

Pantheism and Science in Victorian Britain

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Abstract

In discussing the relationship between science and religion during the Victorian period, historians have paid much attention to Christian monotheism, deism, spiritualism, materialism, agnosticism, and atheism; however, pantheism has received little attention. Yet the Victorians published thousands of discussions of pantheism, which shows that pantheism was a significant religious position in the Victorian ferment of faith. Through exploring these writings, this dissertation shows that there was considerable interest in pantheism among Victorian thinkers concerning the viability of pantheism and its relationship with science. The first two chapters present a general account of pantheism in Victorian Britain, with eight Victorian advocates of pantheism being identified and their lives and philosophies being introduced. These people are John Hunt, Alfred Barratt, James Martineau, Thomas Elford Poynting, James Hinton, James Allanson Picton, Charles Bray, and Constance Plumptre. As science became the dominant intellectual authority in Victorian Britain, many Victorian religious thinkers made use of it in support of their religious doctrines. The next three chapters show that advocates of pantheism likewise drew heavily on contemporary scientific theories in advancing and defending their pantheistic views of God, the world, humans, ethics, science and religion, and the future of religion. They were strongly attracted to theories that implied a unified and creative universe, such as the correlation of forces, the idea of living matter, and the evolutionary theory of life. Scientific practitioners John Tyndall and Thomas Huxley and evolutionary philosopher Herbert Spencer were their most popular scientific sources. In consequence of pantheistic uses of science, these writers and their theories were sometimes criticised for being pantheistic, and pantheism was often treated as a science-related threat by Christian critics. This dissertation demonstrates that pantheism was more widely accepted in Victorian Britain than has been previously recognised and that pantheistic thinkers drew extensively on science.

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Abbreviations

Abbreviation	Explanation
Anon	Anonymous
<i>BJHS</i>	<i>British Journal for the History of Science</i>
<i>ODNB</i>	<i>Oxford Dictionary of National Biography</i>
<i>OED</i>	<i>Oxford English Dictionary</i>
<i>SEP</i>	<i>Stanford Encyclopedia of Philosophy</i>
<i>WBIS</i>	<i>World Biographical Information System</i>

Introduction

[T]here can be no doubt whatever that the form of thought known as Pantheism, given new prominence by the speculations of Descartes and Spinoza, has received extraordinary impetus in yet more recent times from the concurrent influence of the study of nature in two aspects: that of aesthetic delight in scenery, of which Wordsworth—though personally much less of a Pantheist than Goethe—is the chief exponent; and that of physical science, notably in the domains of chemistry and biology.

—by Richard F. Littledale in the *Contemporary Review*, 1877.¹

We do not believe that Pantheism will ever become the predominant religious error of this country; but it may very probably become sufficiently prominent [...].

—by an anonymous writer in the *Dublin Review*, 1874.²

In the 1870s, pantheism was widely discussed in British publications. Many Victorian thinkers, such as the above cited anonymous writer in the Catholic periodical, the *Dublin Review*, reported that pantheism had become significantly popular in Britain. Some thinkers, such as the Church of England clergyman Richard Littledale (1833–1890), considered that science constituted an important impetus for the spread of pantheism. When reading their words, questions may come to mind in regard to why pantheism, a seemingly foreign religious position for the Victorians, was observed by them as prominent in Britain, and why science was raised by people like Littledale to the same importance as poetry in the spread of pantheism in Britain. Currently, there are no satisfactory

¹ Richard F. Littledale, 'The Pantheistic Factor in Christian Thought', *Contemporary Review*, 30 (1877), 642–60 (pp. 642–43).

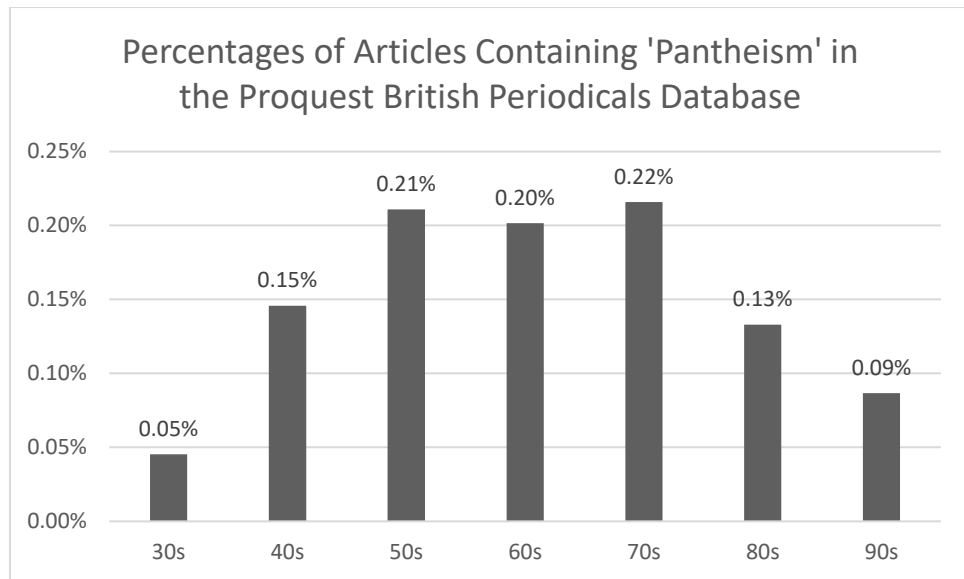
² Anon, 'Catholicity and Pantheism', *Dublin Review*, 23 (1874), 251–56 (p. 254).

accounts of pantheism or of pantheism and science in Victorian Britain in the historiography that can shed light on these questions. So far, the historiography of religion and of science and religion in Victorian Britain has focused on Christian monotheism,³ deism, spiritualism, materialism, agnosticism, and atheism. Pantheism in Victorian Britain has generally been ignored by historians as well as by philosophers. By addressing this neglect of Victorian pantheism and of its relation to science, this dissertation contributes an important new element to the understanding of religion in Victorian Britain and of the complex public debate surrounding science and religion at that time.

The historical study of pantheism in Victorian Britain is viable since there exists a considerable amount of writing discussing pantheism written by Victorian thinkers. A search for the keyword 'pantheism' within the date range from 1 January 1830 to 31 December 1899 in the ProQuest British Periodicals Database produced 6,504 results, among the 4,357,103 total articles on this database within this date range.⁴ The articles mentioning pantheism compose 0.15% of the articles within this range. Within the same date range, there are 8,067 results for 'spiritualism', 11,966 results for 'materialism', and 144,966 results for 'Christianity'; and they compose respectively 0.19%, 0.27% and 3.33% of the articles included in the database. The percentage of articles mentioning 'pantheism' is therefore very close to that of the articles mentioning 'spiritualism' or 'materialism', although neither of these comes close to the percentage of articles mentioning 'Christianity'. These numbers indicate that if we consider spiritualism and materialism significant in Victorian Britain, then pantheism can be considered significant as well. The results for pantheism, when arranged decade by decade (see the chart below), demonstrate a steep increase from the 1830s to the 1850s, with the peak maintaining for three decades from the 1850s to the 1880s.

³ In this dissertation, the terms 'monotheism' and 'theism' are used in a narrow sense, indicating the belief that there is only one supernatural and personal God who creates and governs the world. 'Monotheist' and 'theist' are people who hold such a belief.

⁴ ProQuest British Periodicals Database <<https://search.proquest.com/britishperiodicals/>> [accessed 20 August 2018]. Notice that these articles can be positive, neutral, negative, or indifferent on the subject.



This trend is in accordance with the observations the two aforementioned Victorian thinkers made in the 1870s about pantheism being more and more prominent in Britain. It should be noted that the digitalised periodicals in this database have been selected according to some unspecified criterion, thus these numbers are not the total numbers of Victorian periodical articles or of articles that mentioned certain key words. For example, it is likely that cheap titles are underrepresented, yet many Victorian radical thinkers spread their religious ideas through these cheap prints.⁵ Thus, the true numbers and percentages may be different from those given above.

In addition to periodicals, accessible historical materials include books and pamphlets. The Hathi Trust Digital Library counts 20,418 results for the keyword 'pantheism' between 1830 and 1899 in the United Kingdom; while there are 18,963 items for 'spiritualism' and 36,749 items for 'materialism' under the same search criteria.⁶ The Hathi Trust Digital Library counts many duplicates; thus, these results do not reflect the true numbers of book titles. Nevertheless, these numbers indicate that the number of

⁵ See the section 1.1.3 on materialistic pantheism for some examples.

⁶ Hathi Trust Digital Library <<https://babel.hathitrust.org/>> [accessed 20 August 2018].

books mentioning pantheism could be even higher than the number of books mentioning spiritualism and could be not far behind the number of books mentioning materialism.

These sources have mostly been ignored by historians. The historiography of pantheism in Victorian Britain is currently very limited. Thomas McFarland in *Coleridge and the Pantheist Tradition* (1969) introduces the influence of German pantheistic philosophy on the poet Samuel Taylor Coleridge (1772–1834).⁷ Ruth Barton reveals physicist John Tyndall's (1820–1893) pantheistic tendencies in 'John Tyndall, Pantheist: A Rereading of the Belfast Address' (1987).⁸ David Knight discussed the chemist Humphry Davy's (1778–1829) pantheistic sentiments in 'Higher Pantheism' (2000), and he also points out that pantheism was attractive for some Victorians in the mid-Victorian era in a few pages in his *Science and Spirituality* (2004).⁹ Herbert Schlossberg gives a two-page account of pantheism in late Victorian England in his *Conflict and Crisis in the Religious Life of Late Victorian England* (2009), pointing out that pantheism was seen by several Victorian thinkers as popular in Britain.¹⁰ These accounts represent almost the entirety of the historiography of pantheism in Victorian Britain. Coleridge and Davy were early nineteenth century figures while Tyndall almost never used the term 'pantheism' in his published writings. It is hard to consider that they were responsible for tens of thousands of writings mentioning pantheism in Victorian Britain and for the prevalence of pantheism in the 1870s. Therefore, a careful study of these widely ignored historical materials is needed, in order to make a more accurate picture of pantheism in Victorian Britain.

