

# Henry Fawcett

## His Role in the Darwinian Revolution

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*This paper examines the role played by Henry Fawcett in the crucial years immediately following the publication of Charles Darwin's Origin of Species. Whilst the work of other economists influenced Darwin's thinking in varying degree, and although Darwin had attracted eminent scientific support (as well as opposition), it was Fawcett who played a not insignificant, but largely neglected, role in defending the methodological integrity of Darwin's work, and in reassuring Darwin of the correctness of his method*

So far as the contributions of individual political economists to the development of Darwin's thought are concerned, Malthus is much commented upon (although I personally incline to the dismissive view of Schumpeter *a propos* the significance of his contribution<sup>1</sup>), as are the less problematic general contribution of Smith and the more particular contribution of Fleeming Jenkin.<sup>2</sup> The literature appears, however, to be largely silent on the small but, I would argue, significant role played by Henry Fawcett [1833 - 1884], Marshall's predecessor in the Cambridge chair.<sup>3</sup>

His loss of sight in a shooting accident at the age of 25 served to deter neither his intellectual curiosity nor his reformist zeal (he was elected into the Cambridge chair in 1863, as a Liberal M.P. in 1865, and served as Postmaster-General 1880-84), and these characteristics were to lead to his attendance at the now-famous meeting of the British Association for the Advancement of Science in 1860 at which Thomas Huxley defended, and the Bishop of Oxford (Samuel Wilberforce), attacked, Charles Darwin's *Origin of Species*, published in November of the previous year.

Darwin was first to hear of Fawcett through his son William, as he recounted in a letter to Huxley on 30 July (1860):

Wolstenholme (tutor of Christ's Coll) told me (i.e. my son William last night); that two Cambridge men, one a blind man named Fawcett, were at the Brit. Assoc.; and after the meeting they happened to be near the B. of Oxford and the one asked Fawcett whether he thought the Bishop had ever read the Origin; and the blind man shouted out in a loud voice "Oh no. I would swear he has never read a word of it." The Bishop bounced round with an awful scowl and was just going to pitch into him, when he saw that he was blind, and said nothing. [Correspondence 1860: 305]

This was on 30 June; by December, Fawcett had had published a lengthy (c. 6000 words) and cogent article -- "A Popular Exposition of Mr. Darwin on the Origin of Species" -- in *Macmillan's Magazine*. This alone is worthy of attention, but even more significant is the effect which this article had on Darwin himself, as is revealed in the subsequent correspondence between Darwin and Fawcett following the appearance of the article, and then again after Fawcett's paper ("*On the Method of Mr. Darwin in his Treatise on the Origin of Species*") delivered at the meeting of the British Association in September of the following year.<sup>4</sup>

Fawcett's tone on both occasions was conciliatory and reasonable, in an atmosphere in which the appearance of the *Origin* had ignited controversy between theists and agnostics, Conservatives and Liberals, reactionaries and reformers, and in which not a few hidden agendas operated under cover of "scientific discussion".<sup>5</sup>

He [Fawcett] states with his usual firmness the true logical position of Darwin's theory; distinguishing carefully between a fruitful hypothesis and a scientific demonstration; exhibiting the general nature of the argument and the geological difficulty with clearness, and taking some pains to prove that religion is in no danger from Darwinism. [Stephen 1885: 99]

The article opens by acknowledging the controversy -- "A Darwinite and an anti-Darwinite are now the badges of opposed scientific parties" -- and, after further acknowledging those scientists of repute who are in the respective camps (the Bishop of Oxford is, of course, not included here), continues:

We shall endeavour most carefully to avoid the partiality of partisanship, and, as our object is neither to attack nor defend, but simply to expound, we shall have no necessity to assume the tone of ungenerous hostility exhibited in the *Edinburgh Review* [by Richard Owen] or to summon from theology the asperities contained in the *Quarterly Review* [by Bishop Wilberforce]. Such may be appropriate to controversy, but can give those who are unacquainted with Mr. Darwin's work no idea of his theory, which, all must agree, has been stated with the most perfect impartiality, and is the result of a life of most careful scientific study.<sup>6</sup>

He then introduces a fundamental problem:

The common assumption that species are infertile with each other, and that the descendants of any particular species always belong to that species, at once suggests the difficulty: -- How can a new species be introduced into the world.

