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Quaker Responses to Darwin

*By Geoffrey Cantor**

IN HIS SEMINAL WORK *Darwin and the General Reader* (1958), Alvar Ellegård surveyed the British periodical press over the period 1859 to 1872 in order to discover how Darwin's theory had been received in a hundred publications reflecting a wide range of social, religious, and political opinion. He paid attention both to the amount of space devoted to Darwinian topics and also to each periodical's stance with respect to such issues as the theory of natural selection and the naturalistic account of the formation of humankind. In each case he summarized his findings using a numerical scale. Among the journals he examined were two Quaker periodicals—the *Friend* and the *Friends' Quarterly Examiner*—from which he concluded that Quakers paid little attention to Darwin's theory and that the few references that appeared were generally antagonistic to the new theory. The quotations Ellegård selected confirmed this judgment; for example, in characterizing the *Friend* as anti-Darwinian he cited an 1861 entry in which a reviewer regretted the large number of converts to Darwinism, exclaiming, "Alas, their name is legion." Despite the somewhat higher scores achieved by the *Friends' Quarterly Examiner*, Ellegård did not adequately distinguish between these two periodicals, which reflected significantly different sections within the British Quaker community. Rather surprisingly, he also lumped Quakers with Congregationalists, Baptists, and certain other dissenting groups that appear to have responded similarly to Darwin's theory but shared little of religious significance with Quakers. In contrast to these denominations, Unitarians scored higher but Methodists were lower still on Ellegård's scale.¹

However impressive his analysis, Ellegård's conclusions conflict with the recollections of two scientists who portrayed initial Quaker responses in very different terms. Writing in 1872, the eminent lawyer and amateur botanist Edward Fry reflected on how, as a Quaker, he had responded to the publication of Darwin's book thirteen years earlier. It had, he recounted,

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¹ Alvar Ellegård, *Darwin and the General Reader: The Reception of Darwin's Theory of Evolution in the British Periodical Press, 1859–1872* (Gothenburg, Sweden: Univ. of Gothenburg, 1958; rev. ed., Chicago: Univ. of Chicago Press, 1990). The quoted passage, which appears on p. 57, is taken from a review of the *Origin* in the *Friend*, n.s. 1 (1861):212. In the original the quotation—"and alas their name is legion!"—is somewhat less dramatic.

caused great uneasiness in the minds of many good people, who felt . . . Darwin's teaching, and still more the suggestions which arose from his teaching, to be inconsistent with the teachings of the Bible and their hopes of immortality for the human race. I gave a good deal of attention, as every one did, to those new views . . . ; but I did not, like so many good people, feel distressed at the influence of Darwin's theory upon my religious beliefs.²

Henry Marriage Wallis, a corn, seed, and coal merchant from Reading who wrote and lectured extensively on natural history, provides us with a second dissenting voice. Writing in the *Friends' Quarterly Examiner* in 1890, he praised Friends for not having taken up arms against the theory of evolution; instead, Quakers had "stood by the counsel of Gamaliel [who advocated caution] and [now] had little to regret."³

In contrast to Fry's patent enthusiasm for the new theory and Wallis's recollection of a judicious reaction, the reviewers cited by Ellegård seem to have dismissed Darwin's theory and refused to pay it much attention. Moreover, while Fry considered that no major point of religious principle was at stake, the authors cited by Ellegård apparently endorsed the view that science and religion were in conflict. It therefore appears that Ellegård's thesis does not account for the reactions of those British Quakers whose views are recorded in print. Indeed, we must be careful not to accept the reviewer(s) cited by Ellegård or the comments of Fry or of Wallis or of any other writer as speaking on behalf of the whole Quaker community. Not surprisingly, there was no consensus on this issue, nor did any mechanism exist for imposing any specific position. Indeed, like most other aspects of science, the theory of evolution was never explicitly discussed at the Yearly Meetings that deliberated on matters of principle and practice. Thus, in contrast to, say, the Quaker position on slavery or the role of the clerk in Monthly Meetings, attitudes to Darwin's theory were not controlled centrally. Nevertheless, reactions to Darwin can be mapped onto the broader canvas of Quaker history.

Before proceeding we must note two further difficulties with Ellegård's thesis. First, he examined only those reviews published before 1872, whereas the Quaker engagement with evolutionary ideas should be considered over a much longer time scale—including Wallis's comments from 1890. Perhaps there was no final terminus to the topic. However, some of the most important moves were made after 1872, and later in this discussion I shall note two significant contributions to the 1895 Manchester Conference, which Quaker historians have generally taken to be a milestone in their movement's history. Second, it would be incorrect to portray Quakerism as socially and doctrinally stagnant during the period under discussion. Instead we must pay close attention to the changes that occurred in the British Quaker community. Most importantly from the 1830s to the mid-1880s the movement was dominated by evangelicals, although a minority resisted this trend. Some opponents of evangelicalism were disowned or resigned their membership, while others remained dissatisfied, sometimes arguing for a more liberal conception of Quakerism. Evolutionary ideas were to play a significant role in the development and ultimate domi-

² Edward Fry, quoted in Agnes Fry, *A Memoir of the Right Honourable Sir Edward Fry, 1827–1918* (London: Oxford Univ. Press, 1921), p. 63. See also Fry's articles in the *Spectator* 45 (1872):1137–8, 1168–70, and 1201.

³ Henry Marriage Wallis, "Darwinism," *Friends' Quarterly Examiner* (hereafter cited as FQE) 24 (1890):246–57, on p. 250.

nance of liberal Quakerism in Britain during the last four decades of the nineteenth century.⁴

The *Origin of Species* was published at a critical moment in British Quaker history. During the late 1850s it was widely recognized that the movement was in danger of terminal decay, since membership was on the decline, as was the power and influence of the Quaker community. Radical steps were required if Quakerism were to be rescued. One concerned member proposed a prize competition for the best essays to engage this pressing problem. That approximately one hundred and fifty essays were received is indicative of the widespread concern about the movement's fate. The judges—three eminent non-Quakers—announced their decision in August 1859, and the two successful essays (both authors receiving £150) were soon published and avidly discussed. In his winning entry John Stephenson Rowntree provided a long-term statistical analysis of membership and identified several ways in which Quakerism had failed its original promise. He identified problems with both the belief system and the movement's structural organization and was particularly critical of the current emphasis on the "indwelling spirit," which, he claimed, had led to such problems as the neglect of prayer and the lack of instruction of the young. Likewise, he believed that the rigidity of the Society's organization had resulted in many being forced out owing to infringements of its rules, especially regarding marriage to non-Quakers. He therefore suggested that new rules be adopted on intermarriage and on certain other topics.⁵

Although many of Rowntree's proposals were accepted, the prescription offered by the other prizewinner is also relevant. Thomas Hancock, an Edinburgh-trained physician, argued that Quakerism in Britain had run its natural course and should merge with mainstream Anglicanism, which, he argued, had retained its evangelical zeal and vitality.⁶ Hence, just when the first readers were opening their copies of the *Origin*, Quakers were contemplating the sick patient and discussing in somber tones the possible treatments. This was not the best time to take a calm, measured view of a scientific text causing uproar in the outside world but rather a time to turn inward and contemplate the changes necessary to revitalize the Quaker community, or even to abandon the project started by George Fox and other Friends two centuries earlier.⁷

These preoccupations among the Quaker community go some way to explain the lack of immediate response to Darwin's theory in both the *Friend* and the *British Friend*. These monthlies had both been founded in 1843 but differed significantly in their coverage of scientific subjects. The *British Friend* was more reactionary and opposed the reforms within the Society enacted in the late 1850s and early 1860s.

⁴ See Elizabeth Isichei, *Victorian Quakers* (Oxford: Oxford Univ. Press, 1970); E. B. Bronner, "Moderates in London Yearly Meeting, 1857–1873: Precursors of Quaker Liberals," *Church History* 59 (1990):356–71. I have followed Bronner in using the term "moderates" to describe those Friends who sought reform within the Quaker movement.

⁵ John Stevenson Rowntree, *Quakerism, Past and Present: being an Inquiry into the Causes of its Decline in Great Britain and Ireland* (Philadelphia: Longstreth, 1860).

⁶ Thomas Hancock, *The Peculium; an Endeavour to throw Light on some of the Causes of the Decline of the Society of Friends, especially in regard to its Original Claim of being the Peculiar People of God* (London: Smith, 1859).

