



Contents lists available at ScienceDirect

Stud. Hist. Phil. Biol. & Biomed. Sci.

journal homepage: www.elsevier.com/locate/shpsc

John Stuart Mill, innate differences, and the regulation of reproduction

Diane B. Paul^a, Benjamin Day^b

^a Museum of Comparative Zoology, Harvard University, 26 Oxford Street, Cambridge, MA 02138, USA

^b Mass-Care, 33 Harrison Avenue - 5th floor, Boston, MA 02111, USA

ARTICLE INFO

Keywords:

John Stuart Mill
Charles Darwin
Thomas Carlyle
Nature–nurture
Innateness
Reproduction

ABSTRACT

In this paper, we show that the question of the relative importance of innate characteristics and institutional arrangements in explaining human difference was vehemently contested in Britain during the first half of the nineteenth century. Thus Sir Francis Galton's work of the 1860s should be seen as an intervention in a pre-existing controversy. The central figure in these earlier debates—as well as many later ones—was the philosopher and economist John Stuart Mill. In Mill's view, human nature was fundamentally shaped by history and culture, factors that accounted for most mental and behavioral differences between men and women and among people of different classes, nationalities, and races. Indeed, Mill's whole program of social reform depended on the assumption that human differences were not fixed by nature. To identify the leading figures in these disputes about difference and the concrete context in which they occurred, we explore three debates in which Mill played a key role: over the capacities and rights of women, the viability of peasant proprietorship in India and Ireland, and the status of black labor in Jamaica. The last two draw our attention to the important colonial context of the nature–nurture debate. We also show that ideas that for us seem of a piece were not always linked for these earlier thinkers, nor did views on innateness necessarily have the political correlates that we now take for granted.

© 2008 Elsevier Ltd. All rights reserved.

When citing this paper, please use the full journal title *Studies in History and Philosophy of Biological and Biomedical Sciences*

1. Introduction

Historians usually date the beginning of the modern nature–nurture debate to Sir Francis Galton, a cousin of Charles Darwin.¹ It is easy to understand why. For one thing, Galton named the modern controversy in *English men of science: Their nature and nurture* (1874). More substantively, his work of the 1860s was the earliest framing of the issue to be inspired by Darwin's *Origin of species*. As such, he was the first thinker to make *evolutionary* claims about humans' biological nature. (Galton, 1865, 1869)

Most important, Galton was the first systematically to collect and analyze data on human inheritance. His statistical studies convinced many of his contemporaries that every human faculty and quality—physical, mental, moral, or religious—was largely fixed at birth, and that when people succeeded in life it was because they had inherited the requisite traits and that when they failed it

was because they had not. In Galton's view, social circumstances had little to do with achievement, at least in such meritocratic fields as science, literature, and the law. Those born with 'genius' or natural ability (a mix of intellect, energy, and perseverance) would succeed, no matter how unfavorable their environment, while those who lacked it would fail, however auspicious their start in life or powerful their social connections.

But Galton is perhaps best viewed not as initiating a debate but as intervening in one that, in the terminology of the time, counterpoised 'innate character' to 'institutional arrangements' in explaining human mental and moral difference. At the center of that pre-existing debate was the philosopher and economist John Stuart Mill, a zealous advocate for the view that human capacities and dispositions are primarily shaped by institutions. In the *Utility of religion*, Mill distinguished 'the intrinsic capacities of human nature and the forms in which those capacities happen to have been

E-mail addresses: diane.paul@umb.edu (D.B. Paul), bdayer@ranknfile.org (B. Day).

¹ An exception is John Waller (2001), who argues that characterizing Galton as the founder of eugenics has led scholars to neglect an earlier discourse on hereditary traits and judicious reproduction.

historically developed', and famously asserted that 'The power of education is almost boundless: there is not one natural inclination which is not strong enough to coerce, and if needful, to destroy by disuse' (Mill, 1969b, pp. 422, 409). Mill even characterized his own 'natural gifts' for learning as somewhat below par, attributing his intellectual attainments to the early and exceptionally rigorous training he received from his father. (Mill, 1924, p. 21).²

As the reference to 'natural gifts' implies, Mill never doubted that some traits were innate.³ But he did maintain that all humans, irrespective of sex, class, nation, or race, had the same fundamental capacities—or at least that the existence of inherited differences was unproven and the significance of any such differences almost certainly small. The claim that education forges the most important differences among people stretches back at least to Descartes and Locke, and is characteristic of classical economists, who viewed humans as possessing similar potentials, with differences in character and skills arising primarily from economic circumstances.⁴ Mill's views especially echo those of Adam Smith, who assumed a common human 'natural propensity' to 'truck, barter, and exchange' and to improve one's position (see Peart & Levy, 2005; Schabas, 1997, 2005). Thus Smith wrote in *The wealth of nations* that:

The differences of natural talents in different men is, in reality, much less than we are aware of; and the very different genius which appears to distinguish men of different professions, when grown up to maturity, is not upon many occasions so much the cause as the effect of the division of labor. The difference between the most dissimilar characters, between a philosopher and a common street porter, for example, seems to arise not so much from nature as from habit, custom and education. (Smith, 1981, pp. 28–29)

But among the classical economists, only Mill made a systematic effort to explicate and actively disseminate this view.

Beginning in the 1840s, Mill played a key role in virtually every debate in which the issue of human difference was joined. In discussions of the Reform Bill of 1867, the rights of women, education, and landholding in India, the 'Irish question' in all its dimensions, and the status of black labor in Jamaica, among other debates, Mill became the chief standard bearer for the view that social arrangements are a reflection of history and culture rather than nature. Indeed, his whole program of social reform—educational, political, and economic—depended on defeating the view that human differences are fixed by nature. As he wrote in his *Autobiography*:

I have long felt that the prevailing tendency to regard all the marked *distinctions* of human character as innate, and in the main indelible, and to ignore the irresistible proofs that by far the greater part of those differences, whether between individuals, races or sexes, are such as not only might but naturally would be produced by differences in circumstances, is one of the chief hindrances to the rational treatment of great social questions, and one of the greatest stumbling blocks to human improvement. (Mill, 1924, p. 192)

Mill's autobiography was drafted in the 1850s, before Galton had published on the nature–nurture issue. Indeed, Mill's writings on the subject date to as early as 1823, when he published a short article in the *Lancet* arguing that human 'wickedness is not the effect of nature, but of external circumstances' (Mill, 1986, p. 78). In his 1835 essay 'Civilization', Mill elaborated on this theme, contending that the study of history should be made central to an educational system in order to impress on students the 'infinite varieties' and 'astonishing pliability' of human nature, 'and the vast effects which under good guidance be produced upon it by honest endeavor' (Mill, 1977a, p. 145). This chronology raises the question (for a project of broader scope) of when the dichotomy of innate character versus institutions had come to seem a reasonable way of framing issues of political participation and economic entitlement. It also prompts us to ask: with whom was Mill at odds, and with whom allied? In what contexts did these arguments take place? What were the ideological and political correlates of arguments on innateness?

The next two sections of this essay analyze several debates in which the issue of innate difference was contested with the aim of further explicating Mill's views, identifying some of his interlocutors, and contextualizing the arguments. We first focus on controversies over peasant proprietorship in India and Ireland and the status of black labor in Jamaica, debates that draw attention to the important colonial context of the nature–nurture argument. We then explore the controversy over the capacities and rights of women, especially as it was expressed in Mill's quarrel with Darwin—his erstwhile ally on the Jamaica issue. In the final section, we analyze the relationship between Mill's stances on human differences and on reproduction and parenting. A prominent theme throughout this narrative is that ideas that for us seem of a piece did not necessarily cohere for these earlier thinkers, nor did people necessarily make the political commitments that might be expected to follow from their stances on the issue of innateness.

2. The colonial context: peasant proprietorship in India and Ireland; black labor in Jamaica

Mill's most famous statement on innate differences appeared in the first edition of the *Principles of political economy*, where he wrote: 'Of all the vulgar modes of escaping from the consideration of the social and moral influences on the human mind, the most vulgar is that of attributing the diversities of conduct and character to inherent natural differences' (Mill, 1965, p. 319). That claim appears in the section titled 'of cottiers'—that is, concerning landless agricultural laborers who sublet tiny patches of potato ground and constituted both the lowest rung on the Irish class system and its largest occupational group.⁵

Peasant proprietorship appealed to both Mills as a way to replace taxes on trade with a land tax as a source of public revenue; they always advocated peasant proprietorship along with land taxes and the repeal of trade taxes. When Mill and a number of his associates tried to set up an immigrant colony in South

² Galton remarked that for men of enormous natural ability to attribute their success to 'free will' was a form of vanity, illustrating the point by reference to Mill's claim in his 'sad and strange autobiography' (Galton, 1874, p. 148).