Yet, Fawcett continues, no-one disputes that many species have become extinct, and that new species have appeared at various times in the geological record. If, then, we admit this *and* persist with the "infertility" definition of species (although he has earlier warned that this cannot admit of testing with respect to extinct species), then only one alternative explanation is possible:

It therefore becomes necessary to suppose that the same effort of Creative Will, which originally placed life upon this planet, is repeated at the introduction of every new species, and thus a new species has to be regarded as the offspring of a miraculous birth.

His argument then proceeds in a most ingenious fashion. He begins by reminding the reader that such Creative Will had similarly been supposed to account for the motion of the heavenly bodies until Newton had "enunciated his law of gravitation", thus dispensing with the need, in astronomy, for such "creative fiats". Darwin, he asserts, has done as much for biology, and his method is perfectly in accord with that employed by Newton. But first, there is the matter of supposed "scientific" argument, as advanced by the anti-Darwinites, to be got out of the way:

Every hostile criticism repudiates [Darwin's] theory because, as it is asserted, it is not based upon a rigorous induction. There is much philosophic cant about this rigorous induction. An individual who is supremely ignorant of science finds no difficulty in uttering some such salvo as, "This is not in the true Baconian method." Such expressions, which too frequently are mere meaningless phrases, were repeated *ad nauseam* at the British Association. They are revived in an article on Mr. Darwin in the *Quarterly Review* [by Wilberforce]. There we find it reiterated, "This is not a true Baconian induction." In reply to all this, it should

at once be distinctly stated that Mr. Darwin does not pretend that his work contains a proved theory, but merely an extremely plausible hypothesis.

Newton is now referred to again, and his methods briefly explained, leading to a challenge, a rhetorical question, and a statement of what Fawcett considers to be the correct "scientific method", and how Darwin has indeed followed this:

Those who attack the philosophic method of Mr. Darwin ought explicitly to state how they would establish a theory on the origin of species by what they term a rigorous induction. Is such an example to be found in the doctrine of creative fiat? The greatest of logicians has remarked, "The mode of investigation which, from the proved inapplicability of direct methods of observation and experiment, remains to us as the main source of the knowledge we possess, or can acquire, respecting the conditions and laws of recurrence of the more complex phenomena, is called in its most general expression the deductive method, and consists of three operations -- the first, one of direct induction; the second, of ratiocination; and the third, of verification." The method here indicated Mr. Darwin most rigorously observed.

The "greatest of logicians" was, of course, none other than John Stuart Mill, from whose *Logic* Fawcett quotes.

Darwin had been alerted to the appearance of Fawcett's article -- as he writes on 4 December (1860) to Charles Lyell: "I hear that there is article in Macmillan on the *Origin*"<sup>7</sup> -- and promptly began reading it, for on the following day (although he had not yet read the whole article) he writes to Thomas Huxley of the point which had most claimed his attention:

I have read few first pages of the Macmillan article, & it pleases me that he quotes Mill's *Logic* & declares that I have philosophised in right spirit, & that all the talk about Baconian induction is cant & rubbish -- [*Correspondence* 1860: 514]<sup>8</sup>

But who was this Fawcett, of whom Darwin had heard previously only as "a blind man named Fawcett" who, by his son William's second-hand account, had so annoyed Wilberforce after the 30 June meeting? On 8 December Darwin turns to William for more information:

....my curiosity is excited about the blind Fawcett by his capital article in Macmillan on *The Origin*. Can you find out anything about him. Did he take high degree? What county does he come from? Is he rich? [*Correspondence* 1860: 519]

The answers to these questions, so characteristic of Darwin's class and time, would have been provided by William when he returned home on 13 December for the Christmas holidays<sup>9</sup>. On the next day Darwin was able to write to Asa Gray of "a nice, but too flattering article on the *Origin* by a young man, whom many think most highly of."<sup>10</sup> It would seem, then, highly probable that it was at this time that Darwin wrote (in a letter now lost<sup>11</sup>) to Fawcett to tell him of his high opinion of the article. On 16 July of the following year Fawcett replies:

I feel that I ought not to have so long delayed writing to thank you for your very kind letter to me about my article on your Book, in Macmillan's Magazine. I was particularly anxious to point out that the Method of Investigation pursued was in every respect, philosophically correct; I was spending an evening last week with my friend Mr. John Stuart Mill and I am sure you will be pleased to hear from such an authority that he considers that your reasoning throughout is in the most exact accordance with the strict principles of Logic. He also says, the Method of investigation you have followed is the only one proper to such a subject. [*Correspondence* 1861: 204]<sup>12</sup>

