

*Did Scientific Discoveries Have Any Traceable Impact on Religious Belief in The
Nineteenth Century?*

Introduction

‘Extinguished theologians lie about the cradle of every science as the strangled snakes beside that of Hercules.’¹ The words of Thomas Huxley, a nineteenth-century English biologist, not only suggest that science and religion were in a state of conflict, but that science was the triumphant victor. Indeed, Huxley gives the impression that science dramatically affected religious belief in that the former superseded the latter. The historiographical interpretations of the Victorian ‘crisis of faith’ have also tended to side with him: ‘doubt is frequently exaggerated and faith dwarfed.’² Such interpretations place Biblical criticism, literature associated with enlightenment rationalism and new theories of physical science as the central causes for individuals modifying or rejecting their faith.³

However, in recent years, historians have challenged this view. For instance, Larsen argues that the crisis of faith interpretation has become ‘vastly overblown’; he provides several case studies of prominent freethinkers who reconverted to Christianity to illustrate his assertion.⁴ Furthermore, Young argues that Darwinian evolution was part of a wider debate, and that its primary concern was not to challenge Christianity.⁵ That said, as a complex relationship exists between science and religion, it is inappropriate to juxtapose the two.⁶ Instead, I considered science to be an influencing force that sparked debate and theological revision, whilst influencing the creation of a new religious vista—spiritualism. By placing science in context with the wider intellectual climate, I will, however, consider the degree to which scientific discoveries influenced Christianity and wider religious belief.

First, I will examine the influence of Darwinian evolution on Christianity. I will argue that it did have an impact, as it encouraged theological revision; but as Darwin’s theory was part of a wider debate, its impact cannot be wholly attributed to science.

Secondly, by making a distinction between ‘science’ and ‘scientists’, I will argue that the professionalization of British science led to the latter defining the scope of the former, which resulted in science and theology becoming distinct fields of study. By examining Huxley’s role in this process, I will argue that scientists were more influential than scientific discoveries.

¹ Huxley, T.H., (1894), *Collected Essays*, Vol. II, p.52

² Larsen, T., (2006), *The Crisis of doubt*, Oxford: Oxford University Press, p.1

³ Turner, F.M., (1988), *The Victorian Crisis of Faith and the Faith That was Lost*, p.9

⁴ Larsen, T., (2006), *The Crisis of doubt*, Oxford: Oxford University Press

⁵ Young, R.M., (1985), *Darwin’s Metaphor: nature’s place in Victorian culture*, pp.1-29

⁶ Eisen, S., (1990), ‘Introduction,’ in: Helmstadter, R.J. & Lightman, B. (eds.), *Victorian Faith in Crisis: Essays on Continuity and Change in Nineteenth-Century Religious Belief*, p.1

Finally, I will explore the relationship between science and spiritualism. I will argue that a fascination with the preternatural, alongside new scientific discoveries, led to an exploration of the ‘invisible world’ and its potentialities. Indeed, I considered spiritualism to provide an evidence-based approach to eschatology, which indicates that science had a broader influence on nineteenth-century religious belief.

Darwin’s The Origins of the Species, and its Reception.

Darwin’s book, *The Origins of The Species*, has three interlinked purposes. First, it develops a case against Paley’s *Argument from Design*. Secondly, it argues that evolution is not a linear scale of development, but that single species separate and evolve in different directions to adapt to their environment; and finally, it attempts to convince the reader that the theory of natural selection best explains the process of adaptive evolution.⁷ Although Darwin formulates a scientific basis of evolution, he does not demean or completely omit God from his theory. In fact, Darwin considers nature to be the ‘expression of the Creator’s power’, and claims that the Creator ‘breathed’ life into the first organic beings.⁸ However, Darwin marginalises God’s role within creation, whilst his selection theory challenges traditional Christian teaching.