³ In *The blank slate*, psychologist Steven Pinker (2002) asserts that there is a taboo against human nature rooted in the ideas of Locke, Rousseau, Descartes, and Mill. But Mill never subscribed to the doctrine of the 'blank slate' in the sense that the term is employed by Pinker. While it is true that Mill rejected the view that we are born with 'clear and distinct ideas', so did Locke—and presumably Pinker (see Blackburn, 2002). Mill assumed that there were innate capacities, dispositions, and tendencies; that is, that there was, for both better and worse, a human nature. And as with physical nature, we have a duty to combat some of its features—a struggle that would obviously be pointless either if there were no natural passions and instincts or if they were fixed (see Mill, 1969a). For a critical comparison of Mill's views with Darwin's, see Richards, 1987, pp. 235–241.

⁴ Thus Descartes famously begins the *Discourse on method* with the claim that 'the power of judging correctly and of distinguishing the true from the false (which is what is properly called good sense or reason) is naturally equal in all men' (Descartes, 2006, p. 5). However, Descartes is not consistent in this view, whereas Smith really did level people regardless of rank, as in his claims that the pauper sleeps more soundly than the king and that the rich consume little more than the poor (Margaret Schabas, personal communication).

⁵ In 1870, 97% of land in Ireland was owned by men who rented it out to tenant farmers rather than cultivating it themselves. Rent was paid for by labor service and there was no legal security of tenure.

Australia, their charter explicitly provided that land would be socialized and land taxes would be the colonial company's exclusive source of revenue, with no trade barriers whatsoever. The same logic applies anywhere—including England. But when it comes to India and Ireland, the whole debate of course has racial overtones. In order to advocate peasant proprietorship, Mill would have to make some sort of a principled criticism against the racial inferiority of predominantly peasant/farmer nationalities.

Mill spent his whole working life at India House, joining his father there as an unpaid assistant in 1823, and retiring only in 1858 when the East India Company was abolished (two years after being appointed, like his father, Chief Examiner). James Mill had hopes for radical reform. In particular, he attributed most of the country's problems to a system that provided little protection to peasants and thus few incentives to improve agriculture. His first priority was to protect peasants' property rights (Zastoupil, 1988, pp. 31–32, 35–36). In his *History of British India*, James Mill took up the whole issue of traditional peasant proprietorship in India, arguing against establishing an English system of large landlords. The father and son developed significant differences in respect to Indian administration, with the younger Mill becoming much more respectful of indigenous institutions, traditions, beliefs, and customs, and sensitive to Indian history and local habits and sentiments (ibid., p. 40). Thus he was disgusted by historian Thomas Macaulay's imposition of English in Indian education (Stafford,

1998, p. 110). But he never wavered from his commitment to peasant proprietorship. In fact, he later extended this land reform perspective to Ireland and even to England (arguing that land should be redistributed from large landholders to peasants or peasant cooperatives).

The issue of character versus institutions was at least as central to the debate over the 'Irish problem'. During the famine, Mill published a series of forty-three articles on the condition of Ireland (1846–1847). His portrait of the Irish peasantry was hardly flattering: the peasants were said to be lazy, brutal, and to breed like rabbits. But by the 1840s, that had become the standard British view, reflected in *Punch* cartoons such as the 1866 portrayal of the Irish with simian features (Fig. 1) and in influential racist commentary in *The Times*. (Lengel, 2002)

Across the political spectrum, the starving Irish peasants were caricatured. Charles Kingsley, the Christian socialist evolutionist and author of *The water babies*, characterized the Irish as 'human chimpanzees', writing to his wife that to see white chimpanzees was terrible—had they been black, 'one wouldn't feel it so much' (Kingsley, 1877, Vol. 2, p. 107, quoted in Curtis, 1968, p. 84). In *The condition of the working class in England*, Friedrich Engels described 'the southern facile character of the Irishman, his crudity, which places him but little above the savage, his contempt for all humane enjoyments, in which his very crudeness makes him incapable of sharing', a people whose 'sensuous, excitable nature

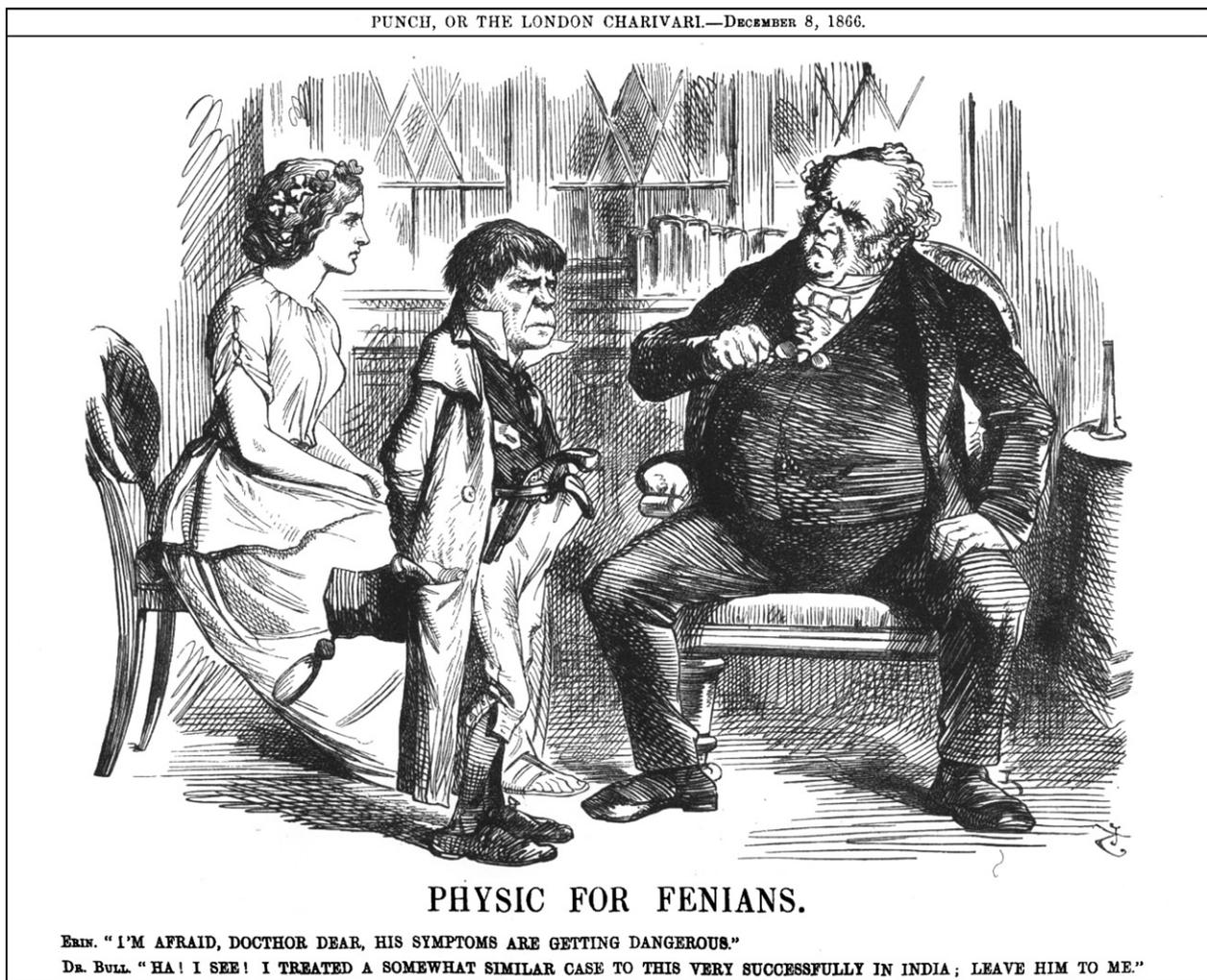


Fig. 1. 'Physic of Fenians' (Tenniel, 1866, p. 231). In the 1840s, what had been an often romantic assessment of Irish peasant culture gave way to the perception that Irish peasants were 'wicked and deranged', and by the 1850s, the Irish were seen as 'irretrievably degenerate' (Leighton, 2005, p. 423; Lengel, 2002).