⁷ Although biological analogies come to mind, it is unclear whether they occurred to any Quakers as they contemplated the possible imminent demise of British Quakerism. Hancock did, however, note that all human groups are subject to the law of decay and that Quakerism was not exempt from this process. *Ibid.*, pp. 1–3.

Moreover, the *British Friend* rarely reviewed books that did not focus on Quaker concerns, and the few scientific contributions were mostly derived from other publications.⁸

By contrast, from its inception the *Friend* devoted considerable space to science, especially to astronomy and natural history, while scientific books were frequently reviewed. Although initially edited by Charles Gilpin, in 1858 Alfred Bennett took over as both proprietor and editor, a position he held for the next nine years. An accomplished botanist (and subsequently lecturer in botany at St Thomas's Hospital and Bedford College in London), he initiated the "Science" and "Natural History" columns as separate and regular features, the latter conducted by Edward Newman, a naturalist and prolific publisher who was somewhat critical of Darwin's theory. While Ellegård was correct to portray the *Friend* as offering little support for Darwin's theory, this appears to have been due primarily to Newman's influence, since Newman was Bennett's mentor in scientific matters. Moreover, after the mid-1860s science was accorded far less attention, the "Science" and "Natural History" columns no longer being regular features, although meteorological records continued to be published. This apparent loss of interest in science coincides with F. Bowyer Kitto taking over as editor from Bennett at the beginning of 1867. The influence exerted by the editor and particularly by Newman over what was published should caution us against attributing to the whole Quaker community the somewhat anti-Darwinian views expressed in the *Friend*.

The third relevant periodical was the *Friends' Quarterly Examiner; a Religious, Social & Miscellaneous Review, Conducted by Members of the Society of Friends*, which commenced publication only in 1867 and was devoted to substantial signed articles rather than to short news items. Its editor, William Colson Westlake, a Southampton corn merchant, welcomed contributions from all sections of the Quaker community. However, in creating this new forum Westlake insisted that, in order to remain healthy, Quakerism must judiciously cast off "that which . . . has lost its life and greenness." Instead, Quakers should adopt "those means which each generation requires for its peculiar condition. The body that can thus reform itself from within, is neither lifeless nor decaying."⁹ This call for reform from within was echoed by many of the contributors, who viewed the new journal as an appropriate vehicle for presenting and discussing innovative ideas. Although the *Friends' Quarterly Examiner* postdates the *Origin* by several years, during its first three decades it contained a significant number of articles on science in general and Darwinism in particular, many of which offered positive assessments of the theory of evolution.

My analysis, which draws principally on the three Quaker periodicals just mentioned, locates Quaker responses to Darwin within the context of the struggle between evangelicals and their "moderate" critics, who sought reform within the Society of Friends by repairing the balance between the Bible and the "Inner Light"—the doctrine that each person possesses a divine spark. Yet it must be stressed that these Quaker journals were written by Quakers for Quakers. A very different perception of Quaker responses to the theory of evolution would be apparent if we were to

⁸ E.g., the Dec. 1858 issue contained a quotation from the geologist Hugh Miller under the title "Creation Progressive" in which Miller argued that the physical aspects of humans, along with minerals, plants, and animals, form part of the ongoing work of creation, whereas humankind alone possesses a higher faculty. *British Friend* 16 (1858):314.

⁹ [William Colson Westlake], "The Past Year." *FQE* 3 (1869):8.

examine the participation of Quakers in the scientific community—if, for example, we were to look at the research they pursued in such areas as botany and entomology; their correspondence with other scientists; their participation in scientific societies; and their contributions to scientific journals and textbooks. These topics, which will be discussed elsewhere, fall outside the scope of the present essay.¹⁰ Not surprisingly, Quakers were more willing to explore issues of science and religion when writing for other Friends than when addressing the scientific community at large. Thus in assessing Quaker responses to Darwin's theory, my focus is on the Quaker periodical press.

Another significant issue must be introduced. As Peter Bowler and other historians of biology have stressed, Darwin's theory of evolution by natural selection needs to be distinguished clearly from another type of evolutionary theory that was formally different from Darwin's. Although Darwin himself often employed Lamarckian notions, especially when discussing inheritance, the key innovation in the *Origin* was his argument that evolution was accomplished by the mechanism of natural selection. Any theory of organic development that does not specify natural selection cannot legitimately be called "Darwinian" in this strong sense. However, in the decades following the first publication of Darwin's book many authors advanced neo-Lamarckian theories of evolution that portrayed species as developing in an orderly manner along preordained paths. This alternative theory was usually linked with the notion of progress, entailing the view that, with the passage of time, an evolving species becomes increasingly complex. Often, the development of a species was conceived as analogous to the development of an individual. Thus, just as an adult develops from a child, humans developed from monkeys. These are both teleological explanations; just as the child possesses the potential for adulthood, so the monkey represents an early stage in human development.

The theory of evolution by natural selection, which implied that species do not progress along a specific path, stands opposed to this teleological view. Instead, species develop randomly, in the sense that they are shaped by local selective pressures, such as the availability of food and the presence of predators. Darwin did not envisage evolution as a straight line indicating biological progress but rather as a tree that produces branches at irregular intervals. Although we need to separate these two theories—one Darwinian, the other anti-Darwinian—they were often confused. As Bowler has written, some of Darwin's "most vocal supporters had little real enthusiasm for natural selection, and positively anti-Darwinian theories flourished in the later decades of the [nineteenth] century."¹¹ As we shall see, many of the Friends discussed here championed as "Darwinian" a view of biological progress that Darwin repudiated and attributed the notion of progressive evolution to Darwin.

I. EVANGELICALS

Although many earlier Quakers had encompassed evangelicalism, the Beacon controversy of the mid-1830s did much to move British Quakers toward a rather unyielding form of evangelicalism. Partly in response to the rampant Unitarianism

¹⁰ I discuss them in a book tentatively entitled *Quakers in British Science*, forthcoming.

¹¹ Peter Bowler, *The Non-Darwinian Revolution: Reinterpreting a Historical Myth* (Baltimore: Johns Hopkins Univ. Press, 1988), p. 47.

which he saw being disseminated by some Friends in America, Isaac Crewdson, an eminent Manchester Quaker and wealthy manufacturer, published in 1835 a work entitled *A Beacon to the Society of Friends* in which he argued the need for Quakers to downplay the doctrine of the “Inner Light” and instead to make the Bible the primary source for their Christianity. Although this publication led to the departure of Crewdson and about three hundred other “Beaconites,” it was also the immediate impetus that forced many other Quakers to declare their evangelical convictions. With their emphasis on faith and on the doctrine of atonement, such Quakers were participating in the broader evangelical revival that Boyd Hilton has shown to have been such a powerful movement in early Victorian Britain.¹² Moreover, these Quakers tended to see themselves as more closely aligned with evangelicals in other churches—even Anglicans—than with Quakers of a quietist disposition, whom they increasingly viewed as theologically unsound reactionaries.¹³ One indication of this realignment is that when Joseph John Gurney, an affluent Norwich banker, visited Edinburgh in 1830 he found himself in considerable agreement with Thomas Chalmers, the eminent Scottish evangelical.

Quakers of a quietist orientation were perceived by many evangelicals as having turned inward and lost contact with the vivifying force of the Bible. During the 1830s and 1840s Gurney helped move the Friends into a mode that was more spiritually satisfying and outward looking by reinvigorating the Society with evangelical zeal. Without rejecting the doctrine of the Inner Light, he nevertheless envisaged that Quakerism should be reoriented toward biblical Christianity.

Gurney, who was well read in the scientific literature, particularly commended the study of nature because it displayed God’s handiwork. Moreover, he believed that science and technology were crucial to the progress of the human race, as measured both in terms of intellectual progress and humankind’s ability to control the natural world.¹⁴ Gurney’s most public pronouncement on science was his address to members of the Manchester Mechanics’ Institute in 1832. While enthusing about the pursuit of science and its value for improving the human condition, he repeatedly emphasized the religious implications of scientific endeavor. Using arguments for design, he sought to impress on his audience the need to appreciate God as the author of nature. The preeminent use of science, he urged his listeners, “is to confirm our belief in the Creator and Supreme Ruler of the universe—to establish and enlarge our acquaintance with God.” Yet, clearly concerned that contemporaries in the scientific community might encourage materialism among his working-class audience, he stressed that materialist theories of mind were inadequate and that the mind possesses a spiritual nature, “a spark of divine intelligence, breathed into man by his Creator.”¹⁵

Gurney also engaged the contemporary controversies in geology by reminding his Manchester audience that the “beginning, which took place about six thousand years

¹² Boyd Hilton, *The Age of Atonement: The Influence of Evangelicalism on Society and Economic Thought, 1785–1865* (Oxford: Clarendon, 1988).