The Bible speaks of God’s divine sovereignty, and claims that His will governs all worldly events.⁹ Although Paley’s *Argument from Design* attempts to ‘adduce evidence for the existence of God from the presence of design in nature’, God’s sovereignty is still present in each natural event.¹⁰ Conversely, Darwin’s theory suggests that whilst God created natural laws and performed the miracle of breathing life into ‘a few forms or one,’ He no longer intervenes in the affairs of life.¹¹ Evolution is, therefore, the result of a random mechanism of trial and error, which does not anticipate the future need of the species. This implies that the intellectual and moral capacities of man do not transcend the animal kingdom, but are modifications of animal instincts. Furthermore, as the process is driven by death and

⁷ Bowler, P., (2007), *Monkey Trials and Gorilla Sermons*, p.95

⁸ Bowler, P., (2003), *Evolution: History of an Idea*, p.183
— Darwin, C., (1859), *The Origins of The Species*, p.490

⁹ Matthew 10:29, *The Bible, International New Version*

¹⁰ However, Paley’s famous analogy of the watchmaker reduces God to the status of an engineer.

—Wilson, L.G., (1972), *Paley and Natural Theology*, p.396

¹¹ Darwin, C., (1859), *The Origins of The Species*, p.490

suffering, Darwin's God is diametrically opposed to Christianity's: He built the watch, wound it up and then left it to unwind.¹²

Darwin's portrayal of God's role in creation sparked controversy, and, unsurprisingly, conservative Christians, like Wilberforce, utterly rejected his claims.¹³ However, some Calvinists accepted Darwinian evolution as natural selection denied man's destined progress, as it implied that humanity was a fallen race that needed salvation.¹⁴ Moreover, other liberal Christians attempted to reconcile Darwin with Paley, despite the obstacles implicit in Darwin's selection theory, which was, in part, due to pressures from within Christianity. The debate over 'higher criticism', for instance, encouraged some liberal Christians to question the accuracy of the gospels, especially those containing miracles.¹⁵ The emergence of *Theistic Evolution* can, therefore, be viewed as a compromise position. Although its proponents conceded that 'everyday variations might be random', they argued that sudden variations, such as the formation of a new species, were directed by a supernatural Intelligence, and were part of a preordained plan.¹⁶ Alfred Russell Wallace, Darwin's co-writer, adopted such a position.¹⁷ He considered 'Higher Intelligence' to be consistent with science, as it explained aspects of evolution that selection theory could not.¹⁸ Indeed, he ' [treated] Divine action as an alternative to scientific language, and not as a competitor with it.'¹⁹

Consequently, one can argue that Darwin's scientific discovery was a catalyst for theological revision, as it reinforced doubts that already existed. However, Darwin's theory drew on work from a variety of different fields, which suggests that it was part of a wider debate.²⁰ For example, Thomas Malthus' essay, *On the Principle of Population*, challenged the harmony of God's creation by comparing the relationship between population growth and food supply. As

¹² Bowler, P., (2007), *Monkey Trials and Gorilla Sermons*, pp.20-23

¹³ This led to the famous Wilberforce-Huxley debate, which reached its climax at the British Association, in 1860, at Oxford; it is generally claimed that science won the day.

¹⁴ Bowler, P., (2003), *Evolution: History of an Idea*, p.203

¹⁵ Bowler, P., (2003), *Evolution: History of an Idea*, p.203

¹⁶ Bowler, P., (2003), *Evolution: History of an Idea*, pp.202-205

¹⁷ Although he is not a 'classical theist', as God's transcendence is less emphasised, he considers natural selection to account for man's bodily organism, but claims it cannot be extended to man's mental nature, he concludes: 'an Overruling Intelligence has watched over the action of those laws...to produce an organization sufficiently perfect to admit of, and even to aid in, the indefinite advancement of our mental and moral nature.' See, Wallace, A.R., (1869), '*Geological Climates and the Origin of Species*', p.209, quoted in: Fichman, M., (2001), *Science in Theistic Contexts: 'A Case Study of Alfred Russell Wallace on Human Evolution'*, p.237

¹⁸ Fichman, M., (2001), *Science in Theistic Contexts: 'A Case Study of Alfred Russell Wallace on Human Evolution'*, p.236

¹⁹ Fichman, M., (2001), *Science in Theistic Contexts: 'A Case Study of Alfred Russell Wallace on Human Evolution'*, p.236