This was precisely the sort of thing which Darwin needed to hear. He wrote immediately (20 July) in reply:

You could not possibly have told me anything which would have given me more satisfaction than what you say about Mr. Mill's opinion. Until your review appeared I began to think that perhaps I did not understand at all how to reason scientifically. [*Correspondence* 1861: 212]

In the following September Darwin received newspaper cuttings reporting Fawcett's paper at the British Association meeting, and again wrote immediately to him:

I wondered who had so kindly sent me the newspapers, which I was very glad to see; and now I have to thank you sincerely for allowing me to see your MS. It seems to me very good and sound; though I am certainly not an impartial judge. You will have done good service in calling the attention of scientific men to means and laws of philosophising. As far as I could judge by the papers, your opponents were not worthy of you. [*Correspondence* 1861: 269<sup>13</sup>]

To understand properly Darwin's enthusiastic welcome of Mill's endorsement it is necessary to appreciate that at this crucial time Darwin needed just such support and reassurance as Fawcett was able to provide, for Darwin was himself not beyond wavering. An instance of this is his use of the expression "the Creator", which was employed seven times in the first edition<sup>14</sup>, but on each occasion as a device for mocking theological argument (explicit, or dressed up as "science") as for example in:

Have we any right to assume that the Creator works by intellectual powers like those of man? (p. 188)

and

But many naturalists think that something more is meant by the Natural System; they believe that it reveals the plan of the Creator; but unless it be specified whether order in time or space, or what else is meant by the plan of the Creator, it seems to me that nothing is thus added to our knowledge. (p. 413)

With one minor exception these seven uses remained as such through all editions.<sup>15</sup> But elsewhere pragmatic scientific caution was to be thrown away -- perhaps, to blunt anticipated theological criticism, or as is more likely, from consideration of his wife's religious sensibilities<sup>16</sup> -- as in the notorious change to the last paragraph of the *Origin*<sup>17</sup> between the first and second editions, where "There is grandeur in this view of life, with its several powers, having been originally breathed into a few forms or into one;...." was changed to read: "...into a few forms or into one by the Creator;...". Darwin clearly felt keenly the nature of the position which he had taken in his great work.

Darwin, meticulous observer and prodigious collector of facts that he undoubtedly was, had never been comfortable with theory, nor confident in his role: he would have seen himself as "naturalist", rather than "scientist". Much later, in 1876 at the age of 67, and in what was intended to be an unpublished *Autobiography*, he was prepared to put a retrospective gloss on his work:

In October 1838. . . I happened to read for amusement Malthus on *Population* and being well prepared to appreciate the struggle for existence which everywhere goes on from long-continued observation of the habits of animals and plants, it at once struck me that under these circumstances, favourable variations would tend to be preserved and unfavourable ones to be destroyed. The result of this would be the formation of new species. *Here, then, I had at last got a theory by which to work*; but I was so anxious to avoid prejudice, that I determined not for some time to write even the briefest sketch of it. [F. Darwin (1892) 1958: 43; emphasis added]

With all due deference to so great a man, not everyone has accepted Darwin's account at face value. His son Francis (a scientist himself) was, at least on the alleged role of Malthus, not entirely convinced of the accuracy of his father's recollection:

I can hardly doubt that with his knowledge of the interdependence of organisms and the tyranny of conditions, his experience would have crystallized out into a "theory by which to work" even without the aid of Malthus. [F. Darwin 1909: xvi]

Even less accepting in more recent times have been Francis Hitching ("Darwin's autobiography, alas, is full of humbug" [Hitching 1982: 245]) and Stephen Jay Gould ("Charles Darwin's autobiography. . . may be the most misleading personal document ever published by a scientist." [Gould 1992: 54]).