¹³ Isichei, *Victorian Quakers* (cit. n. 4), pp. 45–53.

¹⁴ David E. Swift, *Joseph John Gurney: Banker, Reformer, and Quaker* (Middletown, Conn.: Wesleyan Univ. Press, 1962), pp. 145–61.

¹⁵ Joseph John Gurney, *Substance of an Address on the Right Use & Application of Knowledge, lately Delivered to the Mechanics of Manchester, at their Institution, in that Town* (Norwich, U.K.: Fletcher, 1833), pp. 8, 7, and 13.

ago, is plainly recorded in Scripture.”¹⁶ However, two years earlier he had adopted a rather different position, agreeing with Chalmers that the opening chapters of Genesis were “literally true.” When faced with geological evidence such as the fossil record, which indicated a period well in excess of six thousand years, Gurney and Chalmers argued that the biblical narrative made no specific pronouncement about the date of the original Creation. Hence the Creation could be allowed to predate the First Day by an epoch of unspecified duration. In this way geology and Genesis could be reconciled. As Chalmers commented, “[T]he geologist may apply his systems, and expatiate as he pleases. He shall inflict no injury on the Christian’s faith.”¹⁷ Like many other evangelicals, Gurney and Chalmers were also concerned to ensure that science did not challenge the position allotted to humankind in the biblical narrative.

The evangelicalism that had enlivened and split the Society in the 1830s subsequently became the orthodoxy. While Gurney possessed the intellectual breadth to engage many issues (scientific ones included), from an evangelical standpoint few mid-Victorian Quakers could emulate his achievement. In some respects the Society was strengthened by the reforms of the early 1860s, especially the new tolerance that no longer required the disownment of anyone who “married out.” During the ensuing decades the number of members, which had been declining alarmingly, began to rise. Although the reforms appeared to be working, a minority of Quakers still sensed a malaise in the Society and believed that the widely accepted evangelicalism was having a deleterious effect.

This dominant evangelicalism influenced Quaker views of science. Although initially conceived as freeing Quakerism from inward-looking quietism, the evangelical turn resulted in an increasing rigidity and led to an anti-intellectualism that discouraged many Quakers from engaging with the major intellectual trends affecting Victorian society at large. Moreover, although Quakers continued to be deeply involved in social issues such as pacifism, the abolition of the slave trade, and racial equality, writers in both the *Friend* and the *British Friend* evinced little interest in such conceptual issues as the naturalistic perspective endorsed by leading Darwinians and the challenge to biblical scholarship thrown down by the authors of *Essays and Reviews* (1860). In their limited forays in that direction, most Quaker authors perceived areas of potential conflict with their understanding of God’s word. They often promoted a “monster-barring” strategy by simply refusing to acknowledge this challenge to their beliefs. Evangelicalism, initially seen as breaking the hold of conservative quietists, now bred its own form of insularity.

Such insularity is reflected in the treatment allotted to Darwin’s *Origin of Species*. Although the book was published late in 1859, the *Friend* first noticed it in its January 1861 issue, while the *British Friend* ignored it entirely. In his “Literary Notes” in the *Friend*, William Tallack singled out the book primarily for its impact.¹⁸ Tallack, who later became prominent in the penal reform movement, had previously

¹⁶ Ibid.

¹⁷ Chalmers quoted in Joseph John Gurney, *Reminiscences of Chalmers, Simeon, Wilberforce, &c.* (n.p., n.d.), p. 37. On Chalmers’ attitude to science see D. Cairns, “Thomas Chalmers’s Astronomical Discourses: A Study in Natural Theology,” *Scottish J. Theology* 9 (1956):410–21; Crosbie Smith, “From Design to Dissolution: Thomas Chalmers’ Debt to John Robison,” *Brit. J. Hist. Sci.* 12 (1979):59–70.

¹⁸ *Friend* 1 (1861):10. On Tallack see *Annual Monitor* (1909):142–7, and F. A. Knight, *A History of Sidcot School: A Hundred Years of West Country Quaker Education, 1808–1918* (London: Dent, 1908), pp. 115–16.

taught in two of the leading Quaker schools. Although he had emphasized natural history in his teaching, he appears not have pursued science intensively. Having resigned his teaching post, he turned his hand to a wide range of literary projects in the early 1860s and was a frequent contributor to the *Friend*. In his January 1861 review he noted that Darwin's views "have not been endorsed by the majority of naturalists and comparative anatomists, and have occasioned alarm to some, as having a tendency to weaken the authority of Scripture," adding, "but this is particularly denied by the author." In support of the latter claim he cited a passage near the end of the *Origin* in which Darwin had alluded rather circumspectly to God's role as creator of life. In presenting Darwin as simultaneously threatening scriptural authority and evoking God as Creator, Tallack neither endorsed nor entirely rejected the new theory.

The August 1861 issue of the *Friend* contained a far more extensive critique of the *Origin*, with the by-line "I. K." However, this contributor did not review the book directly but instead engaged Darwin's views through the recently published review of the third edition by Edward Newman in the *Zoologist*, which Newman edited. Newman thought highly of Darwin as a naturalist, but in his ambivalent review he particularly noted that Darwin had not honestly confronted the incompatibility between his theory and the biblical account of the Creation.¹⁹ I. K., taking his cue from Newman, pointed out that Darwin's argument about the descent of species implied that "the history of creation so beautifully recorded in the Book of Genesis is altogether a fable." However, somewhat meekly the author distanced himself from any theological critique of the theory of evolution, arguing that for naturalists the theory must be assessed on its scientific credentials, not in terms of any religious implications. The review in the *Zoologist* served I. K.'s purpose, since it contained arguments that allegedly refuted the theory. For example, Newman argued that Darwin's theory purported to explain both instances where many similar species exist and also where, as in the unique case of the giraffe, there is no evidence of previous forms. The fact that the theory could not explain the evolution of the giraffe revealed its *ad hoc* nature. A further argument was that Darwin had failed to apply his theory to minerals, which I. K. (like Newman) considered to be so closely analogous to organic forms as to require an identical explanation. Only toward the end of the article, after I. K. had disposed of Darwin's theory on "scientific" grounds, did he advise his readers to become fully acquainted with these technical arguments countering evolution so as to defend themselves against its vocal proponents. He was particularly concerned that the "timid and wavering mind" should not be seduced by Darwin's theory and be led to question the "perfect harmony" between science—"true science"—and revealed religion.²⁰ Even though this commentary in the *Friend* was not written by Newman, the *Friend* columnist, his views dominated.

Newman's "Natural History" column in the *Friend* often carried extracts from articles published elsewhere, in addition to letters from readers. In this way subscribers became acquainted with each other's scientific interests and with the ongoing researches within the wider natural history community. The subjects discussed in the second number for 1861 may not be atypical: the sagacity of birds, hedgehog

¹⁹ Edward Newman, review of third edition of *The Origin of Species* and three other works, *Zoologist* 19 (1861):7577-7611.