A preliminary question of such a study is whether the situation that most historians do not mention Victorian pantheism reflects a true lack of pantheists or pantheistic

⁷ Thomas McFarland, *Coleridge and the Pantheist Tradition* (Oxford: Clarendon Press, 1969).

⁸ Ruth Barton, 'John Tyndall, Pantheist: A Rereading of the Belfast Address', *Osiris*, 3 (1987), 111–34.

⁹ David Knight, 'Higher Pantheism', *Zygon*, 35 (2000), pp. 603–12; David Knight, *Science and Spirituality: The Volatile Connection* (London: Routledge, 2004), pp. 86–88.

¹⁰ Herbert Schlossberg, *Conflict and Crisis in the Religious Life of Late Victorian England* (Somerset: Transaction Publishers, 2009), pp. 269–70.

thinkers in Victorian Britain. A quick survey of the historical sources discredits such a claim. I identify eight Victorian advocates of pantheism, whose writings offered extensive and learned accounts on the subject. They are James Martineau (1805–1900), Charles Bray (1811–1884), Thomas Elford Poynting (1813–1878), James Hinton (1822–1875), John Hunt (1827–1907), James Allanson Picton (1832–1910), Alfred Barratt (1844–1881), and Constance Plumptre (1848–1929). Although their pantheistic philosophies and theologies were quite different and sometimes controversial, they nevertheless shared the view that pantheism was the best religious position since it was the religious position that was the most in accordance with modern science. They often drew upon scientific theories in their pantheistic writings, and they frequently mentioned scientific figures, such as John Tyndall, Thomas Huxley (1825–1895), Ernst Haeckel (1834–1919), and Herbert Spencer (1820–1903). All of them, except Martineau, are currently very marginal in historiographies of religion and of religion and science. It is also notable that pantheism was reported as a popular belief among working-class people, and that the leaders of working-class radicals Robert Owen (1771–1858), George Holyoake (1817–1906), and Charles Bradlaugh (1833–1891) had pantheistic views.

I have not come across a great number of pantheistic figures in my research. Even so, the number is still significant enough to justify this study. We can learn from these pantheistic thinkers unique religious, philosophical, and science-related ideas that are different from what we have learned from Christian monotheists, deists, spiritualists, materialists, agnostics, and atheists. It is worth mentioning that their writings did not compose the entirety of the materials about pantheism in Victorian Britain. There were also many contributions from critics of pantheism. They often claimed that pantheism was fanciful, that pantheism was an oriental error that would not affect the sober British mind, and that pantheism was immoral as it dismissed the boundary between good and evil. Advocates of pantheism disagreed with these criticisms. From debates surrounding pantheism, we can learn more about people's opinions towards pantheism and towards pantheism and science. Overall, in this dissertation, I explore the historical materials concerning pantheism in Victorian Britain, and I aim to give a general account of pantheism in Victorian Britain, an account of the lives and philosophies of the eight

Victorian advocates of pantheism, and a detailed account about how scientific theories were used by these advocates of pantheism in support of their pantheistic ideas.

Historiography

Since this dissertation concerns pantheism and the relationship between pantheism and science in Victorian Britain, it mainly lies within the historiography of the relationship between science and religion, the historiography of science, and the historiography of religion. In this section, I give a short account of the relevant historiographical fields. First, I give a brief overview of the historiography of science and religion, showing how the current contextual approach emerged, and why nowadays historians consider the conflict thesis problematic. I then suggest using the phrase ‘the Victorian ferment of faith’ to replace ‘the Victorian crisis of faith’ as the phrase that characterises the state of faith in Victorian Britain. Secondly, I give an account of the current state of the historiography of pantheism in Victorian Britain and demonstrate that much remains to be done. Lastly, I list some philosophical and theological studies of pantheism that may provide some insights for this historical study of pantheism.

Historical accounts of the relationship between science and religion trace back to the second half of the nineteenth century. Anti-religious scientific practitioners at the time propagated the conflict thesis, according to which science and religion were in a timeless conflict. In this picture, science represented truth and freedom, while religion represented superstition and oppression, and science would inevitably win over religion. Historians usually cite John William Draper’s (1811–1882) *History of the Conflict Between Religion and Science* (1874) and Andrew Dickson White’s (1832–1918) *A History of the Warfare of Science with Theology in Christendom* (1896) as chief examples of the conflict thesis.¹¹

¹¹ For example, John Hedley Brooke, *Science and Religion: Some Historical Perspectives* (Cambridge: Cambridge University Press, 1991), p. 2; Gary B. Ferngren ed., *The History of Science and Religion in the Western Tradition: An Encyclopedia* (New York: Garland, 2000), p. xiii.

The conflict model of science and religion represents a Whiggish way of writing history. The historiography of science was in general Whiggish until the mid-twentieth century with the history of science being used to justify modern science. Whiggish history described science as a continuous enterprise gradually progressing towards truth, and the history of science was an account of theories and events that were considered successful, while other theories and events were ignored as valueless. In the 1950s and 1960s, historians and philosophers of science began to criticise and eventually abandoned the cumulative and progressive image of science as well as the Whiggish way of writing history of science.¹² With the rejection of Whiggish narratives, history of science began to be written from the relatively independent point of view of the historian rather than from the point of view of the advocate of science. Historians began to write more contextual histories of science by examining the social, cultural, economic, and political aspects of science rather than concentrating solely on the intellectual aspect of science. Instead of organising events in a simple progressive picture, historians now explore the complexity of human activities, and expand their subjects of enquiry from elite scientists to people outside the scientific community.

In the 1970s, historians began to write the history of the relationship between science and religion in this contextual manner.¹³ With the social, cultural, and political histories of science and religion being written, the conflict model of science and religion became implausible. Historians of science and religion deconstructed the conflict thesis. They proposed that science and religion as two fields were not in themselves in conflict, and that what was in conflict were people of different ideologies, beliefs, and economic, political, and social positions. Notably, Frank Miller Turner explores the formation of

¹² Thomas Dixon, 'Introduction', in *Science and Religion: New Historical Perspectives*, ed. by Thomas Dixon, Geoffrey Cantor, and Stephen Pumfrey (Cambridge: Cambridge University Press, 2010), pp. 1–19 (p. 1).

¹³ The time is also given in Dixon, 'Introduction', p. 1.

the conflict thesis in the nineteenth century.¹⁴ He draws out the picture that the conflict thesis was made by naturalistic scientific practitioners in support of their aim to professionalise and secularise science in order to secure their intellectual and educational authority, their incomes, and their social stances. John Hedley Brooke has been known as the one who gave the final blow to the conflict thesis with his book *Science and Religion: Some Historical Perspectives* (1991).¹⁵ The contextual approach has been affirmed notably through Brooke and Geoffrey Cantor's lectures *Reconstructing Nature: The Engagement of Science and Religion* (1998), and through *Science and Religion: New Historical Perspectives* (2010), a collection of the proceedings of the 2007 science and religion conference at the University of Lancaster, which marked Brooke's retirement.¹⁶ More recently, James Ungureanu has examined the origin of the conflict thesis in his doctoral dissertation 'The Origins of the "Conflict Thesis": Draper, White, and the Protestant Tradition' (2017).¹⁷ Historians of science and religion no longer concern themselves with the conflict thesis, and works such as *The Cambridge Companion to Science and Religion* (2010) edited by Peter Harrison aim to convey this to the public.¹⁸ However, the conflict thesis is still widely supported among the general public.

This dissertation is written under this contextual approach. It also specially focuses on religious people's uses of scientific sources in support of their religious ideas.¹⁹ From

¹⁴ Such as Frank M. Turner, 'The Victorian Conflict between Science and Religion: A Professional Dimension', *Isis*, 69 (1978), 356–76; and Frank M. Turner, *Contesting Cultural Authority: Essay in Victorian Intellectual Life* (Cambridge: Cambridge University Press, 1993).

¹⁵ Brooke, *Science and Religion*.

¹⁶ John Hedley Brooke and Geoffrey Cantor, *Reconstructing Nature: The Engagement of Science and Religion* (Edinburgh: T. & T. Clark, 1998); Dixon et al. ed., *Science and Religion*.

¹⁷ James C. Ungureanu, 'The Origins of the "Conflict Thesis": Draper, White, and the Protestant Tradition' (unpublished doctoral dissertation, The University of Queensland, 2017).

¹⁸ Peter Harrison ed., *The Cambridge Companion to Science and Religion* (Cambridge: Cambridge University Press, 2010).

¹⁹ Histories of science and religion written with this focus include: David C. Lindberg and Ronald L. Numbers ed., *God and Nature—Historical Essays on the Encounter between Christianity and*

this perspective, the complexity and richness of the interactions between science and religion in the public arena, beyond the elite scientific circle, can be uncovered, and thus we can broaden our historical knowledge of the relationship between science and religion.