prevents them from undertaking tasks which require sober judgment and tenacity of purpose' (Engels, 1993, p. 309). In *The descent of man*, Darwin quoted the comments of manufacturer and essayist William Greg (1868) on the Irish in support of Galton's claim that the degraded elements of society were reproducing at a faster rate than the frugal and principled, writing: 'Or as Mr. Greg puts the case. "The careless, squalid, unambitious Irishman multiplies like rabbits", whereas "the frugal, foreseeing, self-respecting, ambitious Scot" marries late and leaves few offspring, with the result that the inferior race prevails in the struggle for existence. (Darwin, 2004, p. 143)

But unlike these and many other commentators, Mill did not attribute the degraded condition of the Irish to their innate racial characteristics. On the contrary, he argued that their indolence and other bad habits resulted from patterns of land tenure. Mill rejected the idea of providing 'outdoor relief', characterizing that solution as an expedient that had already pauperized almost the entire agrarian population of England (Zastoupil, 1983, p. 709). Instead, he proposed (unsuccessfully) that the government drain uncultivated waste lands, which would then be divided into small farms of five to ten acres in order to create a class of independent peasants, who would be either proprietors or have permanent tenure at a fair rent. Commenting on proposals to follow the English pattern of creating large, profitable farms through large-scale clearance of tenants off the land, he suggested that, 'it is the one and not the hundred who ought to depart' (quoted in Stafford, 1998, p. 111). Mill argued that peasant proprietorship would be morally transformative:

When the peasant feels that he is somebody—that he counts for something on the earth—that he also is one of those for whose sake the institutions of society exist, the consciousness will have the same effect on him which it now has on those above him, and he will not choose to live in wretchedness and squalor on the land which is his own. (Quoted in Zastoupil, 1983, p. 711)

His response to the Fenian violence of the mid-1860s was similar. Mill condemned the 1866 government bill to suspend habeas corpus in Ireland, and in his pamphlet 'England and Ireland' of 1868, he attributed political discontent to the land tenure system, arguing that it was a foreign import that contradicted Celtic values. 'The English doctrine of landed property', he observed, 'entered Ireland with the conquest of that country', and its legitimacy was never accepted by the Irish people. It had produced a parasitical and wildly extravagant landlord class and an impoverished class of peasants with no incentive to make improvements. Both expedience (maintaining the Union) and morality pointed to the same solution—the one he had proposed during the famine—thoroughgoing land reform. (Kinzer, 1984, pp. 122–123)

In his 1869 essay, 'Realities of Irish life', William Greg responded:

'Make them peasant-proprietors', says Mr. Mill. But Mr. Mill forgets that, til you change the character of the Irish cottier, peasant-proprietorship would work no miracles. He would fall behind the installments of his purchase-money, and would be called up to surrender his farm. He would often neglect it in idleness, ignorance, jollity and drink, get into debt, and have to sell his property to the newest owner of a great estate . . . In two generations Ireland would again be England's difficulty, come back upon her in an aggravated form. Mr. Mill never deigns to consider that an Irishman is an Irishman, and not an average human being. (Quoted in Levy & Peart, 2001)

Greg's was only one of many unfavorable responses to Mill's proposal; he was even denounced as a communist (Stafford, 1998, p. 112; see also Kinzer, 2001).

But the wrath Mill faced over Ireland was nothing compared to the storm unleashed at roughly the same time by his stance on the Morant Bay uprising in Jamaica, where 13,000 whites ruled 420,000 impoverished blacks. Mill had earlier tangled with his former friend Thomas Carlyle over the latter's proposal to return blacks to compulsory servitude. In his 'Occasional discourse on the negro question' (1849), Carlyle argued that the emancipation of slaves in the West Indies had been a terrible failure, with the islands reduced to a 'Black Ireland'. He saw the 'pumpkin people' of the Caribbean as counterparts to the 'potato people' of Ireland (who were still in the throes of the famine). The journal Carlyle kept during a visit to Ireland in 1849 is full of ravings about the country. In contrast to 'English purities and decencies', Carlyle viewed Ireland as 'a black howling Babel of superstitious savagery', writing that 'human swinery has here reached its *acme*' (Carlyle, 1888, pp. 160, p. 201). According to Carlyle, children in Ireland were bred to be paupers, while those on relief only pretended to work (ibid., pp. 202, 211). In his view, both the Irish and blacks were naturally idle. In his *Latter-day pamphlets*, he referred to the Black West Indies and White Ireland as 'these two extremes of lazy refusal to work' (Carlyle, 1997, p. 21). And for Carlyle, work was the purpose of living: 'to do competent work, to labor honestly according to the ability given them; for that, and for no other purpose, was each of us sent into this world'. Only use of the 'beneficent whip' would compel these black idlers to work as they should. (Carlyle, 1850, pp. 531, 534)

And whose fault was it that the Irish and the West Indians had fallen into pauperism? According to Carlyle, it was economists allied with evangelicals ('Exeter Hall').⁶ In a passage referring to the 'science of supply and demand', he wrote:

Not a 'gay science', I should say, like some we have heard of; no a dreary, desolate, and indeed, quite abject and distressing one; what we might call, by way of eminence, the *dismal science*. These two, Exeter Hall philanthropy and the Dismal Science, led by any sacred cause of black emancipation, or the like, to fall in love and make a wedding of it—will give birth to progenies and prodigies: dark extensive moon-calves, unnameable abortions, wide-coiled monstrosities, such as the world has not seen hitherto! (Ibid., pp. 530–531)

Economic historians Sandra Peart and David Levy note that Carlyle's target in this screed was not Malthus, but economists such as Mill,

who argued that it was institutions, not race, that explained why some nations were rich and others poor . . . It was the fact that economics assumed that people were basically all the same, and all entitled to liberty, that led Carlyle to label economics 'the dismal science'. (Levy & Peart, 2001)

Mill responded quickly since both he and Carlyle had the American South in view. (Slavery had been abolished in the British Empire in 1833, but its continuation in the United States remained an open question). In 'The negro question', Mill asserted that work 'is not a good in itself. There is nothing laudable in work for work's sake' (Mill, 1850, p. 27). It is rather a means to an end. He asked: if the Jamaicans can get by without working all the time, what is wrong with that? 'In opposition to the "gospel of work", I would assert the gospel of leisure, and maintain that human beings *cannot* rise to the finer attributes of their nature compatibly with a life filled with labor' (ibid., p. 28). Noting that Carlyle was apparently

⁶ Exeter Hall, on The Strand in London, was the center of Evangelical England. Erected in 1830 as a non-sectarian hall for religious and scientific meetings and gatherings, it was used by many philanthropic organizations, including the Anti-Slavery Society, and became the headquarters of the YWCA.

not bothered by the idleness of the white proprietors, Mill suggested that what he really wanted was access to cheap spices. It is in this context that he wrote: 'But the great ethical doctrine of the Discourse, than which a doctrine more damnable, I should think, never was propounded by a professed moral reformer, is, that one kind of human beings are born servants to another kind', and he charged Carlyle with 'the vulgar error of imputing every difference which he finds among human beings to an original difference of nature'. (ibid., p. 29)

Then on 7 October 1865, Governor John Edward Eyre brutally suppressed a riot in Morant Bay, Jamaica, imposing martial law and calling in the army to restore order. In the aftermath, over 400 Jamaicans were executed after sham trials, even more were brutally flogged, and thousands of homes burned. A military court ordered the hanging of George William Gordon, a 'coloured' wealthy landowner, Baptist minister and member of Jamaica's legislature, who was nowhere near the riot. In the wake of newspaper reports of the brutalities and public meetings organized by abolitionists and dissenters, the government established a Royal Commission to investigate (Hall, 2002, p. 24). It reported that the riot had in fact represented a real danger requiring a vigorous response, but that martial law had been continued too long and that the punishments were excessive. Since Eyre had already been removed from office, the government concluded that a reprimand would be sufficient response. A 'Jamaica Committee' had earlier been established to press for an inquiry into the events. It now demanded that Eyre be prosecuted for murder and the victims compensated. Although most of the members were evangelicals, Mill was unanimously elected its head. The committee's actions in turn provoked a backlash, and an Eyre Testimonial and Defense Fund was established, with Carlyle (1867) playing the counterpart role to Mill. The main issue would become the nature of racial difference. Catherine Hall writes:

Mill's imagined community was one of potential equality, in which 'us', white Anglo-Saxon men and women, believed in the potential of black Jamaican men and women to become like 'us' through a process of civilisation. Carlyle's imagined community was a hierarchically ordered one in which 'we' must always master them'. (Hall, 2002, p. 25)

As Bernard Semmel (1962) was perhaps the first to note, the composition of the two committees is telling with respect to the fault lines on race, with scientists and economists prominent in the group that favored Eyre's prosecution and literary figures equally prominent in the group that rallied to his defense. Thus Darwin subscribed to the Jamaica Committee, along with Charles Lyell, T. H. Huxley, Herbert Spencer, John Bright, Henry Fawcett, Frederick Harrison, Thomas Hughes, Francis Newman, Leslie Stephens, Edward Beesly, A. V. Dicey, and T. H. Green. Darwin himself was so passionate on the issue that he once 'instantly turned on [his son William] in a fury of indignation' and told him that he 'had better go back to Southampton' when William made some disparaging comments about the Jamaica Committee (though Darwin apologized for the outburst the next morning; reported in Darwin, 1959, p. 612). Joining Carlyle and a host of peers, clergy, and military men in the defense of Eyre were such well known authors as John Ruskin, Charles Dickens, Alfred Tennyson, William Makepeace Thackeray, and Henry and Charles Kingsley (as well as the physicist

John Tyndall and geologist Sir Roderick Murchison, with Joseph Hooker providing covert support; Dutton, 1982, p. 115; Semmel, 1962, p. 118). But it is also important to note that stances on the Eyre question did not map easily onto attitudes about women's rights. Darwin's views will serve as a case in point.

3. The rights of women: Mill's quarrel with Darwin and Cobbe

Darwin was not only an ally of Mill in the effort to prosecute Eyre, but more broadly on issues involving race, such as slavery and the American civil war. In general, they shared a Whig worldview. Moreover, Darwin greatly admired Mill as an intellectual (as did Galton).⁷ When he learned that Mill had praised the *Origin*, Darwin was thrilled.⁸

But on the issue of innateness, they were worlds apart. Darwin had been powerfully influenced by Galton's studies on the transmission of mental qualities (studies that were themselves originally inspired by publication of the *Origin*). In the *Descent of man*, Darwin noted that the inheritance of special tastes and habits, general intelligence, courage, good and bad temper, and so on is evident in dogs and other domestic animals, and that the same pattern is seen in almost every human family, remarking that 'we now know through the admirable labours of Mr. Galton that genius, which implies a wonderfully complex combination of high faculties, tends to be inherited; and on the other hand, it is too certain that insanity and deteriorated mental powers likewise run in the same families' (Darwin, 2004, p. 46). And in his *Autobiography*, Darwin wrote: 'I am inclined to agree with Francis Galton in believing that education and environment produce only a small effect on the mind of any one, and that most of our qualities are innate'. (Darwin, 1958, p. 43).⁹

Darwin's quarrels with Mill are evident in the *Descent*. In a footnote in Book I, referring to comments in *Utilitarianism*, Darwin wrote:

It is with hesitation that I venture to differ from so profound a thinker, but it can hardly be disputed that the social feelings are instinctive or innate in the lower animals; and why should they not be so in man? Mr. [Alexander] Bain ... and others believe that the moral sense is acquired by each individual during his lifetime. On the general theory of evolution this is at least extremely improbable.

In the second edition of *Descent*, he added: 'The ignoring of all transmitted mental qualities will, as it seems to me, be hereafter judged as a most serious blemish in the works of Mr. Mill'. (Darwin, 2004, p. 121 n. 5)

Darwin took specific issue with Mill on the capacities of women. As is well known, Mill was an ardent advocate of women's rights in such spheres as marriage, employment, inheritance and property owning, education, and suffrage. The most prominent advocate in England of civil and political equality of the sexes, Mill campaigned as the candidate for Westminster on a platform that included votes for women. While serving (briefly) in Parliament, he proposed an amendment to the Reform Act of 1867 substituting 'person' for 'men', a proposal defeated in the House of Commons by a vote of 73 to 196 (Hall et al., 2000, p. 207) and satirized in a *Punch* cartoon (Fig. 2).

⁷ Galton actually subscribed to the committee for the election of Mill as the candidate for Westminster to Parliament (see John Stuart Mill for Westminster: Committee for securing the election of Mr. John Stuart Mill, 1865, p. 5).

⁸ Mill had read the *Origin* at the urging of his friend, the Cambridge economist Henry Fawcett, and praised it in the 1862 edition of his *System of logic* as an 'unimpeachable example of a legitimate hypothesis' and 'a wonderful feat of scientific knowledge and ingenuity' (Mill, 1974, pp. 498–499). Mill told Fawcett that 'though he cannot be said to have proved the truth of his doctrine, he does seem to have proved that it may be true, which I take to be as great a triumph as knowledge & ingenuity could possibly achieve on such a question' (quoted in Browne, 2002, p. 186, citing Mill's letter to Alexander Bain, 11 April 1860). From his reading notebooks (now at Cambridge University Library), we also know that Darwin read *On liberty* in 1859 and marked it 'very good'.

⁹ Richard Lewontin (personal communication) has suggested that Darwin's whole theory, with its dependence on heritable variation, might lead him in this direction.

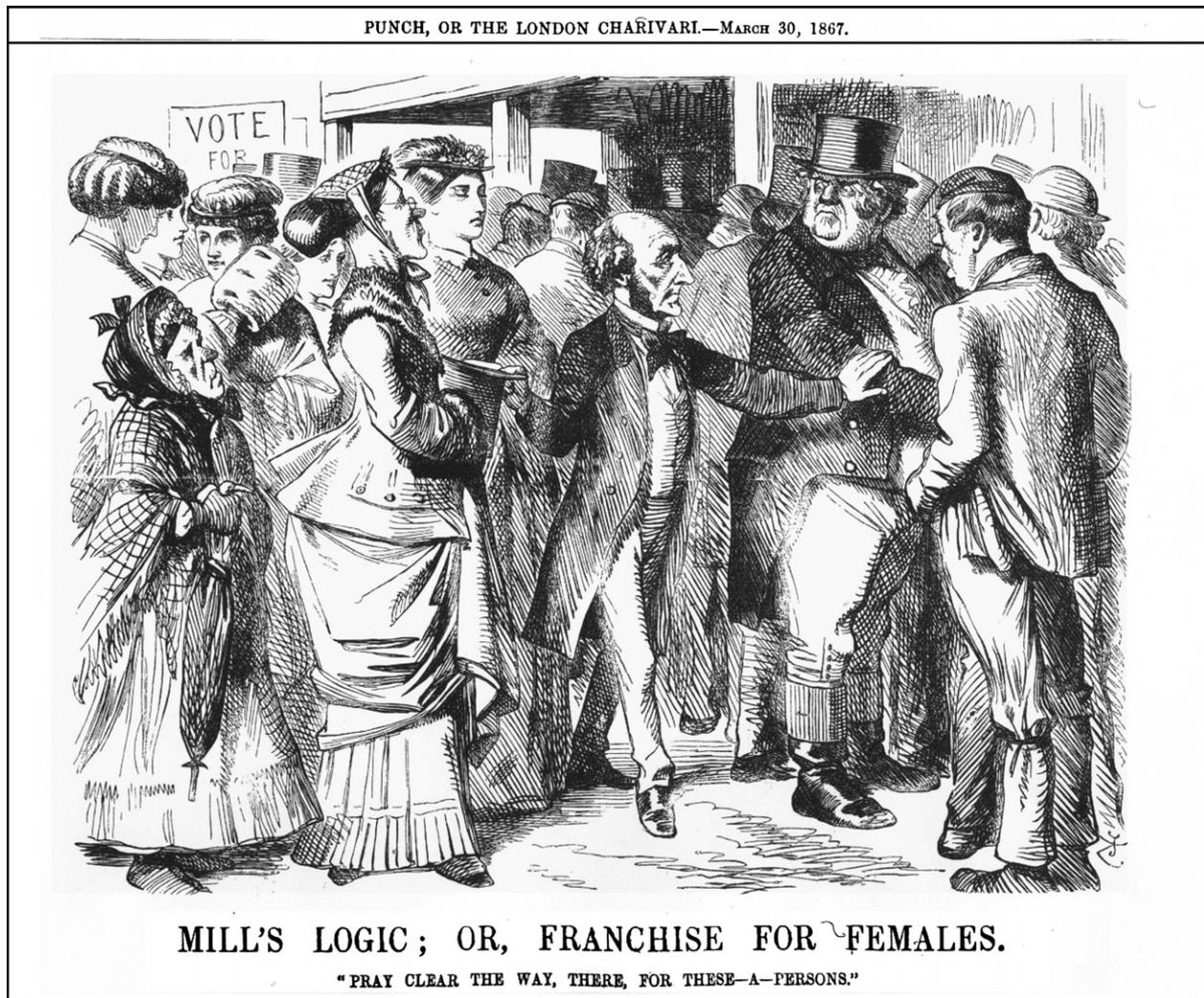


Fig. 2. 'Mill's logic; or, Franchise for females' (Tenniel, 1867, p. 129). 'Pray clear the way, there, for these - A - Persons'.