That the good opinion of Mill should have meant so much to Darwin is, then, perfectly understandable given the latter's uncertainty as to method, and the fact that for every eminent scientist of the day supporting him, one equally eminent could be found opposing him (the Bishop of Oxford could easily be dismissed from consideration here, as he was by Fawcett). The attraction of Mill to Fawcett derived from more than just Mill's pre-eminence as a logician at the time, as Phyllis Deane explains:

At a time when most young Cambridge Fellows would have been extending their intellectual horizons into other disciplines and filling the yawning gaps in their exam-dominated undergraduate education, Henry Fawcett found himself dependent on being read to by others and on having to dictate rather than to write out his arguments. Partly from sheer force of circumstances, then, and partly, no doubt, from the nature of his own intellectual interests, he went on to develop his talents within relatively narrow confines. He depended almost exclusively on Mill's *Principles of Political Economy* for the theoretical framework of his economic analysis, though he was familiar with Ricardo's *Principles* and Malthus's *Essay on Population*. He accepted Mill's *Logic* as the last word on scientific method and he was wholly convinced by Mill's writings on political philosophy. [Deane 1989: 94]

Fawcett, whilst undoubtedly admiring of Mill and, for reasons which Deane makes clear, greatly indebted to him for his understanding of political economy, logic and political philosophy, did not follow him uncritically on all matters. On details of the question of proportional representation in parliament, for example, the two were eventually to disagree (Goldman: "to Mill's consternation"), but this was in 1864. Goldman, however, brings this later disagreement forward to the earlier period, the events of which have been given above, and places on them what I suggest is an erroneous interpretation:

Thus a year after the famous confrontation at Oxford between Bishop Wilberforce and T.H. Huxley, Fawcett tried to align himself at the following British Association meeting in Manchester in 1861 with the party of progress in a paper 'On the method of Mr. Darwin in his treatise on the Origin of Species'. But the difficulties involved in adopting a new mentor while remaining faithful to an older one got the better of him, and many of the audience may have been surprised to discover from Fawcett that 'Mr. Darwin had strictly followed the rules of the deductive method as laid down by John Stuart Mill.' [Goldman 1989: 156]

Goldman's implication is that Fawcett's address was his first statement in defence of Darwin, but in fact only those members of the audience who had not read his article of the previous year in *Macmillan's Magazine* could have been surprised at anything which Fawcett said at the 1861 meeting; and, far from either the article or the paper being an attempt to please "a new mentor while remaining faithful to an older one" -- with its suggestion of divided loyalty on Fawcett's part -- the evidence is clearly that Fawcett and Mill, albeit not always in complete agreement on matters of detail, were on the best of terms, and that far from falling out, the two continued to work closely together as parliamentary colleagues:

.....he appeared as a supporter of Mill on the questions which they both had had most at heart. He spoke as a supporter of Mill's amendment for admitting women to the franchise, which was rejected by 196 to 73 on May 20, 1867; and, with Mill, he supported a motion for a partial application of the principle of cumulative voting brought forward by Mr. Lowe (July 5), and rejected by 314 to 173. ....[On the eventual carriage in 1868 of Fawcett's proposal for election deposits, as a step towards putting the expenses of returning officers upon the rates, and for discouraging candidates seeking only notoriety through nomination] Mill spoke soon afterwards of the 'profound satisfaction' with which this vote had been received throughout the country, and declared that if the Government were wise they would adopt this proposal themselves. [They were not, and did not. See, Stephen 1885: 226 - 7]

Fawcett, in the time between the 1860 meeting of the B.A. at Oxford and its 1862 meeting in Cambridge, had won the respect and friendship of the "Darwinians": during his stay in Cambridge for the week of the conference Thomas Huxley (who was chairing one of the sessions) stayed as Fawcett's guest at Trinity Hall<sup>18</sup>. Fawcett appears however not to have taken any further part in the evolutionary debate as such beyond the events of 1860-61, and is more generally remembered today for his work as parliamentarian and political economist. It would be wrong to exaggerate Fawcett's role in the Darwinian Revolution (Darwin was later to acknowledge a greater debt to Fleeming Jenkin's 1867 paper<sup>19</sup>), but equally wrong to neglect it, for where it really mattered, in those crucial early years, Darwin had indeed good reason to be grateful for the benefit of some of "the heroic energy of this eminent man [Fawcett]", as Schumpeter was later to describe him.<sup>20</sup>