The time and location of study of this dissertation is Victorian Britain. In studies of religion in Victorian Britain, the phrase ‘Victorian crisis of faith’ is often seen. It is a phrase that was used by the Victorians themselves, and for a long time, historians used it to characterise the status of faith in general in Victorian Britain. Many historical works are centred around this phrase.²⁰ Historians draw the picture that orthodox Christians were troubled by naturalistic and rationalistic interpretations of the Bible and nature mainly because these interpretations changed God’s and man’s places in nature. Christian churches were constantly under attack from working-class radicals since many radicals saw churches as a cause of their precarious living conditions. The coverage of Christian churches was decreasing as the population grew faster than the expansion of churches, and as the number of disbelievers in Christianity greatly increased throughout the Victorian era. Many Christians also reported that they suffered crises of faith and life since they felt that they could not hold their Christian beliefs and had to become

Science (Berkeley: University of California Press, 1986); Jonathan Topham, ‘Beyond the “Common Context”—The Production and Reading of the Bridgewater Treatises’, *Isis*, 89 (1998), 233–62; and Aileen Fyfe, *Science and Salvation—Evangelical Popular Science Publishing in Victorian Britain* (Chicago: University of Chicago Press, 2004).

²⁰ For example: Anthony Symondson ed., *The Victorian Crisis of Faith* (London: S.P.C.K., 1970).

disbelievers.²¹ In this picture, there is a strong sense of the crisis of losing faith, but since the 1980s historians have started to see this picture as problematic.²²

It is certain that many Victorian individuals experienced changes in their faith, but whether changes of faith would necessarily lead to crises in their minds or lives is questioned by historians. For example, Bernard Lightman demonstrates, in his essay 'Robert Elsmere and the Agnostic Crises of Faith' (1990), that changes of faith did not necessarily provoke crises for individuals. He points out that William Clifford (1845–1879) and Leslie Stephen (1832–1904) suffered pain and anguish from their changes of faith, while Herbert Spencer, Thomas Huxley, and John Tyndall did not experience such pain when they changed their faith.²³ It is also certain that Christian churches were under assaults from working-class and middle-class radicals, but whether these assaults put Christianity in crisis has also been questioned. For example, In the book *Crisis of Doubt* (2006), Timothy Larsen argues that many Victorian sceptics, freethinkers, and secularists were reconverted to Christianity. He points out that the percentage of secularist leaders who became Christians was higher than that of Christian ministers who became sceptics.²⁴ His work demonstrates that the change of faith was not one-directional and that Christian churches did not always lose but often gained followers from opposite camps. Callum G. Brown also argues against a picture of gradual secularisation according to which Christianity had gradually lost its influence in British

²¹ Many writings on radicals show details of Victorian religion under the threat of secular thoughts and movements, such as: Owen Chadwick, *The Secularization of the European Mind in the Nineteenth Century* (Cambridge: Cambridge University Press, 1975); Edward Royle, *Victorian Infidels: The Origin of the British Secularist Movement, 1791–1866* (Manchester: University of Manchester Press, 1974); and Edward Royle, *Radicals, Secularists, and Republicans: Popular Freethought in Britain, 1866–1915* (Manchester: Manchester University Press, 1980).

²² This change in the historiography has been pointed out and furthered in the collection of essays: Richard J. Helmstadter and Bernard Lightman ed., *Victorian Faith in Crisis* (Stanford: Stanford University Press, 1990).

²³ Bernard Lightman, 'Robert Elsmere and the Agnostic Crises of Faith', in Helmstadter and Lightman ed., *Victorian Faith in Crisis*, pp. 283–314 (p. 295).

²⁴ Timothy Larsen, *Crisis of Doubt* (Oxford: Oxford University Press, 2006), p. vii.

society since the beginning of the nineteenth century. He argues that Christianity stopped being the British 'nation's core religious and moral identity' only from the 1960s, and before this decade, Britain was strongly Christian.²⁵

There are some other concerns among historians. The objectivity of the Victorians' own accounts of crises of faith can be problematic. Jeffrey von Arx points out, in his 'The Victorian Crisis of Faith as Crisis of Vocation' (1990), that some Victorian writings spreading the concept of the crisis of faith were written by heterodox religious people with the purpose of supporting their religious positions.²⁶ As these Victorian writings were coloured by stances, they should not be treated as objective accounts of the state of faith in Victorian Britain. The term 'faith' can also be seen as an umbrella term that does not simply mean Christianity. If we use wider definitions of it, faith can hardly be seen as in crisis. For example, James R. Moore argues, in his essay 'Theodicy and Society: The Crisis of the Intelligentsia', that faith is a theodicy, which aims to resolve apparent evil with divine existence.²⁷ He considers that naturalism was a new theodicy for the Victorians rather than an unbelief. By taking this view, Moore argues that faith in general was changing but was never in crisis in Victorian Britain.

It is agreed among historians that the faiths of many Victorians were unstable and changing. The vast numbers of religious organisations and publications at that time reflect people's efforts to find suitable beliefs. Their searches were not always painful but were often pleasurable, since these searches presented thrilling challenges and sometimes allowed those advocating their beliefs to make fortunes. As the phrase 'the Victorian crisis of faith' is considered problematic by historians, 'the Victorian ferment of faith' is used instead in this dissertation as a characterisation of religion in Victorian Britain. Faith in Victorian Britain can be seen as being in a state of ferment with many

²⁵ Callum G. Brown, *The Death of Christian Britain: Understanding Secularisation 1800–2000*, Second Edition (London: Routledge, 2009), p. 1.

²⁶ Jeffrey von Arx, 'The Victorian Crisis of Faith as a Crisis of Vocation', in Helmstadter and Lightman ed., *Victorian Faith in Crisis*, pp. 262–82.

²⁷ James R. Moore, 'Theodicy and Society: The Crisis of the Intelligentsia', *Ibid.*, pp. 71–125.

religious people agitated or excited by religious challenges and ‘tending to bring about a purer, more wholesome, or more stable condition’ of faith.²⁸

The historical study of pantheism in the Victorian ferment of faith is relatively lacking, compared with the studies of Christian denominations, deism, spiritualism, materialism, atheism, and agnosticism. The more specific study of the pantheistic uses of science in Victorian Britain is rarer still. The following works contain discussions of pantheism in early Victorian Britain. Thomas McFarland’s *Coleridge and the Pantheist Tradition* (1969) is a very useful guide to the history of pantheism in early nineteenth century Britain and before. McFarland draws out the links between Baruch Spinoza (1632–1677), German Idealists, and Coleridge, and gives his views about the origins of the terms ‘pantheism’. Richard Berkeley’s more recent book, *Coleridge and the Crisis of Reason* (2007), examines Coleridge’s response to the pantheistic controversy in Germany, and provides an insight about the influence of German pantheism on Coleridge.²⁹ Julia A. Lamm’s article ‘Romanticism and Pantheism’ in *The Blackwell Companion to Nineteenth-Century Theology* (2007) discusses the pantheistic element in German idealists’ philosophies from the 1780s to the early nineteenth century.³⁰ She briefly discusses the spread of this pantheistic element towards Britain and America, influencing the British poets Samuel Taylor Coleridge and William Wordsworth (1770–1850) and American poets and essayists Ralph Waldo Emerson (1803–1882) and Henry David Thoreau (1817–1862), in two short paragraphs. In literary studies, we can also find works on Wordsworth’s and Coleridge’s pantheistic poems and on the Scottish essayist Thomas Carlyle’s (1795–1881) pantheistic writings, such as M. H. Abrams’s *Natural Supernaturalism: Tradition and Revolution in Romantic Literature* (1973) and Martin Priestman’s *Romantic Atheism:*

²⁸ One of the definitions of the word ‘fermentation’ in *OED* <<https://www.oed.com/>> [accessed 20 August 2018].

²⁹ Richard Berkeley, *Coleridge and the Crisis of Reason* (Basingstoke: Palgrave Macmillan, 2007).

³⁰ Julia A. Lamm, ‘Romanticism and Pantheism’, in *The Blackwell Companion to Nineteenth-Century Theology*, ed. by David Fergusson (Oxford: Wiley-Blackwell, 2010), pp. 165–86.

Poetry and Freethought, 1780–1830 (1999).³¹ However, they use the category of Romanticism rather than pantheism, and they seldom discuss pantheism theologically and philosophically. In the studies of Romanticism and science that involve discussions of pantheistic thinkers, such as Trevor H. Levere’s *Poetry Realised in Nature: Samuel Taylor Coleridge and Early Nineteenth-Century Science* (1981) and Alan Richardson’s *British Romanticism and the Science of the Mind* (2001), pantheism is also seldom discussed.³²

Discussions of pantheism in mid- and late-Victorian Britain are even rarer. Ruth Barton’s article ‘John Tyndall, Pantheist: A Rereading of the Belfast Address’ (1987) discusses the evidence of Tyndall’s pantheistic tendencies in the 1874 Belfast Address and in his personal writings. She argues that Tyndall might have been a pantheist and that his annual mountaineering trips to the Alps might have been a pantheistic practice. Stephen Kim has argued against Barton in his *John Tyndall’s Transcendental Materialism and the Conflict between Religion and Science in Victorian England* (1996). Kim claims that Tyndall was a transcendentalist rather than a pantheist.³³ It seems that Kim considers that pantheists should deny transcendence, but Tyndall believed in transcendence, thus he concludes that Tyndall was not a pantheist. The disagreement between Barton and Kim mainly concerns the definition of pantheism. It is worth noting that those who were called pantheists in Victorian Britain did not always deny transcendence, and I will discuss the definition of pantheism in the next section. Lamm has also pointed out that almost no thinkers who have been called pantheists totally

³¹ M. H. Abrams, *Natural Supernaturalism: Tradition and Revolution in Romantic Literature* (New York: Norton, 1973); Martin Priestman, *Romantic Atheism: Poetry and Freethought, 1780–1830* (Cambridge: Cambridge University Press, 1999). Some of Carlyle’s writings were considered by some of his contemporaries to be pantheistic. This will be further demonstrated and discussed in the section 1.1.2 on poetical pantheism.

³² Trevor H. Levere, *Poetry Realised in Nature: Samuel Taylor Coleridge and Early Nineteenth-Century Science* (Cambridge: Cambridge University Press, 1981); Alan Richardson, *British Romanticism and the Science of the Mind* (Cambridge: Cambridge University Press, 2001).