²⁰ Young, R.M., (1985), *Darwin's Metaphor: nature's place in Victorian culture*, pp.1-5

the former increases geometrically and the latter arithmetically, the inevitable consequences of natural law is suffering, vice, war, famine and death.²¹ Upon reading Malthus, Darwin wrote: ‘it at once struck me that under these circumstances favourable variations would tend to be preserved, and unfavourable ones to be destroyed. The results of this would be the formation of a new species.’²² Darwin’s work also incorporated the associationist utilitarian philosophy of Bentham and Mills whose maxim, ‘the greatest good of the greatest number’, is the application of natural laws and sanctions to men and morality.²³ Indeed, I would agree with Young that Darwin extended this ‘utilitarian psychological theory to the ultimate sanctions of survival and extinction.’²⁴ Historians and philologists were also casting doubt over literal interpretations of the Bible; and moralists, like George Elliot, rejected Christianity as they found the Scriptures incompatible with nineteenth-century moral justice.²⁵ Any impact that Darwin’s work had on religious belief cannot be wholly attributed to science, which suggests that it was not so much scientific discoveries that impacted religious belief, but the spirit of free enquiry.

The Professionalization of Science and T.H. Huxley

Crowther argues that Darwin’s publication ‘was not such a thunderbolt to the Church as might be imagined.’²⁶ Primarily, this was due to respected scientists, like Adam Sedgwick, opposing Darwinian evolution and defending the Church.²⁷ Indeed, the Church of England were more preoccupied with internal controversies, which they considered more threatening: the division between the High, Low and Broad Churches; the Evangelical movement reemphasising individual salvation; the Oxford movement’s concern for ancient tradition, which led J.H. Newman back to Rome; and the debate over ‘Higher Criticism,’ sparked by Straus’s *Life of Jesus*, in 1846, which concluded that the Bible must be treated as a historical document rather than the Word of God.²⁸ However, Darwin’s publication did produce a group of scientists, led by Huxley, who ‘no longer believed in the comfortable idea that the duty of science was to praise the order and harmony of God’s creation.’²⁹

²¹ Young, R.M., (1985), *Darwin’s Metaphor: nature’s place in Victorian culture*, p.2

²² Darwin, C.,(1876), *Autobiographies*, pp.72-73

²³ Burns, J.H., (2005), ‘*Happiness and Utility: Jeremy Bentham’s Equation*’, p.46

²⁴ Young, R.M., (1985), *Darwin’s Metaphor: nature’s place in Victorian culture*, p.3

²⁵ Crowther, M.A., (1988), ‘*Church Problems and Church Parties*’, p.5

²⁶ Crowther, M.A., (1988), ‘*Church Problems and Church Parties*’, p.5

²⁷ Crowther, M.A., (1988), ‘*Church Problems and Church Parties*’, p.5

²⁸ Bowler, P., (2003), *Evolution: History of an Idea*, p.203

²⁹ Crowther, M.A., (1988), ‘*Church Problems and Church Parties*’, p.5

This group, known as the 'young guard' or the 'X-club', emerged as the elite of the scientific community, and were at the forefront of its professionalization.³⁰ Turner argues that the process of professionalization requires the elite to 'engage in conflict with persons inside and outside the existing occupational or amateur group.'³¹ Internal conflict raises the standards of competence, fosters a common purpose and creates internal peer review.³² Moreover, conflict with the outside establishes the independence of the group, its self-definition and its 'self-generating role in the social order.'³³ As religious clergymen and religious minded laymen had a significant presence within the group, and the Church had considerable authority outside of it, conflict between scientists and religious spokesmen was inevitable.³⁴ Indeed, I consider it to be a natural by-product of professionalization.³⁵

From the 1840s onward science underwent a significant transformation, and gradually became less fettered by religion. The membership requirements of the Royal society, in 1847, indicates that scientists no longer wanted science to be 'subordinate to moral values, a concept of God, and a view of human nature that had been formulated by clergy and religious writers.'³⁶ The Royal society restricted new membership to fifteen annually, and scientific rather than social achievements were favoured, which effectively reduced the number of members who were clergymen. For instance, in 1849, 9.7% of its members were Anglican clergymen, but by 1899 this had fallen to 3.1%. The same trend also occurred in the British Association: between 1831-1865, forty-one Anglican clergymen presided over individual sections, but from 1831-1900 this fell to three; in each case lay professionals replaced clergymen.³⁷