In the *Subjection of women*, published while Darwin was writing the *Descent*, Mill grounded his defense of woman's rights in the claim that woman's subordinate condition was a product not of her nature but of contingent history (Mill, 1988; Jacobs & Vandervetering, 1999, pp. 24–33; Capaldi, 2004, pp. 334–339). Given the legal and social disabilities imposed on women, he argued, it was impossible to disentangle the effects of heredity and environment. But it also seemed likely that most mental and moral differences between the sexes were the product of social disparities and so could be expected to disappear were women treated as equals.¹⁰

Darwin may have admired Mill and been a sometime ally, but he clearly disliked *Subjection*, and he contested its arguments in his own book. Thus in his discussion of mental powers in the *Descent*, he wrote: 'J. Stuart Mill remarked ... "The things in which man most excels woman are those which require most plodding, and long hammering at single thoughts". What is this but energy and perseverance?' (Darwin, 2004, p. 630). And in his notebooks, Darwin wrote that Mill failed to 'realize that perseverance was

the evolutionary result of men "defending the tribe & hunting" over innumerable generations'. (ibid., p. xlvi).¹¹

Some sections of the *Descent*, which was published two years after *Subjection*, could even be read as a rejoinder to Mill. In the section on 'Differences in the mental powers of the two sexes', Darwin argued that men and women possess very different mental qualities. Women surpass men in tenderness, intuition, rapid perception, and selflessness, but are inferior in energy, courage, ambition, imagination, reasoning ability, perseverance, and intelligence. At least some of the traits associated with females 'are characteristic of the lower races, and therefore of a past and lower state of civilization' (ibid., p. 584). Darwin concluded that, although women should be educated, they were not capable of competing successfully with men. By nature, they were best suited to domestic life.¹¹

In Darwin's view, this inferiority resulted from a combination of natural selection, reinforced by Lamarckian use-inheritance, and especially sexual selection (Richards, 1997, p. 119). Natural selection is important since the abilities to fashion weapons, capture wild animals, avoid or attack enemies, and so forth are useful in

¹⁰ Mill also wrote that 'it would of course be extreme folly to suppose that these differences of feeling and inclination only exist because women are brought up differently from men, and that there would not be differences of taste under any imaginable circumstances' (Mill, 1988, p. 344). But he thought that men and women probably had similar intellectual capacities.

¹¹ Both Darwin and Galton approved when women gained the official right to take Tripos exams at Cambridge in 1881. Indeed, there was little opposition to that proposal, with the motion passing the Senate by 366 votes to 32. But it was a long way from offering degrees or even the right to attend lectures, and a proposal to allow women to matriculate at Cambridge was roundly defeated in 1897 (see McWilliams Tullberg, 1998).

the general struggle for life. These differences are then intensified by use. Thus Darwin wrote:

These various faculties will thus have been continually put to the test and selected during manhood; they will, moreover, have been strengthened by use during this same period of life. Consequently in accordance with the principle often alluded to, we might expect that they would at least tend to be transmitted chiefly to the male offspring at the corresponding period of manhood. (Darwin, 2004, pp. 584–585)

An even more important role was played by sexual selection. Darwin thought that in all sexually dimorphic species (where males and females differ in secondary sexual characteristics like size, strength, song, and color), the differences were explained by mechanisms of female choice and/or the contest of rival males for possession of females. In humans, he thought the process operated in both directions, with males selecting females for physical beauty and emotional qualities, while (to a lesser degree, since males were generally in the driver's seat) females selected males for their strength, intellect, and status.

Sexual selection was thus the primary agent responsible for differences in mental powers between man and woman. 'I am aware that some writers doubt whether there is any such inherent difference', Darwin stated, 'but this is at least probable from the analogy of the lower animals which present other secondary sexual characters. No one disputes that the bull differs in disposition from the cow, the wild-boar from the sow, the stallion from the mare'. Thus 'man has ultimately become superior to woman', and he noted: 'It is, indeed, fortunate that the law of the equal transmission of characters to both sexes prevails with mammals; otherwise it is probable that man would have become as superior in mental endowment to woman, as the peacock is in ornamental plumage to the peahen'. (ibid., pp. 583, 585).¹²

Apart from theoretical considerations, Darwin invoked an analogy with other animals, including other primates—if it is true for them, why not for us?—and direct evidence of differences in achievement. Thus Darwin continued:

The chief distinction in the intellectual powers of the two sexes is shown by man's attaining to a higher eminence, in whatever he takes up, than can woman—whether requiring deep thought, reason, or imagination, or merely the use of the senses and hands. If two lists were made of the most eminent men and women in poetry, painting, sculpture, music (inclusive both of composition and performance), history, science, and philosophy, with half-a-dozen names under each subject, the two lists would not bear comparison. (Ibid., p. 584)

It is not that Darwin considered equality necessarily out of reach, but rather the price of attaining it to be excessive. At the very end of his life he received a letter from the Boston feminist Caroline Kennard, who explained that in a recent paper read in Boston, the author had cited Darwin in scientific support of her claim of women's inferiority. Kennard asked whether the author

was correct, noting that: 'If a mistake has been made, the great weight of your opinion & authority should be righted' (Kennard to Darwin, 26 December 1881, Cambridge, University Library, DAR 201: 17). Darwin replied that although he thought women morally superior to men, they had in the course of evolution become men's intellectual inferiors. Although it might in fact be possible to recover the original equality between men and women, the cost would be high as it would require that 'women must become as regular "bread-winners" as men; & we may suspect that the easy education of our children, not to mention the happiness of our homes, would in this case greatly suffer'. (Darwin to Kennard, 9 January 1882, Cambridge, University Library, DAR 185: 29–30)¹³

Darwin's response to *Subjection* is also evident in a famous exchange in the summer of 1869 with Frances Power Cobbe, the passionate anti-vivisectionist and feminist.¹⁴ Cobbe was a tireless campaigner against domestic violence and advocate for women's suffrage, expanded educational and employment opportunities, and property rights. Quoting in her memoir from a letter to a friend she wrote:

I am glad you like Mill's book [*Subjection*]. Mr. Charles Darwin, with whom I am enchanted, is greatly excited about it, but says that Mill could learn some things from physical science; and that it is in the struggle for existence and (especially) for the possession of women that men acquire their vigour and courage. Also he intensely agrees with what I say in my review of Mill about *inherited* qualities being more important than *education*, on which alone Mill insists. (Cobbe, 1894, pp. 124–125)¹⁵

Cobbe loved *Subjection*; writing Mill three days after its publication, having had advance sheets from the publisher. 'I should vainly try to tell you how grateful I feel to you, how I have longed to thank you as I read page after page—& said in my heart "God bless you", as I closed the whole magnificent argument' (quoted in Mitchell, 2004, p. 191). But what she loved is the argument against the legal subordination of women. On the innateness issue, she stood with Darwin and Galton. In her favorable review of *Hereditary genius*, Cobbe agreed with its author that the unfit should not reproduce, remarking contemptuously on

the generation which believed in the omnipotence of education. Its creed was, that you had only to 'catch your hare' or your child, and were he or she born bright or dull-witted, the offspring of two drunken tramps, or of a philosopher married to a poetess, it was all the same. It depended only on the care with which you trained it and crammed it with 'useful knowledge' to make it a Cato and a Plato rolled into one. Grapes were to be had off thorns and figs off thistles with the utmost facility in the forcing-houses of Edgeworthian schools.