³³ Stephen Kim, *John Tyndall’s Transcendental Materialism and the Conflict between Religion and Science in Victorian England* (Lewiston: Mellen University Press, 1996), pp. 11 and 45–46.

excluded transcendence with the probable exception of Spinoza.³⁴ If we do not narrow down the definition of pantheism to its strictest form (in which there is no sense of transcendence), then, as Barton has analysed, Tyndall was a possible pantheist. Nevertheless, Tyndall is not selected as an advocate of pantheism for analysis here since, in his published writings, he almost never used pantheistic terminologies and he rarely discussed the relationship between God and nature. There are currently not enough materials regarding Tyndall for this dissertation's purpose, though the John Tyndall Correspondence Project currently in progress may reveal more about his views on pantheism.³⁵

David Knight, in 'Higher Pantheism' and *Science and Spirituality*, claims that pantheism was 'a feather-bed' for the chemist Humphry Davy and others who fell from Christianity in the nineteenth century,³⁶ and that Davy's pantheistic sentiments might have influenced his pupil Michael Faraday (1791–1867) and, through Faraday, John Tyndall. He also points out that pantheism was attractive for the Victorians because it was a pro-science and non-denominational religious position with 'loose and accommodating' doctrines, and that many Victorians practiced pantheism because they disliked denominational religions while seeing science as a new vehicle of salvation. Herbert Schlossberg in his *Conflict and Crisis in the Religious Life of Late Victorian England* (2009) classifies pantheism as one of the alternatives to Christianity.³⁷ He points out that Victorian thinkers such as James Martineau and Frederic Harrison (1831–1923) observed that pantheism had been spreading widely in England since the mid-nineteenth century, and he suggests that the popularity of pantheism might have been caused by the influence of idealistic philosophy and the spread of ideas from Asia. Schlossberg also points out that to assume that the term 'pantheism' in Victorian Britain had only one meaning can be misleading, as Harrison observed that Victorians used the term 'pantheism' loosely with many meanings.

³⁴ Lamm, 'Romanticism', p. 166.

³⁵ See the website of the project <<https://tyndallproject.science.yorku.ca/>> [accessed 20 August 2018].

³⁶ Knight, *Science and Spirituality*, p. 86.

³⁷ Schlossberg, *Conflict and Crisis*, pp. 269–70.

From these writings, historians only have a vague picture, in which pantheism was present in the Victorian ferment of faith, gaining popularity among anti-Christian and pro-science people from the mid-nineteenth century, and worrying orthodox Christians. Detail is lacking. There are almost no accounts on pantheistic figures, except Tyndall whose status as a pantheist was dubious. Moreover, if pantheism was the religious position for many pro-science Victorians, then why have historians of science and religion not yet studied pantheism as an important case of the interaction between science and religion? These problems will be addressed in this dissertation.

Pantheism is a very philosophical religious position, so although this is a historical study, I will refer to the works of philosophers and theologians when analysing pantheistic theories and practices. Michael P. Levine's *Pantheism: A Non-Theistic Concept of Deity* (2005) is a modern philosophical account of pantheism.³⁸ He presents his work as the first complete attempt to offer a philosophical defence of pantheism after Spinoza's *Ethics* (1675). Spinoza was a key figure in modern and Western pantheism. Michael Della Rocca's *Spinoza* (2008) and Sherry Deveaux's *The Role of God in Spinoza's Metaphysics* (2007) can be of great help in understanding Spinoza's pantheism and its influence on German idealists.³⁹ The leader of the contemporary pantheist organisation, the World Pantheist Movement, Paul Harrison's book *Elements of Pantheism: A Spirituality of Nature and the Universe* is also useful in understanding how pantheism can be practiced.⁴⁰

Scholarship on panentheism deserves a mention. The term 'panentheism' was imported from the German term '*Panentheismus*', which was coined by the philosopher Karl Christian Friedrich Krause (1781–1832) in the early nineteenth century.⁴¹ In the collection of papers on panentheism, entitled *In Whom We Live and Move and Have Our Being* (2004), the term 'panentheism' is defined as the belief that the universe

³⁸ Michael P. Levine, *Pantheism: A Non-Theistic Concept of Deity* (London: Routledge, 2005).

³⁹ Michael Della Rocca, *Spinoza* (London: Routledge, 2008); Sherry Deveaux, *The Role of God in Spinoza's Metaphysics* (London: Continuum, 2007).

⁴⁰ Paul Harrison, *Elements of Pantheism* (USA: CreateSpace, 2013).

⁴¹ Anon, 'Panentheism', *OED* <<https://www.oed.com/>> [accessed 20 August 2018].

exists in God but that God's being is not exhausted by the universe,⁴² while pantheism is treated as the belief that God and the universe are strictly identified. The term 'panentheism' was almost never used by the Victorians, and it only become popular in the 1890s.⁴³ There has been a panentheistic movement in Christian theology in the twentieth and the twentieth-first centuries that makes the term popular among scholars.⁴⁴ It would be anachronistic to use this term in this dissertation, which focuses primarily on the 1850s to the 1870s, even though several advocates of pantheism in Victorian Britain could be classified as panentheists. The difference between pantheism and panentheism is principally a matter of definition, and this will be discussed in the next section.⁴⁵ John W. Cooper's book *Panentheism—The Other God of the Philosophers from Plato to the Present* (2013), contains a brief historical account of panentheism.⁴⁶ Cooper listed eight nineteenth-century English panentheists, though none of them are included in this dissertation as Victorian advocates of pantheism. Many of them belonged more to the theist camp than to the pantheist camp. Some of them, notably Samuel Alexander (1859–1938) and William Inge (1860–1954), held clear pantheistic ideas and associated these ideas with science. They can be further studied by historians to enrich our knowledge of pantheism and of the relationship between pantheism and science in Victorian Britain.

⁴² Arthur Peacocke, 'Introduction', in *In Whom We Live and Move and Have Our Being*, ed. by Philip Clayton and Arthur Peacocke (Grand Rapids: William B. Eerdmans, 2004), pp. xviii–xxii (p. xviii).

⁴³ When search for the keyword 'panentheism' in *Copac* <<https://copac.jisc.ac.uk/>> [accessed 28 August 2018], the oldest result is an 1892 article.

⁴⁴ Michael W. Brierley, 'Naming a Quiet Revolution: The Panentheistic Turn in Modern Theology', in Clayton and Peacocke ed., *In Whom We Live*, pp. 1–18 (pp. 1–2).

⁴⁵ McFarland also claims that panentheism cannot be separated from pantheism. McFarland, *Coleridge*, p. 269.

⁴⁶ John W. Cooper, *Panentheism—The Other God of the Philosophers* (Grand Rapids: Baker Academic, 2013).

Pantheism as a Historian's Category

The question of what counts as pantheism in Victorian Britain is not easy to answer. There was no organised religion or movement in Victorian Britain that labelled itself pantheism. I have located no evidence for religious societies, sects, or groups of pantheism in Victorian Britain. The Anglican clergyman Charles Maurice Davies (1828–1910) famously hunted sects between 1874 and 1875 in London. He visited religious gatherings each week and wrote a report after every visit. His reports were published in four works—*Unorthodox London* (1874), *Heterodox London* (1874), *Orthodox London* (1874–5), and *Mystic London* (1875).⁴⁷ His observations covered a very wide range of religious practices in London, but he did not report any pantheistic gatherings, and this constitutes strong evidence that there was no pantheistic organisation, at least in London. In addition, there was no pantheistic periodical; thus, even though pantheism was gaining popularity during the second half of the nineteenth century, it was not an organised movement like the Oxford Movement, Owenism, or Secularism. As pantheism was not an organised religion or movement, there existed no universal creed or manifesto of pantheism at the time, and people rarely called their position pantheism or themselves pantheists. This makes it difficult to identify pantheistic ideas and pantheistic thinkers.

The situation that thinkers in the past and present have many different definitions of pantheism, creates additional difficulties in the identification of pantheism. Among current historians, Kim and Lamm seem to define pantheism as the pantheism of Spinoza, according to which God must be absolutely identified with nature leaving no room for transcendence. According to this definition, Kim claims that Tyndall was not a pantheist, and Lamm claims that German idealists were not pantheists.⁴⁸ Knight defines

⁴⁷ Charles Maurice Davies, *Unorthodox London*, New Edition (London: Tinsley Brothers, 1876); Charles Maurice Davies, *Heterodox London* (London: Tinsley Brothers, 1874); Charles Maurice Davies, *Orthodox London*, Second Series (London: Tinsley Brothers, 1875); Charles Maurice Davies, *Mystic London* (London: Tinsley Brothers, 1875).

⁴⁸ Lamm's claim can be found in Lamm, 'Romanticism', pp. 181–82.

pantheism loosely, allowing a degree of transcendence; in other words, he includes what we now call ‘panentheism’ in ‘pantheism’. By this definition, Knight treats Davy as a pantheist. Schlossberg quotes Frederic Harrison’s words and claims that ‘pantheism’ in the 1880s could mean ‘nearly anything’.⁴⁹ Frederic Harrison’s original words were: ‘We may include under the somewhat technical term Pantheism *all* those types of thoughts, and conscious and unconscious tendencies of thought, which have this common sign—that they find the ultimate and dominant idea in some divine Mystery of the Universe, in the sense of Beauty and Power of Nature, in the immensity of the sum of Life and Matter’.⁵⁰ Here we see three definitions of pantheism from the strictest to the loosest.