²⁰ I. K., "The Origin of Species—(Zoologist, No. 231)," *Friend*, n.s. 1 (1861):210-12.

behavior, the habits of moorhens, and a report about snails eating fish. Rarely did Newman or his correspondents deal with conceptually demanding aspects of natural history but rather confined their articles mainly to observations. An editorial intervention of early 1862, when Newman dismissed a report which suggested that species could be transformed artificially, represents his closest engagement with Darwinism.²¹

Throughout the 1860s and 1870s concern about the implications of science became increasingly focused on the apparent clash between the account of the creation of humankind given in Genesis and the various naturalistic explanations that were receiving increasing attention from the scientific community. Thus Charles Lyell's *Antiquity of Man* (1863) was summarily dismissed in the February 1863 number of the *Friend*, because it "will be employed by sceptics to impugn the early chapters of Genesis."²² Eight years later Darwin's *Descent of Man* (1871) was likewise rejected, because "we could not accept its conclusion."²³

However, one related issue did not evince total unanimity. Reviewers in the *Friend*, like many of their contemporaries, were disturbed by the antireligious writings of John Tyndall. His 1867 article attacking miracles provoked a strong response from a reviewer who used the occasion to applaud the author of a short work defending miracles as evidence that Christ was the Son of God. Likewise when Tyndall's *Fragments of Science* (1871) was reviewed in the *Friend*, the reviewer commended it as a clear exposition of science but criticized Tyndall for offering an inadequate view of miracles.²⁴ By contrast, in reviewing another of Tyndall's books, one reviewer sided with him and clearly approved his "want of charity . . . towards those who are unable to reconcile the teachings of science with those of revelation." This is particularly interesting comment, since the (anonymous) reviewer appears to deprecate any attempt to use Scripture to criticize science.²⁵

The only considered response to the theory of evolution in the *Friend* came from the aging Edward Ash, who had been a fervent Gurneyite and whose evangelical leanings had led him to leave the Quakers in the 1850s in order to join the Congregationalists, although he subsequently returned to the fold. In a letter dated 1873 he delivered eight propositions explaining why Quakers should not be worried by Darwin's or any other theory of organic development. Interestingly, Ash acknowledged evolution in general by conceding that animals, even humans, may have changed over time. (As we shall see, Quakers frequently stressed the themes of progress and development.) Moreover, he insisted that the Bible should not be used to judge scientific theories, which must be assessed on their own terms. However, he asserted that no current scientific theory was able to offer a (scientifically) satisfactory account of the development of species. This being so, argued Ash, rationality and prudence dictated that believers in the authority of Scripture should not be "disturbed or shaken" by recent developments in science, including Darwin's theory.²⁶ What Ash appeared to be offering was a position that enabled evangelical Quakers to protect their beliefs from the incursion of science by keeping it at bay. It is not

²¹ *Friend*, n.s. 2 (1862):13.

²² *Friend*, n.s. 3 (1863):65–6.

²³ *Friend*, n.s. 11 (1871):178.

²⁴ *Friend*, n.s. 8 (1868):66, and n.s. 11 (1871):248.

²⁵ *Friend*, n.s. 13 (1873):42.

²⁶ *Ibid.*, p. 197.

known whether Ash's formulation was generally accepted by readers of the *Friend*, but the failure of his article to evoke any published correspondence may indicate that his position was widely endorsed.

In the period 1870–1876 four contributors to the *Friends' Quarterly Examiner* likewise drew a sharp distinction between the facts and genuine inferences of science and those speculations that carry the scientist far beyond the firmly based and truly knowable. In applying this strategy they—like Ash—sought to defuse any apparent conflict between science and religion, while at the same time ensuring that their somewhat literal understanding of the Bible was not threatened.²⁷ These authors clearly viewed science as a potentially dangerous force that must be kept in its proper place. This attitude appears to have been widely shared among evangelical Quakers during the second half of the nineteenth century. However, this defensive strategy was not employed by writers in the *Friends' Quarterly Examiner* after 1876, perhaps because, with the increasing number of scientists publishing in support of evolution, it became increasingly difficult to dismiss the theory as a mere hypothesis. Moreover, evangelicalism was beginning to wane.

Almost no attention was paid to Darwinism in the *Friend* throughout most of the 1870s and 1880s. Indeed, the space devoted to science was minimal. It might appear that the majority of the British Quaker community, while continuing to maintain a high profile on humanitarian issues (including antivivisection), paid little attention to science. A few natural history books were reviewed briefly, together with some excursions into biblical chronology. Only when the *Friend* became a weekly in the early 1890s, under a new editor, did "Scientific Notes" become a regular feature. However, the author of these "Notes" confined himself to factual reports of recent developments in science and technology and did not stray into the disputed territory of science and religion.

This evidence derived principally from the *Friend* indicates that a large section of the Quaker community evinced little interest in the challenging ideas of evolution during the closing decades of the nineteenth century. The Society of Friends had become rather inward-looking, and the *Friend* carried few scientific articles, compared with its enthusiastic coverage of science during its early years. Almost all book reviews were directed to religious matters, mainly works written by Friends. Certainly humanitarian and philanthropic issues were evident and sometimes related to science: opposition to vivisection is an example. On the changes sweeping through Victorian intellectual life the *Friend* was largely silent.

II. MODERATES

This section examines the response of the moderates within the Quaker movement to Darwin's theory. Not surprisingly, many supported evolution in the Quaker periodical press. Indeed, in the long term the theory was intimately connected with a major transition in the nature of Quakerism, since not only did moderate Quakers perceive the need to engage Darwin's theory but Quakerism incorporated the notion of human

²⁷ William Tallack, "Christian Positivism; or True Science *versus* False Philosophy," *FQE* 8 (1874):556–64, on p. 560; J. H. Midgley, "Religion and Science," *FQE* 10 (1876):199–205; Francis E. Fox, "Science and Religion," *FQE* 4 (1870):342–56, on p. 349; Frederick Burgess, "Causes of the Conflict between Science and Theology," *FQE* 9 (1875):243–51. See also Charlotte M. James, "Of Books and Reading," *FQE* 9 (1875):558–63, on pp. 560–1.

progress, which was widely accepted as closely allied to progress and development in the organic realm. By the end of the nineteenth century these changes resulted in the dominance in Britain of a liberal form of Quakerism.

The late 1860s and early 1870s saw the slow emergence of this moderate mode of Quakerism. Although a rigid evangelicalism successfully dominated the conservative quietists, it also provoked other reactions. In particular, those with Unitarian leanings found themselves bitterly opposed to the evangelical majority. In the late 1860s discipline broke down, and a deep schism occurred within the Manchester Monthly Meeting. It is interesting to note that the epicenter of this schism was the Manchester Friends' Institute, a new cultural organization, where contentious topics were openly discussed, such as the views propounded in *Essays and Reviews* and (possibly) Darwinism. Some felt that the institute was in danger of undermining the essence of Quakerism and that its proceedings must be brought in line. During the ensuing months the schism widened. Two of the leading dissidents, David Duncan and Joseph B. Forster, evoked the spirit of Fox and other early Quakers, who, they claimed, had placed liberty and freedom of conscience far above strict adherence to the letter of Scripture. "The worship of anything short of God, is idolatry," wrote Duncan, "whether it be a golden calf or a modern Bible." After various machinations involving local, Quarterly and Yearly meetings, this group of rationalists and Unitarian seceded in the early 1870s and formed its own church. In another highly conspicuous case Edward Bennett (brother of Alfred, the botanist and editor of the *Friend* from 1858 to 1867), was disowned in 1873 for espousing Unitarian views.²⁸

Those who dissented from the dominant and rather rigid evangelicalism were not all sympathetic to Unitarianism. Others considered that the reigning evangelicalism had become far too creedal and had diverted the Society into anti-intellectual paths. This was the main complaint of George Stewardson Brady, a doctor who practiced in Sunderland and was appointed to the chair of Natural History at Armstrong College, Newcastle. In a short anonymous essay entitled *Lumen siccum [Arid Light]: An Essay on the Exercise of the Intellect in Matters of Religious Belief* (1868) he criticized Quakers who had failed to recognize those "current[s] of modern thought in science and literature" that threatened long-cherished beliefs and traditions. The Society should not stubbornly ignore these developments but should confront the difficulties they raised. Quakerism, he felt, had become far too enmeshed in its own dogmas, particularly in "the mischievous dogma of one unerring and infallible Book." Evoking what he saw as the rich tradition that encouraged freedom of conscience, he urged his fellow Quakers to make full use of their reasoning faculties and to encompass science, which he declared was God's special gift to humankind.²⁹

Turning to the periodicals of the day, we find that while the *British Friend* and the *Friend* tended to reflect a fairly rigid evangelical line, the *Friends' Quarterly Examiner* (founded 1867) was much more receptive to diverse opinions and became the main vehicle for voices of moderation.³⁰ Over the next three decades a number of

²⁸ Frederick Cooper, *The Crisis in Manchester Meeting. With a Review of the Pamphlets of David Duncan and Joseph B. Forster* (Manchester, U.K.: William Irwin, 1869); Isichei, *Victorian Quakers* (cit. n. 4), pp. 27 and 61–5.

²⁹ [George Stewardson Brady], *Lumen siccum: An Essay on the Exercise of the Intellect in Matters of Religious Belief. Addressed to Members of the Society of Friends* (London: F. Bowyer Kitto, 1868). This work does not appear to have been reviewed in either the *Friend* or the *British Friend*.

