting carried away with his conception of a Malthusian 'struggle for existence'. Kropotkin reminded his readers that Darwin had 'at the very beginning of his memorable work ... insisted upon the term being taken in its "large and metaphorical sense including dependence of one being upon another, and including (which is more important) not only the life of the individual, but success in leaving progeny"'.⁹⁰ He also disagreed with Darwin's argument that struggle would usually lead to the extermination of the intermediate forms. Kropotkin thought instead that they would more likely relocate or exploit alternative niches where possible. Divergence of character and speciation did not require the extermination of the less well fitted to a particular niche. Struggle, and direct conflict between individuals – especially individuals of the same species – and the extermination of the loser, were far from the norm, he thought, and certainly were not a law of nature. Kropotkin was far more enthusiastic about the way in which Darwin had suggested that cooperation and mutualism had been central to human natural history. Like Buckley, Kropotkin also appreciated – and highlighted – Darwin's emphasis upon the social instincts, and upon the parental and filial affections in particular, as the origin of truly other-regarding moral sentiments. However, where Darwin had made the point that this link between parent and offspring could, by habit and reason, be extended beyond the immediate group, Kropotkin emphasized too that the fraternal and sororitous instincts would give this expansion of ethical regard to others a firmer and deeper biological foundation.⁹¹ Further, and in light of his knowledge of the ethnology and anthropology of the native peoples of Asia, Kropotkin pointed out too that it was far more common for tribes to intermarry with other tribes as a common and established peaceful practice than for one tribe to make war on another in order to carry away their women. Kropotkin also noted that many of the tribes with which he had become familiar from his own Siberian travels respected the opinions of their women, especially when it came to marriage. Thus where Buckley had emphasized the importance of maternalism in the development of altruism, and Drummond had appealed to this same quality to naturalize Victorian conceptions of sexual difference, not only in *Mutual Aid* but also in his later works Kropotkin acknowledged the importance of female choice, female education and female emancipation both in his description of human history and in the revolutionary and evolutionary anarchist politics through which he advocated for a better future.

Conclusion

I am aware that I have here fleshed out the ideas of Buckley, Drummond and Kropotkin too briefly. But I trust that I have done so in detail enough to show that that there was

⁸⁹ Peter Kropotkin, 'Mutual aid among animals', reprinted in Kropotkin, *Mutual Aid: A Factor in Evolution*, London: Freedom Press, 1986, pp. 21–42, 21.

⁹⁰ Kropotkin, op. cit. (89), pp. 21–2.

⁹¹ Peter Kropotkin, 'The morality of nature', *Nineteenth Century* (1905) 57(337), pp. 407–26.

a wide appreciation of Darwin's account of the other-regarding sentiments. Buckley and Drummond emphasized the maternal aspects of Darwin's appeal to the social instincts, while Kropotkin went further, embracing Darwin's suggestion that female choice was important in the evolution and spread of mutual aid. I have said that across the last decade historians of science have begun to take Kropotkin seriously, but to date they still have done so only in a very limited fashion. His debate with Huxley is now given consideration, and his ideas are now characterized as typical of Russian biology rather than from a crackpot political bias. However, we have still yet to seriously investigate the extent to which Kropotkin's interpretation of Darwinism was influential in England. Elsewhere I have suggested that we need to place Kropotkin not only in the the context of debates about British evolutionary science, but also in the context of the international anarchist and socialist movements, and in the British context in particular.⁹² In light of the line of investigation that I have outlined above, it seems appropriate to recognize that not only did a significant number of male socialist figures appreciate Kropotkin, but so too did a number of women, and – just as Hamlin has pointed out in the case of Gilded Age America – a number of women appealed to natural and sexual selection in support of female and class emancipation. Here we might look to the opinions of the male, but especially the female, members of the Men's and Women's Club that was founded by the socialist evolutionist Karl Pearson – Olive Schreiner, Elizabeth Cobb, Maria Sharpe, Lina Eckenstein and Henrietta Muller – but also the opinions of those whom Pearson excluded from this society on the basis of their being too radical for polite company.⁹³ Here we might usefully look not only to Kropotkin's anarchist collaborator at Freedom Press, Charlotte Wilson, but also to their friends and associates, including the successful novelist Emma Brooke, Eleanor Marx, Annie Besant, Nannie Dryhurst, Agnes Henry, Lilian Wolfe and a host of others.⁹⁴ Many of these women have been given attention by feminist scholars for their views on the prevailing 'woman question', but no one has yet drawn out in a detailed and dedicated study the extent to which their views on the evolution of other-regarding sentiments informed their beliefs and ideas.

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⁹² Piers J. Hale, *Political Descent: Malthus, Mutualism, and the Politics of Evolution in Victorian England*, Chicago: The University of Chicago Press, 2014, pp. 222–51.

⁹³ For a useful starting place see Judith R. Walkowitz, *City of Dreadful Delight: Narratives of Sexual Danger in Late-Victorian London*, Chicago: The University of Chicago Press, 1992, pp. 135–70; but any consideration of the response of Victorian feminists to Darwin's work needs to take account of Richards, 'Redrawing the boundaries', op. cit. (13), and the extensive literature she refers to.

⁹⁴ This social network has in part been mapped out by Federico Ferretti in his *Anarchy and Geography: Reclus and Kropotkin in the UK*, London: Routledge, 2019.

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