Victorian thinkers’ definitions of pantheism were as inconsistent as our historians’ ones, and their definitions were usually influenced by their religious stances. It was common among those who rejected accusations of pantheism made against them, to use very narrow definitions of pantheism so that they could exclude their ideas from pantheism. For example, Herbert Spencer was accused of pantheism, since in the first chapter of his *First Principles* (1860) he posited an unknowable reality of which all things were manifestations, and he also claimed that this unknown reality was what God represented in true religions. His claim was identical to the pantheist creed that God is all and all is God; however he denied that his idea was pantheistic. According to his definition, the ‘hypothesis of self-creation’ was the core feature of pantheism. He claimed that self-creation was impossible because it implied the existence of potential universes before the real universe, and he considered that the idea that something potential (i.e., not existent) existed was paradoxical.⁵¹ He thus repudiated pantheism.

It was also common among Victorian essayists to use rather broad definitions of pantheism. For example, a writer in the High Church periodical, the *British Critic*, and

⁴⁹ Schlossberg, *Conflict and Crisis*, p. 270.

⁵⁰ Frederic Harrison, ‘Pantheism, and Cosmic Emotion’, *The Nineteenth Century*, 10 (1881), 284–95 (pp. 284–85).

⁵¹ Herbert Spencer, *First Principles of a New System of Philosophy*, Second Edition (New York: D. Appleton and Company, 1876), p. 32.

Quarterly Theological Review, considered that there were many ‘steps’ and ‘road[s]’ of pantheism.⁵² People were pantheistic according to him if they ‘reduce[d] God’s noble acts into forthgoings of some one principle, such as that of mercy or benevolence’, if they were ‘talking and thinking of the superiority of mind over matter well nigh akin to idolizing an abstract humanity’, if they were ‘speaking of the things of nature as if they were parts of God’, and if they ‘view[ed] human souls and all other motive powers in the universe as parts of the Divine Being, to whom the material world is as a body’.⁵³ Though he used a broad definition of pantheism, he excluded orthodox Christianity from pantheism.

Some advocates of pantheism gave even broader definitions of pantheism to the extent that almost all religions were included. For example, Constance Plumptre in her *General Sketch of the History of Pantheism* (1878–9) included Bishop George Berkeley (1685–1753) and agnostics (such as Tyndall and Spencer) among the pantheists. A reviewer in the Evangelical non-conformist journal, the *British Quarterly Review*, commented that Plumptre ‘often extends the term very much further, so as apparently to include all in who there has been a spirit of religiosity without any definite dogmatic theory. Thus widened out, Pantheism becomes simply the natural religious instinct’.⁵⁴

Due to the lack of consensus, I need to clarify what the term ‘pantheism’ denotes in this dissertation in order to define a clear object of study. In this dissertation, ‘pantheism’ is used to denote a spectrum of views concerning the relationship between God and the world and involving a particular emphasis on the immanence of God to the extent that God and the world are inseparable. It is a religious position that sees all in God and God in all while the essence of each may be or may not be exhausted by the other. In short, my treatment of pantheism is similar to Knight’s which includes what we now call ‘panentheism’ in ‘pantheism’. According to this definition, the category of

⁵² Anon, ‘Observations on the Attempted Application of Pantheistic Principles to the Theory and Historic Criticism of the Gospels’, *British Critic, and Quarterly Theological Review*, 31 (1842), 303–24 (p. 306).

⁵³ *Ibid.*, p. 306.

⁵⁴ Anon, ‘General Sketch of the History of Pantheism’, *British Quarterly Review*, 136 (1878), 577–78 (p. 578).

pantheism is wide enough to include more than the extreme form of pantheism but is not so wide as to include all religions.

To further explain, first, in this dissertation, pantheism is treated as a philosophical and theological position concerning the relationship between God and the world. Pantheism in Victorian Britain had its historical particularities. Victorian writings about pantheism were full of Christian terminologies like 'God' and 'divine'. The concept of God and the relationship between God and the world were central to both criticisms and defences of pantheism at the time. Pantheisms outside of Britain and at different times were not necessarily concerned with God or God's relationship with the world. For example, the manifesto of the World Pantheist Movement does not mention the terms 'God' or 'divine', and states the intention of keeping the pantheistic belief naturalistic.⁵⁵ There are no Christian supernatural terms in the classical writing of Taoism, *Tao Te Ching*, and the central concept of Tao is usually understood as the fundamental law of the world.⁵⁶ This historical particularity of pantheism in Victorian Britain was due to Victorian Britain being a Christian country and due to several pantheistic traditions in Europe having been cultivated within Christian cultures. Peter Harrison has pointed out that 'substantive questions to do with relations between the monotheistic Western religions and science cluster around a common set of issues, typically to do with God's power, his activity or his relation to the world'; although he also claims that 'non-theistic or polytheistic religious traditions raise a rather different set of questions', criticisms and supports of pantheism in Victorian Britain were actually centred around the set of issues he mentioned.⁵⁷

Secondly, pantheism is treated as a spectrum of views rather than as a singular point at the extreme of the spectrum. This was how many Victorians treated pantheism. Many Victorian thinkers did not see pantheism as an absolute identification of God and

⁵⁵ Anon, 'WPM Statement of Principles' <<https://www.pantheism.net/manifest/>> [accessed 20 August 2018].

⁵⁶ Lao Tzu, *Tao Te Ching*, trans. by D. C. Lau (Harmondsworth: Penguin Books, 1963).

⁵⁷ Peter Harrison, 'Introduction', in Harrison ed., *Cambridge Companion to Science and Religion*, 1–17 (p. 16).

the universe nor as the rejection of the transcendence of God.⁵⁸ The term ‘panentheism’ was extremely rare in Victorian writings, and they usually used ‘pantheism’ or ‘higher pantheism’ to address the position of ‘panentheism’. While the absolute identification of God and the world was a sign of pantheism, the immanence of God in the world was also a sign of pantheism. Many were labelled pantheists in Victorian Britain not because they believed in the absolute identification of God and the world denying God His transcendency, but because their views of the immanence of God was endorsed to higher degrees that traditional Christians normally would not tolerate.

There is a stereotype according to which Christian monotheism differs from pantheism in the sense that God is transcendental in Christian monotheism while God is immanent in pantheism. As I have discussed, many pantheists believed that God was both transcendent and immanent. Moreover, God in most traditional Christian beliefs can be interpreted as being both transcendent and immanent, and this is reflected in the doctrine of the Trinity in which the Father is the transcendental aspect of God while the Son and the Spirit are the immanent aspects of God. As James R. Moore points out, Anglican clergymen Aubrey Lackington Moore (1843–1890) and Charles Kingsley (1819–

⁵⁸ For example, see M. G. E., ‘Pantheism, its Historical Phases’, *Journal of Sacred Literature and Biblical Record*, 6 (1858), 294–312. The author argued against French philosopher Victor Cousin’s denial of accusations of pantheism. He wrote: ‘God, say they [Cousin and his followers], is not exhausted in the universe, [...] therefore it is as absurd to say the universe is God [...]. It would be wrong, say they, to confound the universe with God, though the universe (i.e., the sum of all finite things), be for the time being the whole consciousness of God. The universe is God, but not the whole of God. [...] Cousin may therefore well deny that the universe is God; and if saying “the universe is God” is pantheism, then he may repudiate pantheism; but he does not deny that God is the universe. [...] “All that is, is God,” that is pantheism. The universe is con-substantial and co-eternal with God. It does not exhaust God, for he is being constantly developed in the world; and there is no God without the world and apart from it. Such is the modern philosophical form of pantheism, and in this sense Cousin is undoubtedly a pantheist. [...] There is what the Germans call a false pantheism—a system which teaches that God is nothing but the universe, and that as the universe is finite, God is finite. This system Cousin rejects’ (305–6).

1875) used this interpretation of the Trinity to reconcile Darwinian science and Christianity and to argue against deism and pantheism.⁵⁹ People normally do not consider holding the doctrine of the Trinity to be pantheistic, even though the immanence of God is implied in the doctrine.

What is the difference between Christian monotheism and pantheism then? I propose that the difference between them is to be found in the degree of immanence of God rather than in the question of whether God is transcendent or immanent. In traditional Christian beliefs, there is a strong sense that God and the world are different things, that God is the creator and designer of the world, and that God is immanent in the world in the sense that He energises and governs the world. God can leave the world if He is willing to, and man and God are different individuals. In pantheism, God and the world are inseparable, the world is God himself, either partially or fully, with man being one with God. This difference in immanence was also mentioned by Victorian thinkers. For example, John Hunt, a clergyman of the Church of England, wrote in his *An Essay on Pantheism* (1866) that '[t]he difference between ordinary Theism and what is called Pantheism, is perhaps most distinctly seen in the question of God's immanency in the universe. Does God abide in His creation, or is He seated on a silent throne in some far distant region beyond the boundary wall of the universe?'.⁶⁰ In practice, for traditional Christians, the world is the land of trial and they need to be forgiven by God in order to live an eternal happy life in heaven; for pantheists, the world is already Eden and they are already one with God. Pantheists can satisfy their religious needs by conceiving the world as heaven and themselves as existing in God. This can be blasphemous for Christians.

The boundary of pantheism in Victorian Britain can be made clearer by contrasting pantheism with other non-Christian positions. Compared to atheists, pantheists affirmed the existence of God, which atheists denied. Compared to materialists, pantheists used supernatural terminology, which materialists usually did not use. Compared to spiritualists, pantheists usually denied the existence of the after-life,

⁵⁹ James R. Moore, *The Post-Darwinian Controversies* (Cambridge: Cambridge University Press, 1979), p. 339.

⁶⁰ John Hunt, *An Essay on Pantheism* (London: Longmans, 1866), p. 355.

which spiritualists affirmed. Compared to agnostics, pantheists had claims over the ultimate nature of the world and God, while agnostics tried to remain silent. There is a risk here of over-simplification, and it must be noted that the boundaries between pantheism and other religious positions were never settled.