³⁰ Bronner, "Moderates" (cit. n. 4).

articles appeared in the latter periodical dealing with science and religion, considerable attention being paid to both Darwinism and Tyndall's widely discussed 1874 "Belfast Address."³¹ As noted earlier, the *Friends' Quarterly Examiner* carried four articles between 1870 and 1876 that would have appealed to those evangelicals who wished to preserve the integrity of Scripture by limiting the domain of science to its nonthreatening factual basis. However, in contrast to these attempts to demarcate a boundary between science and religion, several other writers adopted a more moderate religious line, welcoming science in general and Darwinism in particular. Thus in an article entitled "The Harmony of Christianity and Science" (1870), Richard Westlake deplored the recent attack on science by a leading Anglican, offering instead an irenic message that he considered more appropriate for Quakers. Far from castigating scientists and seeking to limit their researches, he even urged the extension of science to the discovery of laws governing the moral and spiritual domains. Although Westlake's conciliatory approach did not engage the force of Darwin's argument, he was appalled by the controversies generated by Darwin's book and by Tyndall's "Belfast Address."³²

In articles, mostly published in the *Friends' Quarterly Examiner*, an increasing number of Quakers argued that Friends must not interpret the Bible in a literal and inflexible manner but that greater weight should be given to the doctrine of the Inner Light. For example, the very first issue of the *Friends' Quarterly Examiner* carried a dialogue written by the historian Thomas Hodgkin in which the protagonists reflected on William Grove's presidential address delivered before the 1866 meeting of the British Association. Grove's theme had been "Continuity," which was taken to include the relation between humankind and the rest of organic creation. Hodgkin used his interlocutors to express opposing positions, especially those concerning the implications of Darwin's theory for religion. One of the characters, Hugh, is greatly impressed by the intellectual brilliance and explanatory power of Darwin's theory. Even if the theory is applied to humankind, he asserts, it carries no atheistic implications. Indeed, claims Hugh,

I can truly say for myself, personally, that though my feelings as to my Maker have undergone a change since I embraced the Darwinian theory, that change is not one that I can regret. I used to look upon his creative work as long since ended, and to feel myself as separated from Him accordingly by long aeons of time. Now I can see that *He has never ceased to create, that He is still creating*. . . . The result is, not that I for a moment feel the Creator of the Universe made less distinct, but that I feel its Upholder brought immeasurably nearer to me.

The other character, Arthur, is, by contrast, disturbed by Grove's address and expresses his concern that Grove and other Darwinians are peddling implicit atheism. Hugh proceeds to show that Arthur's worries are groundless. However, it should be noted that Arthur does not exploit any potential conflict between Genesis and

³¹ Tyndall would have been widely known in the Quaker community, because he had previously taught at Queenwood College, Hampshire, which was run by a Quaker, George Edmundson. Although not a Quaker school, many Quakers had supported the liberal educational aims of Queenwood, which was sometimes advertised in the *Friend*. See William H. Brock, "Queenwood College Revisited," a chapter in Brock, *Science for All* (Aldershot: Variorum, 1996).

³² Richard Westlake, "The Harmony of Christianity and Science," *FQE* 4 (1870):5-12.

Darwin's account. Instead (like Hodgkin) he interprets the Bible historically, claiming that it "is really God's own story of creation, but told through an unscientific messenger to a half-barbarous people." Understood in this way, the Genesis narrative and modern theories in geology and biology need to be kept entirely separate.

Only toward the end of the dialogue do the two interlocutors converge on the issue that worried Hodgkin. In pursuing science it is all too easy for the scientist to forget God and drift involuntarily into atheism. Such a stance was especially likely to mislead the lower classes. The dialogue concludes with Hugh reading aloud a passage from Francis Bacon's essay on atheism, which contains the famous line: "[A] little philosophy inclineth man's mind to atheism, but depth in science bringeth men's minds about to religion." However successful modern science may prove, Hodgkin clearly believed that, properly understood, it does not undermine religion and that we can counteract any tendency toward involuntary atheism by actively pursuing our spiritual lives.³³ Hodgkin's use of the dialogue form provides an interesting way of working through the religious issues raised by evolution and of showing that, in his opinion, Quakers need not fear the theory of evolution, provided they hold firm to their religious principles.

Other writers soon followed Hodgkin's lead. In 1871 the botanist Alfred Bennett launched a far more trenchant defense of science in the pages of the *Friends' Quarterly Examiner*. His strategy was twofold: first he separated science and theology, and then he argued that this division benefited both parties. Although he noted that theologians were not yet prepared to admit a limitation to the scope of the Bible, Bennett asserted that "the Bible was not intended to teach us scientific truths respecting the Origin of Life." Scriptural passages, he insisted, should not be recruited in opposition to Darwin's theory: "[T]he doctrine of Evolution must rest on the same grounds as any other scientific theory, and be judged [solely] by the light of experience and knowledge." In his view, however, the question of the origin of life stood outside scientific analysis. Moreover, if certain scriptural passages appeared to be contradicted by science, then those passages must "be understood in a metaphorical or oriental, rather than in a literal or occidental, sense."³⁴

Alfred Bennett proceeded to argue that his strategy recommended itself because the cause of true religion would suffer if the Bible were used either to support or to undermine any scientific theory, particularly if biblical interpretation conflicted with established science. Such an inappropriate deployment could only detract from the precious spiritual message contained in Scripture. Moreover, the study of the natural world opens "one of the richest sources of communion with God." The student of science will recognize those biblical passages in which nature is evoked as indicating God's governance of nature through laws. But Bennett was also clearly disturbed by Quakers who argued that the human intellect had to be subordinated in order to preserve religious faith. Instead, he insisted, the mind is "the crown and glory of man himself" and, as a divinely ordained gift, must be used in the study of the natural world. Like other Quaker writers he believed that there could be no conflict

³³ Thomas Hodgkin, "Concerning Grove's Inaugural Address to the British Association," *FQE* 1 (1867):33–59. Emphasis added to the quotation from Hugh.

³⁴ This phrase drew fire from an anonymous author in the highly evangelical *British Friend*, who charged Bennett with perverting Scripture and entertaining atheistic scientific theories: *British Friend* 29 (1871):281–3 and 30 (1872):1–2. For Bennett's reply see *British Friend* 30 (1872):46–7.

between science and religion, provided that theology is confined to its proper sphere and scientific theories are adequately tested by the scientific method.³⁵

A powerful new voice first joined the fray in 1875. Educated at Bootham (where he currently taught) and possessing the degrees of B.A. and B.Sc. from London University, Silvanus Phillips Thompson adopted a much more sophisticated line when he argued in the *Friends' Quarterly Examiner* that science was not a closed system of knowledge but rather that with each new discovery a new set of queries emerged. Science is therefore, in the apposite words of the modern philosopher Karl Popper, an "unended quest." Thompson even contended that Darwin's theory, which had been so hotly contested, had led scientists into new fields of enquiry, such as mimicry, the geographical distribution of plants and animals, and the history of human societies. In reviewing the history of science Thompson saw a close and symbiotic relationship between knowledge and mystery. With every gain in our knowledge of the natural world, new mysteries confronted the researcher, and the engagement with the mysteries of nature was the great spur to increasing knowledge. Although he did not offer any simplistic bromide for resolving the question of divine design, Thompson saw in our ability to wonder "a quality of mind bestowed upon man wisely and well." It was this ability to transcend our knowledge and to wonder about the structure of the world that distinguishes humans from beasts; this quality "seems inseparable from the phenomena of consciousness. . . . and shares both their emotional and their intellectual aspect." Here, then, we see Thompson portraying science not as a finished product but as an ongoing process in which the creative mind plays a major role. He did not pause to ask whether Tyndall's views about matter or Darwin's theory—or any other theory—was or was not compatible with religion. Instead, what concerned him was the way in which individuals expanded their consciousness through the pursuit of science. For a Quaker, this was the Inner Light in operation.³⁶

Thompson's biographers recalled that he "gradually began to feel—and his opinions were shared by others—that the Society of Friends during the seventies and eighties was drifting more and more into Methodism . . . , while forgetting its ancient call to a mystical and inner religion."³⁷ Thompson kept faith with Quakerism, deriving strength from traditions that were being ignored by most of his contemporaries. Likewise, the young Lawrence Richardson felt this deadening hand of conformity while growing up in Newcastle. He later recounted that although there was considerable discussion of the place of the Bible in Quakerism, "the more vocal portion (but certainly not all) were laying great stress on the need for *belief* in Bible and creed; and for evident conversion—'[Y]ou *must* be born again.'" Finding this creed untenable, Richardson revolted in his late teens and all but resigned his membership.³⁸

³⁵ Alfred W. Bennett, "Religion and Science," *FQE* 5 (1871):583–97. See also *Friend* 14 (1874): 284–5 and 313, for Bennett's comments on Tyndall's "Belfast Address."