And she went on to comment contemptuously on 'the inalienable right of diseased, deformed, and semi-idiotic married people to bring as many miserable children into the world as they please'. (Cobbe, 1972a, pp. 36–37; see also 1972b)¹⁶

¹² This comment was seized on by the engineer S. Tolver Preston to argue in *favor* of educating women. According to Preston, Darwin showed that 'one of the chief arguments for the intellectual training of woman must be for the direct benefit of *man*' (Preston, 1880, p. 485). In keeping woman down, generation after generation, man had enormously retarded his own advance. Preston tried hard to engage Darwin in discussion of his thesis but the latter only replied that he had neither 'strength nor time for correspondence' (Darwin to Preston, 25 October 1880, Cambridge, University Library, DAR 147: 251).

¹³ Galton took a similar view of women's employment. In 1890, he wrote to Henry Sidgwick, the co-founder of Newnham College, proposing a scheme to encourage the early marriage of Cambridge women who were physically and intellectually superior. They would receive £50 if they married before age 26 and £25 on the birth of each child. 'We want to swamp the produce of the proletariat by a better stock. ... It is a monstrous shame to use any of these gifted girls for hack work, such as bread winning. It is as bad as using up the winners of the Oaks in harness work' (quoted in McWilliams Tullberg, 1998, p. 85).

¹⁴ Darwin's exchange with Cobbe and the more general issue of his use of evolutionary arguments to explain female inferiority has been discussed in two important essays by Evelleen Richards (1983, 1997).

¹⁵ Janet Browne (2002), p. 332, notes that, 'Privately, he asked William to read up on Mill and tell him what to think'.

¹⁶ Cobbe was later estranged from Galton, writing in her memoirs that: 'Mr. Galton's speculations seemed always to me exceedingly original and interesting, and I delighted in reviewing them. The beginning of the Anti-vivisection controversy, however, put an end to all these relations [e.g. with W. B. Carpenter, Lyell, and Tyndall], so that since 1876, I have seen few of the circle' (Cobbe, 1894, Vol. 2, p. 121). She was estranged from Mill as well over the vivisection controversy and also over publication of an extract from a letter.

In her review of *Subjection*, Cobbe claimed that women were almost certainly less intelligent than men (though morally superior). Mill had argued that we were unable to draw conclusions about women's natural capacities from the fact that they had not produced any great original work in literature or art. After all, women have been confined to domestic life, their ideas may have been appropriated by males, for cultural reasons they may have been unwilling to make the necessary sacrifices, and so on. So nature and nurture were completely entangled, making it impossible to draw any conclusions from their lack of achievement. Cobbe responded that if they had the capacities, surely there would be at least one masterpiece created by a woman. 'One single really great work of ancient or modern times achieved by a woman, in poetry, in history, in sculpture, in painting or in music, only one in which creative power had beyond all doubt or question built an enduring trophy, and we should cease to hesitate [to accept Mill's argument]'. Alas, none exists. However, this lack is wholly irrelevant to the politico-legal question: after all, we don't deny stupid, ignorant, or uncreative men the right to vote. 'It is not as sculptors, painters and musicians that men are permitted or wanted to exercise civil rights' (Cobbe, 1995, pp. 69–72). Clearly ideological and political commitments do not necessarily run together in ways that now seem to be natural to us.¹⁷

4. Mill on parental responsibilities

A close examination of Mill's views on reproduction also reveals an unexpected configuration of beliefs. Today, eugenics is often equated with any controls on reproduction. Moreover, there is a widespread assumption that support for such controls rests on the assumption of selective variance for the traits in question—after all, unless the differences have a hereditary basis, we cannot breed for them.

But the case of Mill reminds us that one may aim to control breeding for reasons other than concerns about the biological quality of the population. Although Mill attributed virtually all differences among individuals and groups to differences in education and training, he felt passionately that certain kinds of people should not breed. Joseph Hamburger (1999) is one of the few scholars to have noted Mill's rather draconian views on the obligations associated with parenting and marriage, views that are something of an embarrassment for the standard reading of Mill as an unambiguous defender of individual liberty (but not for Hamburger's non-libertarian reading, which calls attention to the many kinds of conduct that Mill wished to subject to greater control in the form of legal penalties and/or social pressure). In any case, Mill believed that reproduction was quintessentially social, with consequences in the first place for the child-to-be. 'The fact itself, of causing the existence of a human being, is one of the most responsible actions in the range of human life. To undertake this responsibility—to bestow a life which may be either a curse or a blessing—unless the being on whom it is to be bestowed will have at least the ordinary chances of a desirable existence, is a crime against that being', he wrote in a typical passage (Mill, 1977b, p. 304). In Mill's view, the decision to reproduce also had important political and economic consequences.

The economic rationales for imposing curbs on reproduction concerned the effects on wage earners and rate payers. According to Mill, unless the poor were motivated to restrain their breeding, their lot would never improve. Mill considered Malthus's theory the foundation for all sound policy thinking on poverty, and he

vehemently defended the new Poor Law—although his Malthusianism, unlike Darwin's, was not associated with the celebration of competition (Winch, 2001). When he was seventeen, Mill wrote anonymous articles supporting artificial contraception and was briefly arrested for distributing birth control information to servant girls. (On learning of these youthful activities, Gladstone withdrew his support for a monument in Westminster Abbey). In the aftermath of that experience, Mill argued for sexual restraint, which he thought a correlate of better education for workingmen (Stafford, 1998, pp. 5, 14, 138). Commenting in *On liberty* on several European laws forbidding marriage where the parents lacked the means to provide their children with an appropriate education, Mill concluded that the legislation fell within the bounds of legitimate state power, although whether such restrictions were prudent depended on circumstances. He wrote: 'Such laws are interferences of the "State" to prohibit a mischievous act—an act injurious to others, which ought to be a subject of reprobation, and social stigma, even when it is not deemed expedient to super-add legal punishment'. A primary reason such acts harm others is their effect on wages, so that 'in a country either over-peopled, or threatened with being so, to produce children, beyond a very small number, with the effect of reducing the reward of labour by their competition, is a serious offence against all who live by the remuneration of their labour'. (Mill, 1977b, p. 304)

Economic arguments, including the effects on rate payers, are stated even more strongly in *Principles of political economy*, where having a large family for which one is unable to provide is characterized as one of 'the diseases of society'. Mill wrote (*pace* Frances Power Cobbe) that

every one has a right to live ... But no one has a right to bring creatures into life, to be supported by other people ... There are an abundance of writers and public speakers ... whose views of life are so truly brutish that they see hardship in preventing paupers from breeding hereditary paupers in the work-house itself. Posterity will one day ask, with astonishment, what sort of people it could be among whom such preachers could find proselytes. (Mill, 1965, pp. 364, 368)

Thus Mill's Malthusianism is one reason he favored reproductive restraints. But the value he placed on education (in both the narrow and broad sense) was an even more direct motivation. Mill believed in self-government in the realm of politics, industry and marriage, but also that people's capacities for self-government must be cultivated. As Bruce Baum has recently noted, Mill's hopes for a thoroughgoing program of democratic reform rested 'largely on the degree to which the masses could and would ultimately be educated for the freedom of self-government' and that what stands in the way of their acquiring the necessary mental cultivation are oppressive social arrangements. (Baum, 2003, p. 407; see also 2000)

The capacities that make democratic life possible (which include not just reasoning, imagination, judgment, and self-control, but sentiments such as the desire to be free) must be nurtured. According to Mill, 'There are certain primary elements and means of knowledge, which it is in the highest degree desirable that all human beings born into the community should be able to acquire during childhood' (Mill, 1965, p. 948). In *Utilitarianism*, Mill writes that the capacity for noble feelings 'is in most natures a very tender plant, easily killed, not only by hostile influences, but mere want of sustenance' (quoted in Baum, 2003, p. 408). Whether their potentiality is actualized depends on the quality of both institutions and

¹⁷ In a rather striking understatement, a recent biographer of Cobbe, commenting on her review of *Subjection*, notes that she 'was not an equalitarian liberal'. She also asks whether Cobbe understood 'the serious conflict between Darwin's biological determinism and Mill's emphasis on the social conditions that shaped gendered human natures?' (Mitchell, 2004, pp. 191–192). The answer is, yes, she certainly did.

social relationships.¹⁸ The barriers to achieving the capacity for self-government include bad teaching in schools, bad marriage laws, bad property arrangements, bad industrial management, and so forth.