Scientists, like Huxley, who were professional scientists, began to distance themselves from the religious establishment and their scientific theories became increasingly incompatible with the Bible.³⁸ I would argue that the Wilberforce-Huxley debate epitomises this transition. It is interesting that although Huxley did not agree that natural selection was the main

³⁰ Bowler, P., (2003), *Evolution: History of an Idea*, p.185

—Turner, F., (1988), 'The Victorian Conflict Between Science and Religion', p.179

³¹ Turner, F., (1988), 'The Victorian Conflict Between Science and Religion', p.175

³² Turner, F., (1988), 'The Victorian Conflict Between Science and Religion', p.175

³³ Turner, F., (1988), 'The Victorian Conflict Between Science and Religion', p.175

³⁴ 'Religion influenced the behavior of men of science in their capacity as practicing scientists, defined the scope and intellectual context of scientific work, and frequently determined the kinds of questions and conclusions deemed appropriate or inappropriate for research.' See, Turner, F., (1988), 'The Victorian Conflict Between Science and Religion', p.177

³⁵ Turner, F., (1988), 'The Victorian Conflict Between Science and Religion', p.175

³⁶ Turner, F., (1988), 'The Victorian Conflict Between Science and Religion', pp.177-8

³⁷ Turner, F., (1988), 'The Victorian Conflict Between Science and Religion', pp. 177-86

³⁸ Turner, F., (1988), 'The Victorian Conflict Between Science and Religion', p.186

mechanism of evolution, he vehemently defended it against the conservative's attacks.³⁹ It was in Huxley's short-term political interests to defend Darwin, as it gave the scientific elite the leverage to move intellectual authority away from theology and into the realm of science.⁴⁰ Huxley used his position within the X-club, and various government commissions, to ensure that Darwinism was not defeated. Indeed, scientists avoided open debate and used their editorial positions, especially in the journal *Nature*, to gradually introduce Darwinian values into scientific literature. The X-club, who favoured scientists that supported Darwinism, also influenced academic postings, and Huxley led the battle to reduce the Church's influence over state education; all of which ensured that the next generation of scientists would take Darwinian evolution for granted, as it became an intrinsic part of their training.⁴¹ This appears to have been successful because by the end of the century few believed that miracles were the cause of a new species. Consequently, for Huxley and the other opponents of religion, Paley's *Argument from Design* had become extinct.⁴²

This was compounded by the fact that when the older generation of scientists died, like Sedgwick, Powell and Whewell, who had defended the Church, there were insufficient replacements from the clergy.⁴³ Furthermore, a significant number of clergymen, influenced by the Oxford movement, began to redefine the mission and characteristics of the Anglican Church 'in terms of its own peculiar institutional and theological values.'⁴⁴ Science, therefore, began to be viewed as the enemy rather than providing evidence of God. Indeed, by World War I, Christian theologians 'had abandoned natural theology and the clergy no longer sought to rival or complement scientists as interpreters of physical nature.'⁴⁵ Huxley and his contemporaries successfully defined the scope and nature of Victorian science, and its function within society. Although Darwinian evolution was a means to an end, it was ultimately the scientists themselves that had a traceable impact on Christian religious belief: science, by the twentieth century, had largely become divorced from Christianity.

Spiritualism: an Evidence-Based Eschatology.

Concurrent to the separation of science from Christianity, there was an increasing interest in spiritualism, and its associated séance phenomena. Janet Oppenheim, in her *The Other World*,

³⁹ Bowler, P., (2007), *Monkey Trials and Gorilla Sermons*, pp.104-105

⁴⁰ For Huxley, evolution was useful as it 'determined truth in areas once claimed by theology.' See, Bowler, P., (2003), *Evolution: History of an Idea*, p.185

⁴¹ Bowler, P., (2003), *Evolution: History of an Idea*, p.185

⁴² Bowler, P., (2003), *Evolution: History of an Idea*, p.186

⁴³ Turner, F., (1988), 'The Victorian Conflict Between Science and Religion', p.186

⁴⁴ Turner, F., (1988), 'The Victorian Conflict Between Science and Religion', p.186

⁴⁵ Turner, F., (1988), 'The Victorian Conflict Between Science and Religion', p.196

argues that the reason for this is because spiritualism provided a vigorous response to the Victorian ‘crisis of faith.’⁴⁶ Similarly, Joseph McCabe, considers spiritualism to have been appealing as it offered evidence of heaven, at a time when science was unsettling belief.⁴⁷ Undoubtedly, early spiritualist writers considered science, and the materialistic philosophy it expounded, to be the main source of tension.⁴⁸ However, rather than rejecting scientific methodology, spiritualists ‘were eager... to force the methods of science into the service of an unseen, immaterial world.’⁴⁹ As such, I would argue that spiritualism brought together the preternatural and scientific discourses.