³⁶ Silvanus Phillips Thompson, "The Mysteries of Nature," *FQE* 9 (1875):405–22. Thompson had previously published an essay entitled "Religion and Science" that addresses some of the same issues, in a non-Quaker journal (*Bachelor's Papers* 1 [1875]:274–82). An interesting parallel can be drawn between Thompson's views and one strand in talmudic Judaism—see Menachem Fisch, *Rational Rabbis: Science and Talmudic Culture* (Bloomington: Indiana Univ. Press, 1997).

³⁷ Jane Smeal Thompson and Helen G. Thompson, *Silvanus Phillips Thompson: His Life and Letters* (London: T. Fisher Unwin, 1920), p. 320.

³⁸ Lawrence Richardson, "Newcastle-upon-Tyne Friends and Scientific Thought: Reminiscences," *J. Friends Hist. Soc.* 45 (1953):40–4.

Yet the winds of change were beginning to blow, albeit rather gently. By the mid-1880s we see the rise of a liberal form of Quakerism that was, during the next few years, to have a profound effect on British Friends. The first widely read liberal publications were the anonymous *A Reasonable Faith* (1884) and Edward Worsdell's *The Gospel of Divine Help* (1886). The authors of the former work sought a "reasonable and scriptural" response not only to the rising tide of atheism but also to the overly dogmatic and creedal understanding of Quakerism propounded by contemporary evangelicals. Emphasizing the importance of holiness and the various sources of light, they criticized those who interpreted the Bible literally and dogmatically. Instead, they insisted that the Bible should be interpreted historically and as a progressive revelation. Clearly affected by recent currents in biblical scholarship, they sought to escape from the impasse that evangelical Quakerism had created. While the spiritual truths of the Bible should be savored, "neither its science nor its history, nor even its language should be regarded as specifically inspired."³⁹ These authors were also responding to developments in science, especially Darwinism. As Worsdell noted in *The Gospel of Divine Help*, "[A]n evolutionary interpretation of outward nature may be true, and . . . in the records contained in the Old Testament there may be an admixture of the legendary, and the survivals from a previous heathendom."⁴⁰ These reformers sought to diminish the role of the Bible and to reemphasize the notion of the Inner Light that had been such a prominent aspect of quietist thought. Their works formed the basis of the liberalizing movement that was to sweep through the Society of Friends during the next few years and weaken the hold of evangelicalism.

From 1886 onward articles began to appear in the *Friends' Quarterly Examiner* accepting evolutionary theory as an unproblematic truth. In that year George Stewardson Brady, who, as we noted, eighteen years earlier had chastised his fellow Quakers for ignoring recent scientific developments, contributed an article entitled "The Modern Spirit in the Study of Nature," in which he surveyed the immense changes that Darwin's book had initiated. In a clear, straightforward manner he explained to his fellow Quakers how botany, zoology, psychology, and anthropology had all been revolutionized and enriched by the insights gleaned from evolutionary theory. Each organism was no longer to be understood as a static structure designed by God but as possessing a history. "[W]hatever may be the final object of the Creator, He works always according to law, and . . . whatever is beautiful has been made so, not capriciously, but by a process of development." Science had provided a new understanding of the world that "may be regarded as God's special revelation to this age."⁴¹ Reneging on the theory or questioning whether it was true was no longer possible; it had to be firmly grasped by Quakers.

Brady found immediate support from John E. Littleboy, a corn merchant, who reviewed *A History of British Birds*, by Henry Seebohm, in the same volume. Compared with Brady's uncompromising espousal of Darwinism, Littleboy found Seebohm reticent and criticized him for not enthusiastically accepting the theory.⁴² Four years later, in 1890, Henry Wallis reviewed Alfred Russel Wallace's book *Darwinism*

³⁹ [Francis Frith, William Pollard, and William Edward Turner], *A Reasonable Faith: Short Essays for the Times*, 2nd ed. (London: Macmillan, 1885), p. 98.

⁴⁰ Edward Worsdell, *The Gospel of Divine Help* (London: Harris, 1886), p. 8.

⁴¹ George Stewardson Brady, "The Modern Spirit in the Study of Nature," *FQE* 20 (1886):63-84.

⁴² John E. Littleboy, "A History of Birds," *FQE* 20 (1886):423-39. See also pp. 417-18.

in highly complimentary terms. While he was critical of those churchmen who had in the past sought to impede science, he was pleased to note that the bishop of Carlisle had now publicly supported the theory.⁴³ The timing is significant, because the articles by Brady, Littleboy, and Wallis formed part of a liberalizing wave that was sweeping through the British Quaker community during the closing years of the century. A far greater sense of toleration and freedom prevailed. Moreover, the liberals viewed themselves as closer to the dissenting spirit of the early Quakers, whereas the evangelicals aligned themselves more with fellow evangelicals in the established churches and among such groups as Methodists.

A milestone in this new liberalizing movement was the 1895 Manchester Conference, where “some very straight speaking” occurred.⁴⁴ One session was devoted specifically to “[t]he attitude of the Society of Friends towards modern thought,” which provided a forum for engaging various contemporary themes in philosophy, politics, and science that some felt had been insufficiently addressed by Quakers. The session was chaired by the historian Thomas Hodgkin, who took the opportunity to criticize the majority of theologians both for impeding any scientific research that might challenge their understanding of the Bible and for distorting their interpretations in order to reach accord with modern science. Such moves, he considered, were of no service to religion and inevitably resulted in its disrepute. The problem arose from imposing an inappropriate notion of truth on the Bible. The Quaker tradition sanctioned a very different approach, one that was both intellectually honest and preserved the integrity of Christianity. Hodgkin reminded his audience that, although George Fox revered its teachings, he did not conceive the Bible as the infallible word of God that must be taken as literally true. Christ’s vital message to humankind did not depend on those passages that were “spoken unscientifically in the childhood of the world by the unscientific Hebrew sage.” Thus, when properly understood the Bible could not be incompatible with the pursuit of science.⁴⁵

The other principal speaker in that session was the physicist Silvanus Phillips Thompson, who had discussed science in the *Friends’ Quarterly Examiner* in 1875. Now principal of Finsbury Technical College, he entitled his talk “Can a scientific man be a sincere Friend?” In this highly optimistic lecture he argued that modern science had brought new and valuable insights into the world—for example, the theory of evolution—that contemporary Quakers must fully engage. The scientific method, he considered, was a critical and very effective means for determining what was true and what was false. Not swayed by doctrines and opinions that could not be subjected to scientific test, the scientist, as portrayed by Thompson, was an ethically superior being who used his intellect to gain knowledge that possessed real and lasting value. Doubtless responding to those in the Quaker movement—principally evangelicals—who sought to downplay the intellect, he stressed the need to use the power of reason fully and effectively. Since God had endowed humans with this faculty, it was sacrilege to ignore it. Yet, like religion, science has its limits: “Each

⁴³ Henry Marriage Wallis, “Darwinism,” *FQE* 24 (1890):246–57.

⁴⁴ Richardson, “Newcastle-upon-Tyne Friends” (cit. n. 38).

⁴⁵ Thomas Hodgkin, “The Relation of Quakerism to Modern Thought,” *Report of the Proceedings of the Conference of Members of the Society of Friends, held, by direction of the Yearly Meeting, in Manchester from eleventh to the fifteenth of eleventh Month, 1895* (London: Hedley Brothers, 1896), pp. 199–209, on pp. 207–9. (Hereafter cited as *Report of the Proceedings*.) See also Louise Creighton, *Life and Letters of Thomas Hodgkin* (London: Longman, 1917), pp. 149–50, 325, 337, 341, and 361.

process has its own sphere, each discovers its own kind of truth." Although admitting a number of points of contact, he argued that problems arise when one "process" invades the proper domain of the other.