They also include bad parenting. In his *Autobiography*, Mill wrote that the associationist doctrine of the formation of human character by circumstances demonstrates the ‘unlimited possibility of improving the moral and intellectual condition of mankind by education’ (Mill, 1924, p. 192). But he understood education broadly, not just as ‘schools and school books’. In ‘The condition of Ireland’, a series of newspaper articles published in 1846, Mill wrote that ‘the real effective education of a people is given them by the circumstances by which they are surrounded’ (quoted in Baum, 2003, p. 411). The primary educational institution is the family, which Mill characterized as a ‘school of moral cultivation’. Parents’ primary obligation is to ensure that their children are educated, ‘both in the sense of being “socialized” to take their place in the social and political order and in the sense of being “trained” to develop their capacities in preparation for their entry to the work world’ (Makus, 1996, p. 108). In *On liberty*, Mill wrote:

Hardly any one indeed will deny that it is one of the most sacred duties of the parents (or, as law and usage now stand, the father), after summoning a human being into the world, to give to that being an education fitting him to perform his part well in life towards others and towards himself. It still remains unrecognised, that to bring a child into existence without a fair prospect of being able, not only to provide food for its body, but instruction and training for its mind, is a moral crime, both against the unfortunate offspring and against society. (Mill, 1977b, p. 304)

That Mill was a passionate advocate of restraints on reproduction might seem surprising, and perhaps even more so the link between his willingness to intervene and the ‘radical democratic dimension of his thought’ (Baum, 2003, p. 405)—the view that all humans have the capacity to achieve autonomy (in the sense of an ability to think for themselves), that a democratically organized economy, society, and political system depends on their achieving this capacity, and that the family plays a crucial educative role in this process. One reason for surprise is that, as Hamburger argues, we have tended to view Mill only as an apostle of liberty and to ignore or explain away the many instances where, in the service of his program of moral regeneration, he favored less tolerance and greater control of behavior. Another is that we have come to equate constraints on breeding with eugenics, a term that would be stretched to the breaking point to encompass Mill, a vehement critic of the view that individual and group differences are innate. But it is perhaps an under-appreciated fact about the motivations for eugenics that many of its advocates were indifferent as to the etiology of mental defect. That is one reason so few of them abandoned their support for involuntary segregation or sterilization when it became clear that such policies would be much less effective than had generally been assumed (since the numbers of those affected would be replenished in each generation from the large population of invisible carriers; see Paul & Spencer, 1998). A common view was that the feeble-minded should be prevented from breeding because, irrespective of the cause of their condition, they were likely to make bad parents. The point is not that the argument from capacities to parent effectively are eugenic, but rather that such arguments predate the eugenics movement. They postdate it as well, arguably with little loss of potency. Although such reasoning is now often treated as *prima facie* absurd, few societies

are in fact neutral as to child-bearing by the cognitively disabled, nor as Siri Haavie (2001) has argued, are the pharmacological and other methods used to prevent pregnancy obviously more humane than those they replaced. What has certainly changed is the willingness explicitly to articulate arguments for the use of these methods. If contemporary attitudes and policies could in some respects be characterized as Milleian, the failure rationally to defend them surely could not.

5. Conclusion

A central theme of this essay has been the unexpected character of connections—both conceptual and political—that characterize nineteenth-century debates on inherited difference and reproductive responsibility. Thus today we generally associate approval of social controls on reproduction with a hereditarian position in what has come to be called the ‘nature–nurture’ debate. But John Stuart Mill, who attributed virtually all human mental and moral differences to education and training, considered reproduction by those who could not adequately support and educate offspring to constitute a crime against both their children and the larger society. Similarly, we have come to associate a hereditarian explanation of differences between men and women with opposition to feminism—an assumption belied by the case of Frances Power Cobbe, a fervent feminist who maintained that women are by nature intellectually men’s inferiors. And these represent only the most dramatic instances in this story of logics that do not match our own, and have, perhaps for that reason, only rarely been recognized. A next step would be to explore how beliefs that once seemed at least coherent to both their advocates and critics came to appear so incongruous to us.

Acknowledgements

Versions of this paper were presented at the Green College seminar series, University of British Columbia, Vancouver, 7 April 2005; the workshop on Eugenics: Interdisciplinary and Comparative Studies of Modernity, Nationalism, and Colonialism at the University of Southern California, Los Angeles, 25 March 2006; the conference on Darwin: Class, Race, and Gender Equality, Boston Colloquium for the History and Philosophy of Science, Boston University, 3 April 2006; the History and Philosophy of Science seminar series, Washington University, St Louis, 6 December 2006; and the conference on Eugenics, Sex, and the State, Clare College, University of Cambridge, 18–19 January 2007. Diane Paul is grateful to the other participants and audiences at these events for helpful comments, to Gavan Tredoux for calling her attention to Galton’s support of Mill’s candidacy for Parliament, to Evelyn Keller for alerting her to Mill’s 1823 *Lancet* article, to the Syndics of Cambridge University Library for permission to quote from unpublished Darwin correspondence, and especially to Margaret Schabas for her insightful reading and discussion of a draft of this essay.

References

- Baum, B. (2000). *Rereading power and freedom in J. S. Mill*. Toronto: University of Toronto Press.
- Baum, B. (2003). Millian radical democracy: Education for freedom and dilemmas of liberal equality. *Political Studies*, 51, 404–428.
- Blackburn, S. (2002). Meet the Flintstones. *New Republic*, 227, 28–33.
- Browne, J. (2002). *Charles Darwin: A biography, Vol. 2. The power of place*. New York: Knopf.
- Capaldi, N. (2004). *John Stuart Mill: A biography*. Cambridge: Cambridge University Press.

¹⁸ In his *System of logic*, Mill proposed a new ‘Science of the Formation of Character’, which he called ‘ethology’—an extension of the principles of associationist psychology to collectivities—although he never wrote the intended book.