First, the Victorians fascination with the preternatural — experiences that were ‘considered to be irregular, yet within the natural order’ — is evident from the popularisation of magic, mesmerism, ghost stories and their widely articulated interest in the uncanny and unexplained.⁵⁰ Romanticism, in the late eighteenth-early nineteenth-century, also encouraged the preternatural, as it placed emphasis on the notions of mystery, emotion and the imagination in the arts.⁵¹ Furthermore, I would argue that scientific discoveries, such as Michael Faraday’s electro-magnetic induction and practical applications of electricity, were followed with great interest, which is epitomised by the Great Exhibition of 1851.⁵² Consequently, I do not consider scientific language and the ‘epistemological redefinition of science to mean critical research based on empirical verification,’ to have been alien concepts to the Victorians.⁵³ There were only a few ‘professional’ scientists by the 1850s, and amateur scientists could still engage seriously in ‘scientific’ experimentation. Science was not, therefore, completely confined to the professional elite.⁵⁴

By setting spiritualism in a preternatural framework and incorporating scientific language and methodology, early spiritualists bridged the gap between the preternatural and the scientific, both of which were exploring, in their own unique ways, the immaterial world. For instance, Alfred Russell Wallace discusses spiritualism after citing examples of preternatural wonders and ghost activity, although he tries to show that spiritualism is superior to, and distinctive

⁴⁶ Oppenheim, J., (1985), *The Other World*, p.1

⁴⁷ McCabe, J., (1920), *Spiritualism: A popular history from 1847*, pp.23-5

⁴⁸ Oppenheim, J., (1985), *The Other World*, pp.1-2

⁴⁹ Oppenheim, J., (1985), *The Other World*, p.3

⁵⁰ Byrne, G., (2010), *Modern Spiritualism; and the Church of England, 1850-1939*, p.22

⁵¹ Byrne, G., (2010), *Modern Spiritualism; and the Church of England, 1850-1939*, p.24

⁵² It showcased the latest technological and industrial developments, and attracted over six million visitors. See, Byrne, G., (2010), *Modern Spiritualism; and the Church of England, 1850-1939*, p.30

⁵³ Turner, F., (1988), ‘*The Victorian Conflict Between Science and Religion*’, p.173

⁵⁴ Byrne, G., (2010), *Modern Spiritualism; and the Church of England, 1850-1939*, p.30

from, these experiences.⁵⁵ Moreover, spiritualism adopted the ‘vocabulary of experiment, energy, health, investigation, telegraphy and electricity’, and claimed that it offered empirical evidence of heaven, in the form of séance phenomenon, which made spiritualism appear exciting, new and modern.⁵⁶ Although the preternatural and scientific discourses are paradoxical, they did overlap. For instance, scientifically minded-men, who also were interested by the preternatural, formed the Cambridge Ghost Club in the 1850s. A similar club formed in London, in 1862, which merged with the former to form the Society for Psychical Research, in 1882: a society that scientifically investigated séance phenomenon.⁵⁷

In the context of spiritualism, scientific investigation occurred both ‘formally’ and ‘informally’. The latter concerns itself with private experimentation during home séances. In 1857, *The Times* notes, ‘[home séances had been] digested into a science, with its forms, its nomenclature, its inductions and its rules.’⁵⁸ However, to professional scientist, like William Crookes, the home séance provided insufficient scientific evidence: séances were not conducted under test conditions, which would significantly reduce the possibility of deception; instruments were not used to add accuracy to the phenomena, as under the circumstances one’s ‘natural senses are liable to be thrown off their balance’; and séances were not attended by scientific men, whose training qualified them to ‘weigh and adjust the value of the evidence which might present itself.’⁵⁹