According to this definition, Victorian thinkers who clearly expressed their support for pantheism are the object of study of this dissertation. Charles Bray, John Hunt, James Allanson Picton, James Hinton, and Constance Plumptre, are of this type. I have also included Victorian thinkers who did not directly articulate their support for pantheism but supported the identification of God and the world or supported higher degrees of the immanence of God in the world, and who were accused of pantheism by their reviewers. Alfred Barratt, James Martineau, and Thomas Elford Poynting are of this type. I have not included Victorian thinkers who were accused of pantheism but who almost never discussed the identification of God and the world or the immanence of God, such as Tyndall and Spencer. This dissertation also focuses on philosophical, theological, and scientific figures who expressed ideas explicitly, while literary figures, such as Wordsworth, Alfred Tennyson (1809–1892), and Carlyle, whose poetical expressions were often vague, are generally not studied in this dissertation.

It is important to note that Victorian pantheistic thinkers are not directly called 'pantheists' in this dissertation, but are rather called 'advocates of pantheism', 'supporters of pantheism', or 'pantheistic thinkers'. This is because although most of them advocated pantheistic ideas, they did not call themselves pantheists, and some of them even explicitly or implicitly expressed that they did not wish to be assigned this label. The term 'pantheist' was indefinite and perceived by many people as notorious in Victorian Britain. It was normally not beneficial for a Victorian to call himself or herself a pantheist. Hunt, Picton, Martineau, and Poynting preferred to be identified as Christians. Hunt was a clergyman of the Church of England, Picton was a minister of Congregationalism, and Martineau and Poynting were ministers of Unitarian churches. They advocated their pantheistic systems as Christian theologies rather than as being in opposition with Christianity. Plumptre and Bray did not belong to any churches and they sometimes stood against Christianity. Even so, they usually identified as freethinkers rather than as pantheists. Hinton was a preacher of his own pantheistic religion, though he also did not call himself a pantheist. Thus, considering these thinkers'

preference, and in order to avoid confusions when discussing their refutations of the label 'pantheist', they are not called pantheists in this dissertation. Advocates, supporters, or thinkers of pantheism are more accurate titles.

Dissertation Structure

This dissertation is mainly based on published materials accessed through the ProQuest British Periodicals Database, the Hathi Trust Digital Library, the Internet Archive, and the libraries of the University of Leeds. As I am exploring an uncharted territory in the historiography, and due to the constraint of time of a doctoral project, I have decided to focus on publications and to leave out the great number of unarchived and unsorted private sources. By examining published materials, I intend to identify major advocates of Victorian pantheism, and to present their views of pantheism, their views of science and religion, their motivations, and what their reviewers or critics said.

This dissertation is composed of five chapters. The first chapter gives an overview of two main aspects of pantheism in Victorian Britain—the traditions of pantheism that existed from the beginning of the Victorian era and Victorians' views of pantheism expressed in publications. I argue in the first section of the chapter that there were three pantheistic traditions that were particularly influential in Britain from the beginning of the Victorian era. They were Spinozian and German idealistic pantheism, poetical pantheism, and materialistic pantheism. I argue and demonstrate in the second section of the chapter that there was a significant change in the general attitude towards pantheism in British publications in the 1860s from overwhelmingly negative to neutral or slightly positive.

The second chapter is a biographical chapter. I introduce the lives and pantheistic ideas of the eight Victorian advocates of pantheism. I demonstrate that advocates of pantheism came from a very wide range of religious backgrounds and that they held different, and sometimes controversial, pantheistic ideas. I also demonstrate that pantheism was not necessarily against Christianity, as some advocates of pantheism claimed that pantheism was a Christian theology.

The next three chapters give accounts of the uses of science in support of pantheism by Victorian advocates of pantheism. These chapters are structured according to the

three major themes of Victorian science—force, matter, and evolution. Each theme composes a chapter. The layouts of these three chapters are generally the same. In the first sections, I introduce relevant scientific developments that were used by pantheistic thinkers, while in the subsequent sections, I give detailed accounts of how these theories were used by pantheistic thinkers. I show that these pantheistic thinkers drew heavily on contemporary scientific theories in support of their pantheistic ideas, and that several relevant scientific theories and scientific practitioners were accused of pantheism.

Throughout the dissertation, I demonstrate that pantheism in Victorian Britain was a significant religious position, which attracted attention from many thinkers. There were supporters as well as critics of pantheism from almost all kinds of religious backgrounds. I also demonstrate that pantheism in Victorian Britain often appeared in discussions of science, and that it was often treated as a science-related religion, not only by supporters but also by critics. This dissertation contributes an extended historical account of pantheism and of pantheism and science in Victorian Britain to scholarship on Victorian religion and on Victorian science and religion.

1

Pantheism in Victorian Britain

In the early Victorian era, British thinkers were aware of many pantheistic traditions around the world. Among them, three traditions attracted the most attention since they were seen as influential on British people's minds. These three traditions were Spinozian and German idealistic pantheism, poetical pantheism, and materialistic pantheism. Other traditions, mainly ancient Greek pantheism, Neo-Platonism, and Indian pantheism, were sometimes mentioned but were not normally associated with British thought, as these traditions seemed alien to the Victorians. In the early Victorian era, comprehensive works on pantheism were notably lacking in Britain. The three influential pantheistic traditions were discussed fragmentally, and I have yet to come across an article mentioning them all at once. Later in the century, many British thinkers became more aware of these three influential traditions and began listing them together in their writings. For example, Evangelical minister Thomas Pearson in his *Evangelical Alliance Prize Essay on Infidelity* (1854) gave an introduction to, what he called, the pantheistic aspect of infidelity.⁶¹ He began with the German idealists who, he pointed out, were greatly influenced by Spinoza; and then he introduced the pantheism of French socialists; finally, he gave an short account of the circulation of pantheistic poems in Britain. These three traditions held a foundational role in the development of pantheism in Victorian Britain and were often mentioned by Victorian thinkers, however, these traditions are rarely mentioned by historians. In the first section of this chapter I give an account of these pantheistic traditions so that we can better understand the later development of Victorian pantheism.

There was a significant change in the general attitude towards pantheism in British publications during the Victorian era from overwhelmingly negative to neutral or

⁶¹ Thomas Pearson, *Evangelical Alliance Prize Essay on Infidelity: Its Aspects, Causes, and Agencies* (London: Partridge, Oakey, & Co., 1854).

slightly positive. This significant change in views of pantheism has not yet been mentioned in the historiography, thus, I give an account of this change in the second section of this chapter. I will show that discussions of pantheism from the 1830s to the 1850s were mostly negative. Pantheism in these early decades was often treated as an erroneous doctrine and sometimes even as an evil one. Attitudes towards pantheism changed greatly in the 1860s. While criticisms remained, many positive views also emerged and continued to emerge in the following decades. In addition to the advocates of pantheism, many positive responses came from non-advocates. Many British thinkers, critics or not, began to consider that former treatments of pantheism in Britain had been very biased, and they began to treat pantheism as a respectable approach to religious questions. It is important to note that pantheism did not always hold a negative connotation in Victorian Britain and that many Victorian thinkers from the 1860s endeavoured to treat pantheism more fairly.

1.1 Pantheistic Traditions

1.1.1 Spinoza and German Idealistic Pantheism

In the beginning of the Victorian era, Spinoza's philosophy and German idealistic philosophies constituted the strongest philosophical tradition of pantheism in Europe. Samuel Taylor Coleridge and Humphry Davy were both fascinated by Spinoza's philosophy. When Victorian thinkers mentioned pantheism, they often explicitly or implicitly associated it with the monistic philosophies of Spinoza and his followers. As Thomas McFarland points out, the earliest available text mentioning the term 'pantheist' was a 1705 pamphlet written by the Irish-born freethinker John Toland (1670–1722), and his 1720 book *Pantheisticon* shows that he used this term as a synonym of 'Spinozist'.⁶² Toland's text reflects that when the term pantheism was used in the early eighteenth century, it was strongly associated with Spinoza. Spinoza was a seventeenth-century Dutch philosopher of a Portuguese-Jewish origin who was born in Amsterdam. He was dissatisfied with the theology of the Jewish community in

⁶² McFarland, *Coleridge*, pp. 266–67.

Amsterdam and was excommunicated in 1656 for heresy. He moved to Rijnsburg on the western coast of the Netherlands in 1661 and then moved again in 1663 to Voorburg, which is a few miles north of Rijnsburg.⁶³ During these years, he mainly worked on his philosophical writings and lived by grinding lenses and from small sums received through patronage. Spinoza's full philosophical system was published posthumously in 1677 in *Ethica ordine geometrico demonstrata* (Ethics Demonstrated in Geometrical Order).

Spinoza's philosophy, as summarised by Michael Della Rocca, is characterised by rationalism and naturalism.⁶⁴ Spinoza's rationalism can be seen as a strict commitment to what philosophers call the Principle of Sufficient Reason (PSR). The PSR asserts that for everything that exists, there must be sufficient reason to explain why it exists.⁶⁵ Ontologically, the PSR asserts that everything must have a cause, and that there is no non-causal existence. Spinoza's naturalism was the view that everything in the world was governed by the same principles.⁶⁶ By strictly following the PSR and his associated naturalism, Spinoza denied Descartes and others' dualism of mind and matter which asserted that there were two kinds of substances—spiritual and material—governed by different principles. Spinoza claimed that there was only one substance. This one substance had infinite attributes though humans could only perceive two attributes—thought and extension. Each attribute had many modes and these modes were the things humans perceived. While modes were causal, there were no causal relations between attributes—i.e., mind and body had no causal relationship. For Spinoza, mind and body were parallel, and they were two '*ways of conceiving or explaining* the same thing'.⁶⁷ Rocca also points out that Spinoza's view of mind was panpsychic, since

⁶³ Steven Nadler, 'Baruch Spinoza', in *SEP* <<https://plato.stanford.edu/>> [accessed 28 August 2018].