Discussing the limitations of religion, Thompson criticized dogmas, such as those concerning the Eucharist and baptism, that afflicted most other Christian churches. Science had shown them to be untenable, and he welcomed the way in which recent scientific developments had helped to sift the pearls from the dross. "But that which is divine truth," he added, "modern thought will leave wholly untouched, or will touch only to confirm." Quakerism, as he saw it, was not weighed down with indefensible beliefs. Instead, with its emphasis on the spiritual light, it found its natural ally in science. Both could progress and flourish together; indeed, "[A]ll that is true, all that is real, all that is vital, will remain, will prosper, will grow; and our growth in the truth will be all the more sure, because modern thought shall have cleared away so much that choked and hindered the clear in-shining of the Divine light of Christ in the soul." Thus, in answer to the question he posed at the outset, he asserted that science and Quakerism are naturally compatible.⁴⁶

III. THE NEW ACCORD WITH EVOLUTION

By the closing years of the nineteenth century many leading Friends viewed both science in general and evolution in particular as natural allies of Quakerism. This alliance was mutual; not only did these Quakers accept evolution as a legitimate scientific theory that was commensurate with their religious beliefs, but evolution (in its broader sense, rather than natural selection) was seen as justifying the liberal sensibility, with its dual emphasis on progressive revelation and the progress of both the individual and the Quaker movement.

Late in 1907 the Woodbrooke Extension Committee in Birmingham founded the annual series of Swarthmore Lectures to be delivered "on some subject relating to the message and work of the Society of Friends." Hodgkin was invited to deliver the fourth of these high-profile lectures, and in his 1911 lecture entitled "Human Progress and the Inward Light" he took the opportunity to reflect on modern views about species, noting that in contrast to the doctrine of fixed species, which had been prevalent during his childhood, the theory of evolution was now generally accepted. Two important points followed from this understanding of nature. First, the relation between God and his Creation had to be redefined. It was no longer true to claim that "God *made* the world"; instead, "God *is making* the world." Rather than diminish our reverence for God, Hodgkin insisted that evolution had "rather immeasurably increased [it] by our conviction that He has been for ever working through the ages elaborating his great and wonderful designs." Nature, humans included, was not static but constantly evolving through progressive creation under God's dominion. Indeed, "every step gained by man in his *upward progress* from the brute must have been gained with the help of the Almighty."⁴⁷

Hodgkin's second point concerns the historical processes affecting humankind. Whereas our physical being has been shaped by the survival of the fittest, he insisted

⁴⁶ Silvanus Phillips Thompson, "Can a scientific man be a sincere Friend?", *Report of the Proceedings* (cit. n. 45), pp. 227–39.

⁴⁷ Thomas Hodgkin, *Human Progress and the Inward Light* (London: George Allen & Unwin, 1911), pp. 11 and 42. Emphasis added in latter quotation.

that as human beings we also live on a spiritual plane: God's purpose is to raise us to this higher spiritual power. He fully accepted natural selection but limited its domain of operation to the physical world, humankind included.⁴⁸ Hodgkin's solution is interesting but not entirely satisfactory, because his first argument contained the neo-Lamarckian (but non-Darwinian) assumption that there is "upward progress" in the organic world, while in the second he encompassed natural selection, which, as noted earlier, according to Darwin results in random, not progressive, changes.

However, Hodgkin's resolution of the problem of interrelating Quakerism and evolution can usefully be compared with that offered some years earlier by the surgeon Jonathan Hutchinson, for whom evolution, progress, and Christianity merged into a single optimistic *Weltanschauung*. Hutchinson, who first read the *Origin* soon after it was published, fully accepted the proposition that human beings have evolved from lower animals over an extended period of time. Moreover, he is said to have immediately recognized that its implications extended well beyond biology. As his son and biographer wrote, he "realized the tremendous liberation of mind that evolution effected—liberation for the service of mankind—and he openly taught it with all its implications; only trying to base the convictions of his hearers on a broad foundation of scientific fact; yet by no means overemphasizing the facts at the expense of their lesson."⁴⁹ The "lesson" he derived from evolution was that an intimate connection exists between biological and spiritual progress. The physical and spiritual aspects of humankind had evolved together. Although many other Quakers would have accepted this view, Hutchinson developed it in an unusually forceful manner.

For Hutchinson the theory of evolution was neither atheistic nor pessimistic. Instead, he believed that it offered a new theistic key to the universe, especially to the place of humankind in it. In particular, he equated evolution with a concept he called "Hereditry"—the process of historical accumulation within the human species through which the species progresses and achieves immortality. The individual will die, but each life contributes to the immortality of our species. As he wrote to his wife in 1881,

My mind is so imbued with it [the idea of permanence], that, when I am free from headache, I have scarcely the perception of such a thing as death, in any gloomy sense. The things that have been are the things that will be, there is no loss, but a steady gradual gain, a permanence of life, though not of individuals. The world gets itself new clothes, the same spirit but a new covering for it. Darwinism comes in, with its happy proof of gain, and demonstration of the laws under which progress and better adaptation to our world are matters of necessity: so I am thankful for my life, and thankful on the part of those who will follow me.⁵⁰

This optimistic creed posited an evolutionary process by which friendship, love, and affection would conquer all negative feelings. Hutchinson raised moral improvement—so important to Quakers—into a long-term historical force affecting the development of *Homo sapiens*. As his son noted, this view of evolution "enhanced [for

⁴⁸ *Ibid.*, p. 14.

⁴⁹ Herbert Hutchinson, *Jonathan Hutchinson: Life and Letters* (London: Heinemann Medical, 1946), p. 175.

⁵⁰ J. Hutchinson to J. P. Hutchinson, 1881, in *ibid.*, p. 151.

Hutchinson] the Christian conception of the Divine fatherhood; it sanctified all human relationships; it gave new dignity to human life; it conquered death; [and] it scattered superstition to the wind.”⁵¹

In acknowledging the role of natural selection in the organic realm it is clear that Hodgkin had read Darwin’s book more closely than Hutchinson. Yet, as noted earlier, both writers, together with many other scientifically literate late nineteenth-century Quakers, retained the essentially Larmarckian notion of organic progress. Although writers from other confessional traditions used not dissimilar strategies, I suggest that optimism and progress mattered particularly to these Quakers. Indeed, progress, optimism, and evolution were intimately connected and provided a common vocabulary linking science and religion.

IV. ARE COGNITIVE ISSUES SUFFICIENT?

In this concluding section I consider the larger question of whether we should confine discussion to cognitive issues when studying science–religion interrelations. Writers who analyze the cognitive usually focus on examples of “cognitive connection,” where a concept derived from religion enters the content of science, or vice versa. However, although the present case study includes some examples of cognitive connectivity—such as Hutchinson’s use of evolutionary terminology when discussing moral and spiritual development—it also leads me to question the adequacy of a purely cognitive analysis. In the following subsections I identify three significant weaknesses in this approach.

Can science and religion be separated?

In the pre-Darwinian synthesis of science and religion, as articulated by such naturalists as Edward Newman, we encounter many examples of ideas that we regard as religious entering into scientific theorizing. For Newman all species of plants and animals were designed by the Creator, each fulfilling its appropriate function within the ecology, and each possessing characteristics that ensure its survival over ensuing generations. The notion of providential design was deeply embedded in Newman’s natural history, including the implication that any man-made species, such as hybrids, that deviated from His perfect plan would be weak and thus not able to survive long in natural environments.

In an obvious sense Newman’s religion was the source of his commitment to providential design in nature, which, in turn, informed every page of his voluminous scientific writings. However, in offering this reconstruction of Newman’s position I am in danger of imposing an all too simple causal model on the case, one that utilizes the notion of cognitive connection and presupposes an inevitable and essentialist separation between “science” and “religion.” Yet no such separation is apparent in Newman’s writings on design in nature, since he conceived no clear distinction between science and religion. As a naturalist he saw all of nature as God’s creation, and his writings on natural history are so interwoven with theological significance that the historian cannot simply separate out the “scientific” content without doing

⁵¹ Herbert Hutchinson, *Life and Letters*, p. 219. See also Jonathan Hutchinson, *Wisdom and Knowledge: An Address Delivered at the Stoke Newington Mutual Instruction Society, October 1883* (London: n.p., 1884).

violence to Newman's *Weltanschauung*. His writings can best be described as "natural theological"—a term that is meant to frustrate the separation of his thought between its scientific and its religious components.