Scientists, like Sir William Crookes, therefore conducted formal scientific investigations to make ensure that the ‘real workers of science [did not] allow the reins [of science] to get into unfit and incompetent hands.’⁶⁰ Upon commencing his investigation into spiritualism, Crookes adopts an unbiased approach: ‘I have seen nothing to convince me of the truth of the “spiritual” theory...[but I prefer] to enter upon the enquiry with no preconceived notions.’⁶¹ Nevertheless, Crookes considers the knowledge implicit within séance phenomenon, assuming that it is genuine, to be a branch of science, and outlines the degree of evidence that would need to be procured before ‘admitting a new department of knowledge into her ranks.’⁶² Although the scope of this paper will not explore the genuineness of the phenomena,

⁵⁵ Byrne, G., (2010), *Modern Spiritualism; and the Church of England, 1850-1939*, p.25

⁵⁶ Byrne, G., (2010), *Modern Spiritualism; and the Church of England, 1850-1939*, p.31

⁵⁷ Byrne, G., (2010), *Modern Spiritualism; and the Church of England, 1850-1939*, p.31

⁵⁸ *The Times*, 5 May 1857, p.6, col. C., quoted in: Byrne, G., (2010), *Modern Spiritualism; and the Church of England, 1850-1939*, p.40

⁵⁹ Crookes, W., (1874), *Researches in the Phenomena of Spiritualism*, p.4

⁶⁰ Crookes, W., (1874), *Researches in the Phenomena of Spiritualism*, p.5

⁶¹ Crookes, W., (1874), *Researches in the Phenomena of Spiritualism*, pp. 3-4

⁶² Crookes, W., (1874), *Researches in the Phenomena of Spiritualism*, p.4

it is apparent that Crookes acted on his criticisms, and implemented a scientific methodology in his investigation.⁶³

Consequently, I would argue that scientific discoveries, a fascination with the preternatural and the need to alleviate religious doubt created a new religious vista that encouraged thousands of Victorians to explore the unseen world.⁶⁴ Whilst some professional scientists, like Crookes, investigated spiritualism they did so because they considered it to be superstition masquerading as science. Nevertheless, as the likes of Crookes, Lodge, Myers and Wallace openly supported spiritualism this added weight to its claims, and aided its popularity. Moreover, the contact that spiritualists had with the 'spirit world' created a philosophy, which, rather than being based on faith, was based on the scientific principle of evidence: the precepts of spiritualist philosophy was based upon the communication with the 'spirit world', whose validity was apparently demonstrated through séance phenomena and evidence of survival.⁶⁵

Conclusion

In conclusion, I consider the impact of scientific discoveries on nineteenth-century Christianity to have been marginal. Although Darwinian evolution encouraged theological revision, Darwin's work was influenced by the wider intellectual landscape and thus cannot be directly attributed to science. Furthermore, I would argue that internal pressures were of more concern to the Anglican Church, which suggests that, rather than science being the predominate influencing force, the general spirit of free enquiry exerted more influence. However, the professionalization of science, and the determination of the scientific elite to define the scope and nature of Victorian science, and its function within society, undoubtedly led to an increasing separation of science from religion. I therefore consider scientists, rather than scientific discoveries, to have influenced Christianity, although scientists used scientific discoveries to challenge Christian theology.

Outside of Christianity, I would argue that science had more influence, as it influenced the creation of a new religious vista in the form of spiritualism. Spiritualism was undoubtedly influenced by scientific discoveries and a fascination with the preternatural; and scientific

⁶³ Obviously, there was scientific debate concerning the veracity of the evidence, and many scientists, including T.H Huxley, refused to engage with spiritualism at all because they considered it unworthy of scientific investigation. However, for details of Crooke's controlled séances see, Crookes, W., (1874), *Researches in the Phenomena of Spiritualism*, pp. 5-30

⁶⁴ Oppenheim, J., (1985), *The Other World*, p.86

— Byrne, G., (2010), *Modern Spiritualism; and the Church of England, 1850-1939*, p.43

⁶⁵ Byrne, G., (2010), *Modern Spiritualism; and the Church of England, 1850-1939*, pp.80-103

methodology was applied to séance phenomenon. However, I would argue that more work needs to be undertaken to determine the degree to which scientific discoveries, methodology and support from some members of the scientific community led to the popularisation of spiritualism in the nineteenth-century.

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