⁶⁴ Rocca, *Spinoza*, pp. 1–5.

⁶⁵ Yitzhak Y. Melamed and Martin Lin, 'Principle of Sufficient Reason', in *SEP* <<https://plato.stanford.edu/>> [accessed 28 August 2018].

⁶⁶ Rocca, *Spinoza*, p. 5.

⁶⁷ Rocca, *Spinoza*, p. 101.

everything had a mind in Spinoza's view.⁶⁸ Spinoza denied freewill on the grounds that freewill was a non-causal existence functioning as a cause of the causal world, and this violated the PSR and Spinoza's naturalism. For Spinoza, everything was caused, and human desire and volition were not exceptions.

Pantheism in Spinoza's philosophy was explicit. Spinoza identified God with the one substance by definition at the beginning of his *Ethics*. He wrote that '[b]y God (*Deus*) I understand a being absolutely infinite', and that '[e]xcept God no substance can exist or be conceived'.⁶⁹ His God shared some similarities with the traditional Christian God, such as eternity, infinity, omnipresence, omniscience, being the first cause, and being free of outside causes; but it was also fundamentally different from the traditional Christian God since it was not personal (not human-like), did not have freewill, was not extramundane, and did not give final causes to things. Spinoza used the term 'God' as a synonym of the substance throughout the whole of his *Ethics*. He also used the personal pronouns 'he' to address God. For example, when proving propositions about the mind-body relationship, Spinoza wrote: 'All modes of thinking have God for their cause, in so far as he is a thinking thing and not in so far as he is explained by another attribute'.⁷⁰ Such a rhetoric was similar to orthodox Christian rhetoric about God, and it made *Ethics* look religious. By using this rhetoric, Spinoza's philosophy provided a direct source for later pantheistic thinkers. He even claimed that Saint Paul agreed with him since the apostle said that 'in him [God] we live, and move, and have our being'.⁷¹ Spinoza's alterations of the concept of God and the Bible and his determinism were too radical to be accepted by most Christian thinkers at the time in Europe. This was why Spinoza chose not to publish his *Ethics* before he died. Due to its denial of the

⁶⁸ Rocca, *Spinoza*, p. 110.

⁶⁹ Baruch Spinoza, *Ethics*, trans. by Andrew Boyle and revised by G. H. R. Parkinson (London: J. M. Dent & Sons Ltd, 1989), pp. 3 and 12.

⁷⁰ Spinoza, *Ethics*, p. 86.

⁷¹ McFarland, *Coleridge*, p. 269; Acts 17.28.

personality, freewill, and transcendence of God, Spinoza's philosophy was criticised as atheism and viewed negatively for about a hundred years.⁷²

The revival of Spinoza's philosophy began from the mid-1780s in Germany. The German philosopher Friedrich Heinrich Jacobi (1743–1819) in his book *Ueber die Lehre des Spinoza* (On the Doctrine of Spinoza) (1785) reported Gotthold Ephraim Lessing's (1729–1781) conversion to Spinoza's philosophy. Lessing was one of the most prominent philosophers of the Romantic era. Jacobi reported a conversation with Lessing before Lessing's death, in which Lessing said: 'There is no other philosophy than the philosophy of Spinoza'.⁷³ The words of Lessing gave rise to a burst of sympathy for Spinoza's philosophy among German thinkers. Philosophers, such as Johann Wolfgang von Goethe (1749–1832), Johann Gottfried Herder (1744–1803), Friedrich Schlegel (1772–1829), Johann Gottlieb Fichte (1762–1814), Friedrich Hegel (1770–1831), Friedrich Wilhelm von Schelling (1775–1854), Friedrich Schleiermacher (1768–1834), and Arthur Schopenhauer (1788–1860), were inspired by Spinoza's *Ethics* to formulate monistic philosophies with different degrees of commitment to the PSR and Spinoza's naturalism. McFarland points out that their idealistic turning was influenced by Kant. Kant separated phenomena from noumena (which meant things as they were in themselves) while implying that noumena were unknowable. According to McFarland, these German thinkers eliminated noumena and claimed mind as the only substance.⁷⁴

Many of these German idealists treated the one substance as God, like Spinoza did, and a new religion of Spinozism was even proposed by some idealists in the 1790s. As quoted by McFarland, physicist Georg Christoph Lichtenberg (1742–1799) said in 1790 that 'if the world is still standing in a countless number of years, then the universal religion will be a purified Spinozism'.⁷⁵ Schlegel also proposed a 'new religion' founded on 'monistic nature philosophy' in 1798, and Schelling was in support of it.⁷⁶ These cases

⁷² McFarland, *Coleridge*, pp. 72–73; Rocca, *Spinoza*, p. 285.

⁷³ See McFarland, *Coleridge*, p. 79 for original Germany source.

⁷⁴ McFarland, *Coleridge*, pp. 90–91.

⁷⁵ McFarland, *Coleridge*, p. 84.

⁷⁶ McFarland, *Coleridge*, pp. 103–04.

show that many prominent thinkers in late eighteenth-century Germany already began to advocate the view that pantheism could offer a better alternative to the traditional Christianity.

Coleridge and Davy were both greatly influenced by the German revival of Spinoza's philosophy. A physician friend of Coleridge, Clement Carlyon (1777–1864), reported a dinner attended by Coleridge and Davy and others in his lodgings in London in the autumn of 1803.⁷⁷ Late in the evening, at Coleridge's request, Davy presented his poem entitled 'Spinozism'.⁷⁸ As Carlyon commented, the poem was 'conceived as much at least in the spirit of Christianity as of Spinozism'.⁷⁹ In his poem, Davy presented a Spinozian world that was divine and fully causal, but somehow the transcendent creation of the world still occurred and human souls were immortal. For example, his lines that 'All, all is change; the renovated forms | Of ancient things arise and live again' seems to assert an unbroken causality in all things. By contrast, 'A sacred spark, created by His breath | The immortal mind of man His image bears' seems to assert the existence of an extramundane God and the immortal soul of man. Coleridge was also on the one hand enthusiastic about Spinoza's philosophy and saw divinity in nature, but on the other hand remained dissatisfied by the loss of the personality of God and human free will.⁸⁰ Thus, despite pantheism being so abundant in his writings, Coleridge criticised and rejected pantheism.⁸¹

In Germany, pantheistic doctrines were also applied in Biblical criticism, and this gave rise to some concerns among British thinkers. The orientalist William Hodge Mill (1792–1853), who held the office of Christian Advocate at the University of Cambridge between 1840 and 1844, wrote *Observations on the Attempted Application of*

⁷⁷ Clement Carlyon, *Early Years and Late Reflections* (London: Whittaker and Company, 1836), p. 198. McFarland mentions this source in a short footnote. McFarland, *Coleridge*, p. 87.

⁷⁸ The poem can be read in Carlyon, *Early Years*, pp. 235–38.

⁷⁹ Carlyon, *Early Years*, p. 239.

⁸⁰ David Fergusson, ed., *The Blackwell Companion to Nineteenth-Century Theology* (Oxford: Wile-Blackwell, 2010), p. 79.

⁸¹ McFarland, *Coleridge*, pp. 112 and 190.

Pantheistic Principles to the Theory and Historic Criticism of the Gospels (1840) to refute the German philosopher David Friedrich Strauss's (1808–1874) application of Hegelian pantheism in the highly controversial work *The Life of Jesus Critically Examined* (1835–6).⁸² Strauss's *The Life of Jesus* appeared to many as undermining the historical authenticity of the Gospels by interpreting most Gospel stories as myths. By myths, Strauss meant fictions regarding which we cannot know whether they were based on real events or were purely imaginary. For many Christians, if the Gospels proved to be mostly fictional, then the foundation of Christian belief would be threatened. Most criticisms of this book therefore concentrated on Strauss's mythical interpretation of the Gospels.⁸³ Mill went beyond appearances and realised that Strauss's motivation in writing this book was 'far more [...] a desire of working out on a historical ground the philosophical principles of his master [Hegel], than [...] any attachment to mythical theories on their own account'.⁸⁴ He saw that Strauss's deconstruction of the supernaturalness of Jesus followed the same pattern as the pantheistic deconstruction of the supernaturalness of God. He wrote that, in Strauss's work, 'the Christ is no longer in origin and essential glory infinitely above his brethren of mankind, but a generic expression of what is common to his Church,—a mere reflex of ideal Christendom, as the pantheistic God is a reflex of the world'.⁸⁵ He also saw that Strauss's Christology was an extension of Hegelian pantheism. He wrote that 'the newest philosophy [...] teaches that when God is spoken of as a Spirit, it is a necessary consequence of that statement that, so far as man is spirit, there is no distinction or difference between them. [...] God and man are one'.⁸⁶ Strauss claimed that 'Humanity is the union of the two natures—

⁸² W. H. Mill, *Observations on the Attempted Application of Pantheistic Principles to the Theory and Historic Criticism of the Gospels*, Second Edition (Cambridge: Deighton, Bell, and Co., 1861), p. 1.

⁸³ Horton Harris, *David Friedrich Strauss and His Theology* (Cambridge: Cambridge University Press, 1973), p. 66.

⁸⁴ W. Mill, *Observations*, pp. 11–12.

⁸⁵ W. Mill, *Observations*, p. 8.

⁸⁶ W. Mill, *Observations*, p. 25.

God become man, the infinite dirempting [separating] itself into the finite, and the finite spirit remembering its infinitude', and that 'by the kindling within him of the idea of humanity, the individual man participates in the divine-human life of the species'.⁸⁷ In Strauss's view, humanity was Jesus, and to know his philosophy was the way of salvation. Under his interpretation, the Gospels taught us to follow the universal process in which all finite spirits would eventually merge into God's infinite spirit.⁸⁸ Mill thus warned readers of pantheism in Strauss's mythical interpretation of the Gospels.