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## Notes

- <sup>1</sup> I am afraid . . . that the service rendered by economics to the evolution of the Darwinian doctrine bears some analogy to the service rendered to Rome by the celebrated geese. [Schumpeter 1954: 446]
- <sup>2</sup> For Smith and Jenkin see, respectively, Gould 1993 and 1991 (albeit that Jenkin is only identified properly as a political economist as well as an engineer in a postscript to the original essay). Schumpeter does not mention Darwin in connection with Fawcett.
- <sup>3</sup> For the friendship between the two, and the influence of Fawcett on Marshall, see Groenewegen 1995: *passim*.
- <sup>4</sup> The letters between Darwin and Fawcett are reprinted, with notes, in *The Correspondence of Charles Darwin: Volume 9 1861*, hereinafter referred to as *Correspondence* 1861. The article and almost the complete correspondence are reprinted in Hull 1973: 276 - 291. The complete correspondence, with biographical material, is given in Darwin and Seward (1903) 1972: 189-190, 194-6. Leslie Stephen [Stephen 1885: 98-103] gives the complete text of Darwin's letter of 18.9.1861, and excerpts from others.
- <sup>5</sup> The *Report* of Fawcett's paper begins: He said that, as he could not conform to what he believed was the rule, that communications should be read (Mr. Fawcett being blind), he would promise to keep as close to his subject as though he had written his paper. The title he originally fixed upon was, "That the method of investigation pursued by Mr. Darwin, in his *Treatise on the Origin of Species*, is in strict accordance with the principles of logic." He feared that he might be charged with presumption in attempting to say anything on Mr. Darwin's great work, which had already engaged the attention of the most accomplished naturalists of the

day. He had been assured that the discussion on the subject at the last Meeting of the Association had never been surpassed in the interest it excited or in the talent which it called forth. Indeed, the work had divided the scientific world into two great sections; Darwinite and anti-Darwinite were almost the badges of opposite parties [Fawcett 1861: 141-2]

Since from this point the paper was essentially a restatement in more condensed form of the arguments advanced in the earlier 1860 article, it is with the latter that I will deal here.

Fawcett 1860, as reproduced in Hull 1973, who supplies the identifications in square brackets. It is to be noted that the two protagonists singled out for mention were both "anti-Darwinites". Desmond and Moore [1991: 498] continue their account of Fawcett and Wilberforce at the B.A. meeting: "One hopes Sam read the *Origin*, because he was paid £60 to write it up in the *Tory Quarterly*.....[His article] was slick."

*Correspondence* 1860: 513.

Darwin's annotated copy of the article has been preserved, and is in the Darwin Pamphlet Collection, University of Cambridge Library. [*Correspondence* 1861: 204 n. 2]

*Correspondence* 1860: 520 n. 4

*Correspondence* 1860: 528.

*Correspondence* 1861: 204 n. 2

"In the course of 1860 he [Fawcett] made the personal acquaintance of Mill, with whom he had been in correspondence during the early part of that year....." [Stephen 1885: 187]. Thus, this letter may well refer to their first meeting. It is also presumably to this letter, unknown to him at the time, that Leslie Stephen refers when he writes: "Fawcett has told me that Mill had said to him that the 'Origin of Species' was admirable as a piece of thorough logical argument (I forget the precise phrase), and I presume that Fawcett had repeated this to Mr. Darwin." [Stephen 1885: 100]

Reports of Fawcett's address had been carried by the *Manchester Examiner* and the *Manchester Guardian* on 9 September. [*Correspondence* 1861: 270 n. 2]

Barrett *et al.* 1981: 166

The minor change was made first in the fifth (1869) edition, where "may say" replaces "will say" in "He who believes in separate and immutable acts of creation will say that in these cases it has pleased the Creator.....". See, Peckham 1959: 336 for this change, and "the Creator" elsewhere on 343, 344, 648, 677-8 and 758.

Richard Dawkins remarks on "Darwin's gradual loss of faith, which he downplayed for fear of upsetting his devout wife Emma" [Dawkins 1995: 95]. Desmond and Moore (1991) deal extensively with Emma's religious convictions.

Darwin had moved quickly: the dates of the first and second editions were Nov. 26 and Dec. 26 (1859) respectively. For these dates and the change see, Peckham 1959: 24, 759.

Huxley 1900 (Vol. I): 198.

"Fleeming Jenkin has given me much trouble, but has been of more real use to me than any other essay or review." [Darwin to J.D. Hooker, 16.1.1869. Hull 1973: 302]

Schumpeter 1954: 533.

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