But this argument can be usefully extended. Quakerism can best be viewed as a way of life, and viewed in that light, Quakerism necessarily encompasses the science pursued by Quakers. Hence it can be argued that throughout Newman's long career as a naturalist, empirical evidence and providentialist theology were mutually reinforcing. In seeking cognitive connections between "science" and "religion," are we not in danger of perpetuating the assumption that science and religion constituted two separate and separable domains? Isn't this assumption at the heart of the "conflict thesis"?⁵² While I do not deny that religiously based propositions can be constitutive of scientific theorizing, the underlying assumptions are certainly open to question.⁵³

But there is another, larger problem. Cognitive connections do not occur *in vacuo*, as it were, but need to be understood within broader historical contexts. One extreme strategy is to make the cognitive subservient to the social and political. This approach was most impressively deployed by Adrian Desmond in *The Politics of Evolution* (1989), where he brilliantly located attitudes to organic transformation in the political divisions of 1830s London.⁵⁴ I have adopted a different tack and have sought to locate Quaker views on science within a broader account of Quaker history. (As indicated earlier, another essay would be needed to analyze Quaker contributions to discussions of evolution in the scientific literature.)

An Irenic Approach to Darwinism

A second (and interestingly different) form of connective is provided by the theme of irenicism. By contrast with the Quaker emphasis on pacifism, many Victorian scientists, theologians, and reviewers in the popular press deployed militaristic terminology when characterizing religious responses to evolution. Of the various evocations of militarism the most famous is doubtless J. W. Draper's war-horse *History of the Conflict between Religion and Science* (1874). But warfare manifested itself in other ways: thus one of Darwin's most violent critics was a Quaker convert to Anglicanism, William Henry Harvey, who held the chair of botany at Trinity College, Dublin. Harvey made clear his profound opposition to the mechanism of natural selection, claiming in 1869, "I cannot as yet (and probably never shall) receive the theory of Natural Selection as a satisfactory explanation of the Origin of

⁵² Much contemporary discussion of science and religion is predicated on highly questionable assumptions about the nature and separation of science and religion. See Geoffrey Cantor and Chris Kenny, "Barbour's Four-Fold Way: Problems with His Taxonomy of Science-Religion Relationships," forthcoming.

⁵³ On some related issues see Geoffrey Cantor, "Interpreting Michael Faraday as the 'Christian Philosopher': Some Problems Regarding Metaphysics," in *Facets of Faith and Science*, ed. Jitse M. van der Meer, vol. 1: *Historiography and Modes of Interaction* (Lanham, Md: Univ. Press of America, 1996), pp. 49-62.

⁵⁴ Adrian Desmond, *The Politics of Evolution: Morphology, Medicine, and Reform in Radical London* (Chicago: Univ. of Chicago Press, 1989). Unfortunately most of the "Quakers" discussed by Desmond were not members of the Society of Friends, and therefore his characterization of Quaker attitudes to science is mistaken. For example, John Epps, who styled himself a Quaker, was kept at arm's length by the Quaker community.

species.” He also dismissed Darwin’s theory as “an ingenious dream.”⁵⁵ Whatever Harvey’s specific objections, he was viewed by the Darwinians as irritable, violent, intolerant, and incapable of giving his opponents a fair hearing. Thus Darwin wrote to Alfred Russel Wallace that “[s]o far is bigotry carried, . . . I can name 3 Botanists [Harvey, J. H. Balfour, and Neil Arnott] who will not even read Hooker’s Essay!!” In any case, Darwin thought that Harvey did not possess the intellectual ability to appreciate the theory of evolution.⁵⁶

By contrast, practicing Quakers, being pacifists, were appalled by the widespread evocation of pugilistic and military language in discussions of science and religion and avoided making such attacks. Thus, when the Quaker Alfred Bennett read a paper criticizing specific aspects of Darwin’s theory at the 1870 British Association meeting, T. H. Huxley “paid a high compliment to the author of this paper, which he said was the first that he could recollect having heard in Section D [the Natural History section], which taking up the side against Mr. Darwin, still did so in a proper and philosophic manner.”⁵⁷ Other Quakers, whether writing for or against the theory, were generally moderate in their use of language. Even evangelicals like Ash, who advocated limitations on the scope of science, were often impelled by a sense that peace could be maintained by dividing the territory. But, as we have seen, moderates went further and sought constructive ways of engaging science while opposing the dogmatic positions defended by rigid evangelicals.

Likewise, one contributor to the *Friends’ Quarterly Examiner* in 1875 regretted the polarization that had occurred, especially in response to Tyndall’s 1874 “Belfast Address” to the British Association. This contributor parodied the situation thus: “The warfare is an open one. . . . [A]rmed with the weapons” that theology “has wielded for centuries,” certain arrogant theologians were “striving to protect her sacred domain from the invasion of the iconoclastic hordes that would overrun it.” He also criticized, though less severely, those immoderate scientists who claimed too much for science. The author then advised protagonists to retreat from their barricades and instead seek “some elements of possible concord.”⁵⁸

Moreover, Quakers—especially those in the moderate camp—insisted that appreciation of God is gained through personal experience. Understanding of God is always partial and ongoing and cannot be reduced to a set of theological propositions. Thus Quakers were highly critical of those Christians who sought to create a systematic theology in order to form the basis of an inflexible religious creed. This antidogmatic and skeptical attitude permeated not only Quaker attitudes to religion but also their way of engaging science, and it thus constitutes an additional noncognitive theme in our understanding of the science–religion issue.

The Quakers we have been considering moderated their responses to evolution in

⁵⁵ *Memoir of W. H. Harvey, M.D., F.R.S.* (London: Bell and Daldy, 1869), pp. 337–38; idem, *An Inquiry into the Probable Origin of the Human Animal, on the Principles of Mr. Darwin’s Theory of Natural Selection, and in Opposition to the Lamarckian Notion of a Monkey Parentage* (Dublin: n.p., 1860). See also F. Burkhardt, S. Smith et al., eds., *The Correspondence of Charles Darwin* (Cambridge: Cambridge Univ. Press, 1985–), vol. 8, pp. 322–35 and 415–21. (Cited hereafter as *Correspondence*.)

⁵⁶ C. Darwin to A. R. Wallace, 18 May 1860, *Correspondence*, vol. 8, pp. 219–23; C. Darwin to J. D. Hooker, 3 Mar. 1860, *Correspondence*, vol. 8, pp. 115–16. The cited “essay” of Hooker’s is J. D. Hooker, *On the Flora of Australia* (London: Reeve, 1859).

⁵⁷ *Nature* 3 (1870–1):38.

⁵⁸ J. Gurney Pinkham, “Religion and Science,” *FQE* 9 (1875):333–53.

conformity with their pacifist ideals and their antidogmatic hermeneutics. Although they tended to perceive beauty and design in nature, some Quaker writers readily accepted that nature was “red in tooth and claw.” However, they refused to believe that violence in nature legitimated conflict among humans, who, possessing higher powers, should be able to transcend brutality.⁵⁹ Thus, while irenicism was not constitutive of any scientific theory, it provides a religiously based theme, but one that also applied to their deportment in the scientific community. In this sense it functioned as a connector, but not a cognitive connector in the sense previously defined.

The Need for Contextualization

The confluence, by the late nineteenth century, of evolutionary and progressivist views seems to offer a good example of a link between science and religion at the cognitive level. This was not a case of science borrowing ideas from religion, or vice versa, but rather the recognition by Hodgkin and others that the progressivist ethic—a crucial theme in early Quakerism that had subsequently been downplayed—resonated with the Lamarckian progressivism found in modern biology.

Yet in acknowledging this cognitive connection the historian’s work has hardly begun. My purpose has been to set this convergence within Quaker history and locate its deployment by the emerging moderates. This cognitive connection between “evolutionism” and progressivism in religion was forged by moderates like Hodgkin and Thompson as part of their attempt to swing the pendulum away from the Bible and toward the Inner Light, in order to revivify an ailing religious tradition. In other words, it formed part of the dialectic within nineteenth-century Quakerism and therefore needs to be read within that historical context.

The foregoing case study suggests that the simple causal model of cognitive connection between science and religion is of limited use and applicability and needs to be supplemented by a more sophisticated understanding of conceptual interrelations. Thus, the search for cognitive connection offers a very partial method for understanding the science–religion domain, but one that can gain more significance through historical contextualization.⁶⁰

⁵⁹ E.g., Hannah Maria Wigham, “Is man a fighting animal?”, *FQE* 14 (1880):404–18 and 461–72.

⁶⁰ For further discussion of some alternative approaches see John Brooke and Geoffrey Cantor, *Reconstructing Nature: The Engagement of Science and Religion. The 1995–6 Gifford Lectures at Glasgow* (Edinburgh: T & T Clark, 1998, New York: Oxford Univ. Press, 2000).