- Carlyle, T. (1850). West India emancipation. *The Commercial Review of the South and West*, n.s., 2(4), 527–538. (Available at <http://cepa.newschooll.edu/het/texts/carlyle/carlodnq.htm>; first published as Occasional discourse on the negro question. *Fraser's Magazine for Town and Country*, 40, 1849, 670–679)
- Carlyle, T. (1888). *Reminiscences of my Irish journey in 1849*. London: Sampson Low, Marston, Searle, & Rivington.
- Carlyle, T. (1997). *Latter-day pamphlets, No. 1. The present time*. In Project Gutenberg. <http://www.gutenberg.org/etext/1140>. (First published London: Chapman & Hall, 1850)
- Carlyle, T. (1867). Shooting Niagara: And after? *Macmillan's Magazine*, 16, 674–687. (Available at <http://cepa.newschooll.edu/het/texts/carlyle/niagara.htm>)
- Cobbe, F. P. (1894). *Life of Frances Power Cobbe* (2 vols.). London: Richard Bentley & Son.
- Cobbe, F. P. (1995). *The subjection of women*. In A. Pyle (Ed.), *The subjection of women: Contemporary responses to John Stuart Mill* (pp. 54–74). Bristol: Thoemmes Press. (Review; first published 1869)
- Cobbe, F. P. (1972a). Hereditary piety. In idem, *Darwinism in morals and other essays* (pp. 35–63). Freeport, NY: Books for Libraries Press. (Review of *Hereditary genius*; first published 1870)
- Cobbe, F. P. (1972b). Darwinism in morals. In idem, *Darwinism in morals and other essays* (pp. 1–33). Freeport, NY: Books for Libraries Press. (Review of *The descent of man*; first published 1871)
- Curtis, L. P. (1968). *Anglo-Saxons and Celts: A study of anti-Irish prejudice in Victorian Britain*. Bridgeport, CT: New York University Press.
- Darwin, C. G. (1959). Some episodes in the life of Charles Darwin. *Proceedings of the American Philosophical Society*, 103, 609–615.
- Darwin, C. R. (1958). *The autobiography of Charles Darwin, 1809–1882: With original omissions restored* (N. Barlow, Ed.). New York: Harcourt Brace.
- Darwin, C. R. (2004). *The descent of man, and selection in relation to sex* (2nd ed., final printing) (J. Moore, & A. Desmond, Intro.). London: Penguin Books. (First published 1879)
- Descartes, R. (2006). *René Descartes: A discourse on the method* (I. MacLean, Trans.). Oxford: Oxford University Press. (First published 1637)
- Dutton, G. (1982). *In search of Edward John Eyre*. South Melbourne: The Macmillan Company of Australia.
- Engels, F. (1993). *The condition of the working class in England* (D. McLellan, Ed.). Oxford: Oxford University Press. (First published 1892)
- Galton, F. (1865). Hereditary talent and character. *Macmillan's Magazine*, 12, 157–166, 318–327.
- Galton, F. (1869). *Hereditary genius: An inquiry into its laws and consequences*. London: Macmillan.
- Galton, F. (1874). *English men of science: Their nature and nurture*. London: Macmillan.
- Greg, W. R. (1868). On the failure of 'natural selection' in the case of man. *Fraser's Magazine*, 68, 353–362.
- Haavie, S. (2001). The Norwegian Sterilization Act of 1997: A preliminary study of how it has been practiced and of some issues raised by previous and contemporary practice in the field. Conference on Eugenics and Sterilization in Scandinavia: Changing policies and practices 1934–2000. Norwegian Academy of Letters and Sciences, 14–16 December.
- Hall, C. (2002). *Civilising subjects: Colony and metropole in the English imagination*. Chicago: University of Chicago Press.
- Hall, C., McClelland, K., & Rendell, J. (2000). *Defining the Victorian nation: Class, race, gender and the Reform Act of 1867*. Cambridge: Cambridge University Press.
- Hamburger, J. (1999). *John Stuart Mill: On liberty and control*. Princeton: Princeton University Press.
- Jacobs, L. A., & Vandewetering, R. (Eds.). (1999). *John Stuart Mill's The subjection of women: His contemporary and modern critics*. Delmar, NY: Caravan Books.
- John Stuart Mill for Westminster: Committee for securing the election of Mr. John Stuart Mill. (1865). *The Times*, 27 May, 5.
- Kingsley, C. (1877). *Charles Kingsley, his letters and memories of his life* (ed. by his wife) (2 vols.). London: H. S. King.
- Kinzer, B. L. (1984). J. S. Mill and Irish land: A reassessment. *Historical Journal*, 27, 111–127.
- Kinzer, B. L. (2001). *England's disgrace? J. S. Mill and the Irish question*. Toronto & Buffalo: University of Toronto Press.
- Leighton, M. E. (2005). 'The Irish through British eyes'. *Victorian Periodicals Review*, 38, 423–442.
- Lengel, E. G. (2002). *The Irish through British eyes: Perceptions of Ireland in the famine era*. Westport, CT: Praeger.
- Levy, D. M., & Peart, S. J. (2001). The secret history of the dismal science: Economics, religion, & race in the 19th century, Pt. 1. In *The library of economics and liberty*. <http://www.econlib.org/LIBRARY/Columns/LevyPeartdismal.html>.
- Makus, I. (1996). *Women, politics, & reproduction: The liberal legacy*. Toronto: University of Toronto Press.
- McWilliams Tullberg, R. (1998). *Women at Cambridge* (rev. ed.). Cambridge: Cambridge University Press.
- Mill, J. S. (1850). The negro question. *Fraser's Magazine*, 41, 25–31.
- Mill, J. S. (1924). *Autobiography of John Stuart Mill* (J. J. Coss, Pref.). New York: Columbia University Press. (First published 1873)
- Mill, J. S. (1965). *Principles of political economy, with some of their applications to social philosophy*. In idem, *Collected works of John Stuart Mill, Vols. 2–3* (J. M. Robson, Ed.). Toronto: University of Toronto Press; London: Routledge & Kegan Paul. (First published 1848)
- Mill, J. S. (1969a). Nature. In idem, *Collected works of John Stuart Mill, Vol. 10. Essays on ethics, religion and society* (J. M. Robson, Ed.) (pp. 373–402). Toronto: University of Toronto Press; London: Routledge & Kegan Paul. (First published in *Three essays on religion*, 1874)
- Mill, J. S. (1969b). Utility of religion. In idem, *Collected works of John Stuart Mill, Vol. 10. Essays on ethics, religion and society* (J. M. Robson, Ed.) (pp. 403–428). Toronto: University of Toronto Press; London: Routledge & Kegan Paul. (First published in *Three essays on religion*, 1874)
- Mill, J. S. (1974). *A system of logic ratiocinative and inductive, Bks. I–III*. In idem, *Collected works of John Stuart Mill, Vol. 7* (J. M. Robson, Ed.). Toronto: University of Toronto Press; London: Routledge & Kegan Paul. (First published 1862)
- Mill, J. S. (1977a). Civilization. In idem, *Collected works of John Stuart Mill, Vol. 18. Essays on politics and society, Pt. I* (J. M. Robson, Ed.) (pp. 117–148). Toronto: University of Toronto Press; London: Routledge & Kegan Paul. (First published 1835)
- Mill, J. S. (1977b). On liberty. In idem, *Collected works of John Stuart Mill, Vol. 18. Essays on politics and society* (J. M. Robson, Ed.) (pp. 213–310). Toronto: University of Toronto Press; London: Routledge & Kegan Paul. (First published 1859)
- Mill, J. S. (1986). Effects of gambling. In idem, *Collected works of John Stuart Mill, Vol. 22. Newspaper writings, December 1822–July 1831* (A. P. Robson, & J. M. Robson, Eds.) (pp. 77–79). Toronto: University of Toronto Press; London: Routledge & Kegan Paul. (First published 1823)
- Mill, J. S. (1988). *The subjection of women* (S. M. Okin, Ed.). Indianapolis: Hackett. (First published 1859)
- Mitchell, S. (2004). *Frances Power Cobbe: Victorian feminist, journalist, reformer*. Charlottesville: University of Virginia Press.
- Paul, D. B., & Spencer, H. (1998). Did eugenics rest on an elementary mistake? In D. B. Paul, *The politics of heredity* (pp. 117–132). Albany: SUNY Press.
- Peart, S. J., & Levy, D. M. (2005). *The 'vanity of the philosopher': From equality to hierarchy in post-classical economic thought*. Ann Arbor: University of Michigan Press.
- Pinker, S. (2002). *The blank slate: The modern denial of human nature*. New York: Viking.
- Preston, S. T. (1880). Evolution and female education, *Nature*, 22, 485–486.
- Richards, E. (1983). Darwin and the descent of woman. In D. Oldroyd & I. Langham (Eds.), *The wider domain of evolutionary thought* (pp. 57–111). Dordrecht: D. Reidel.
- Richards, E. (1997). Redrawing the boundaries: Darwinian science and Victorian women intellectuals. In B. Lightman (Ed.), *Victorian science* (pp. 119–142). Chicago: University of Chicago Press.
- Richards, R. J. (1987). *Darwin and the emergence of evolutionary theories of mind and behavior*. Chicago: University of Chicago Press.
- Schabas, M. (1997). Victorian economics and the science of the mind. In B. Lightman (Ed.), *Victorian science* (pp. 72–93). Chicago: University of Chicago Press.
- Schabas, M. (2005). *The natural origins of economics*. Chicago: University of Chicago Press.
- Semmel, B. (1962). *Jamaican blood and Victorian conscience: The Governor Eyre controversy*. Westport, CT: Greenwood Press.
- Smith, A. (1981). *An inquiry into the nature and causes of the wealth of nations, Vol. 1* (R. H. Campbell, A. S. Skinner, & W. B. Todd, Eds.). Indianapolis: Liberty Classics. (First published 1776; this ed. first published Oxford: Clarendon Press, 1976)
- Stafford, W. (1998). *John Stuart Mill*. New York: St. Martin's Press.
- Tenniel, J. (1866). Physic for Fenians. *Punch*, 51(8 December), 231.
- Tenniel, J. (1867). Mill's logic; or, Franchise for females. *Punch*, 30 March, 129.
- Waller, J. C. (2001). Ideas of heredity, reproduction and eugenics in Britain, 1800–1875. *Studies in History and Philosophy of Biological and Biomedical Sciences*, 32, 457–489.
- Winch, D. (2001). Darwin fallen among political economists. *Proceedings of the American Philosophical Society*, 145, 415–437.
- Zastoupil, L. (1983). Moral government: J. S. Mill on Ireland. *Historical Journal*, 26, 707–717.
- Zastoupil, L. (1988). J. S. Mill and India. *Victorian Studies*, 32, 31–54.