1.1.2 Poetical Pantheism

While Spinoza and German idealism might have seemed foreign to the Victorians, poetical pantheism was a more familiar pantheistic tradition in nineteenth-century Britain. The phrase 'poetical pantheism' was used by many Victorian thinkers to denote this tradition. For example, an 1863 essay in the critical journal, the *Saturday Review of Politics, Literature, Science and Art*, was entitled 'Poetical Pantheism'.⁸⁹ As the essayist pointed out, poetical pantheism was different from 'the old habit of personifying the processes of nature' or 'the common poetical licence of attributing human passions to the elements' (558). He defined this phrase as a 'real and earnest belief in spiritual vitality underlying all we see around us, and an attempt to interpret the evidences of this life for no mere purposes of literary illustration, but in the search for truth and harmony throughout the universe' (558). Simply anthropomorphising nature or natural objects did not count as poetical pantheism; the essence of poetical pantheism was the belief in an immanent deity throughout nature. The essayist named William Wordsworth as the founder of poetical pantheism. 'It was Wordsworth who first developed this poetical pantheism, and heard one voice in nature' (558). Percy Shelley (1792–1822) was considered 'a far more proper and philosophical exponent of this pantheism' (559). The essayist claimed that '[i]n Shelley the pure poetical pantheism reaches its highest development' (559). The essayist also considered that the trace of

⁸⁷ These are Harris's translations. See Harris, *Strauss*, pp. 55–56.

⁸⁸ Harris, *Strauss*, p. 56.

⁸⁹ Anon, 'Poetical Pantheism', *Saturday Review*, 15 (1863), 558–59.

Schelling's philosophy could be found in Wordsworth's pantheistic poems while a mystic Platonism could be found in Shelley's poems. By contrast, Alfred Tennyson was considered to have shown fewer philosophical traces in his pantheistic poems.

Poetical pantheism can be seen as a product of the Romantic movement in Europe in the late eighteenth century and the first half of the nineteenth century. A major goal of the romantic movement was to explore the value of emotion and intuition, counteracting the emphasis on the value of reason of the past centuries. It was common among Romantic poets to express deep sentiments aroused by natural scenes. Some of them expressed religious experiences evoked by conceiving a unified intelligence, willpower, or spirit running through the whole of nature. As the aforementioned essayist from the *Saturday Review* pointed out, poets who were influential in spreading pantheism through poetry in Britain included Wordsworth, Shelley, and Tennyson. The famous American pantheistic poet and essayist Ralph Waldo Emerson can be added to the list, since Emerson's pantheistic poems were also read in Britain. The famous Scottish essayist Thomas Carlyle, though not a poet, also deserves a mention here since he often promoted his natural supernaturalism in his lectures and writings. Turner and Barton consider Carlyle's natural supernaturalism to be a naturalistic and pantheistic inspiration for many Victorian scientific practitioners, such as Spencer, Huxley, Tyndall, and Francis Galton (1822–1911).⁹⁰ M. H. Abrams and Martin Priestman point out that these literary figures used supernatural terminologies to describe the objects that they believed to be purely natural.⁹¹ For example, as we will see below, Wordsworth used the term 'sublime' to describe a religious experience aroused by natural things, while this term was commonly used to describe a religious experience aroused by supernatural things. His verses on the one hand described nature as divine, and on the other hand, implied that the supernatural was natural, consequently deconstructing the supernatural. His poems were associated with pantheism because they implied an immanent deity in nature.

⁹⁰ Frank Turner, 'Victorian Scientific Naturalism and Thomas Carlyle', *Victorian Studies*, 18 (1975), 325–43; Barton, 'John Tyndall', pp. 111–13.

⁹¹ Priestman, *Romantic Atheism*, p. 3; Abrams, *Natural Supernaturalism*.

The following lines that Wordsworth wrote a few miles above Tintern Abbey on 13 July 1798 was a famous example of poetical pantheism:

a sense sublime
Of something far more deeply interfused,
Whose dwelling is the light of setting suns,
And the round ocean, and the living air,
And the blue sky, and in the mind of man;

A motive and a spirit, that impels
All thinking things, all objects of all thought,
And rolls through all things.⁹²

As Jonathan Roberts argues, Wordsworth expressed his religious epiphanies in such lines, leading readers to see the divine nature of things and to feel the compassionate and nourishing aspect of nature, while at the same time not requiring him to commit himself to a specific religious position or to use supernatural conceptions.⁹³ Due to the vagueness of Wordsworth's poems, they were used to support various beliefs, including pantheism as well as various branches of Christian monotheism.⁹⁴ Wordsworth had a good relationship with the established Church of England. Through subtle use of his poetic talent, he never explicitly committed to a specific religious position in his writings.

⁹² William Wordsworth, 'Lines Composed a Few Miles above Tintern Abbey', in *Selections from the Poems of William Wordsworth*, ed. by W. H. Venable (New York: American Book Company, 1898), pp. 92–97.

⁹³ Jonathan Roberts, 'Wordsworth on Religious Experience', in *The Oxford Handbook of William Wordsworth*, ed. by Richard Gravil and Daniel Robinson (Oxford: Oxford University Press, 2015), pp. 693–711 (p. 710).

⁹⁴ J. Roberts, 'Wordsworth', p. 703.

Many of his contemporaries debated on whether his God was nature itself or was a supernatural existence.⁹⁵

The following lines from Shelley's famous poem 'Ode to the West Wind' written in a wood near Florence in 1819 gives a taste of Shelley's pantheism.

Wild Spirit, which art moving everywhere;
Destroyer and preserver; hear, oh, hear!⁹⁶

Shelley was a radical poet who spoke against social oppression, injustice, and violence; and he was greatly influenced by Wordsworth and Coleridge although he never met them.⁹⁷ James Bieri points out that Shelley translated Spinoza's works, thus Spinoza's philosophy might also have been an influence in his pantheistic view of nature.⁹⁸ Many Victorian readers saw pantheism in Shelley's poems. For example, the Victorian poet Roden Noel (1834–1894) found that Shelley's pantheism was 'overt'.⁹⁹ The essayist of the *Saturday Review* mentioned above commented that 'Shelley distinguishes the one vital force of nature under many names, and calls it almost indifferently Beauty, Life, and Light, and Love', and he claimed that what Shelley exemplified was 'not merely poetry borrowing the forms of pantheism, but pantheism putting on the dress of poetry'.¹⁰⁰

⁹⁵ For example, see Stephen Gill's account in Stephen Gill, *Wordsworth and the Victorians* (Oxford: Clarendon, 1998), pp. 63–70. Also, there was a case not mentioned by Gill which can be found in Principal Shairp, 'Wordsworth and "Natural Religion"', *Good Words*, 25 (1884), 307–13. Shairp claimed that Wordsworth's God was supernatural, while the author of the book he reviewed claimed that Wordsworth's poems inspired readers to see nature as God.

⁹⁶ Percy Bysshe Shelley, 'Ode to the West Wind', *The Poems of Shelley*, Volume III, ed. by Jack Donovan, et al. (Harlow: Longman and Pearson, 2011), pp. 204–12 (p. 206).

⁹⁷ James Bieri, *Percy Bysshe Shelley* (Baltimore: The Johns Hopkins University Press, 2008), pp. xi and xiii.

⁹⁸ Bieri, *Shelley*, p. 499.

⁹⁹ Roden Noel, 'Lord Byron and His Time', *The Saint Pauls Magazine*, 13 (1873), 618–38 (p. 622).

¹⁰⁰ Anon, 'Poetical Pantheism', *Saturday Review*, 15 (1863), 558–59 (p. 559).

Tennyson was Queen Victoria's Poet-Laurate succeeding Wordsworth after the latter's death in 1850.¹⁰¹ He wrote a poem using the phrase 'The Higher Pantheism' as the title published in 1869.¹⁰² In the poem, he expressed his belief that nature was created by God but was not entirely separated from God.¹⁰³ For example, he wrote:

God is law, say the wise; O soul, and let us rejoice,
For if He thunder by law the thunder is yet His voice.

Law is God, say some; no God at all, says the fool,
For all we have power to see is a straight staff bent in a pool;

And the ear of man cannot hear, and the eye of man cannot see;
But if we could see and hear, this Vision-were it not He?¹⁰⁴

An anonymous reviewer in the *North British Review*, a Presbyterian periodical, commented that the God presented in these lines was too personal to be considered a pantheistic deity. In the reviewer's view, a pantheistic God should be non-personal, but Tennyson was nonetheless satisfied with the title 'The Higher Pantheism' since he considered that this phrase described the harmonious feeling he felt when conceiving both a personal God and a divine nature.¹⁰⁵

Emerson was one of the founders of the transcendental movement in early nineteenth-century America which shaped American spirituality. As his writings were widely circulated in Britain, he deserves a mention here. Emerson was a minister in the

¹⁰¹ Christopher Ricks, 'Tennyson, Alfred, First Baron Tennyson', in *ODNB* <<https://www.oxforddnb.com/>> [accessed 28 August 2018].

¹⁰² See Alfred Tennyson, *The Holy Grail and Other Poems* (London: Strahan and Co., 1869), pp. 163–64.

¹⁰³ Nathan A. Cervo, 'Tennyson's "The Higher Pantheism"', *Explicator*, 63 (2005), 76–78.

¹⁰⁴ Tennyson, *Grail*, pp. 163–64.

¹⁰⁵ Anon, 'Mr. Tennyson's Poetry', *North British Review*, 53 (1871), 378–425 (p. 380).

Unitarian Church before he resigned for the reason that the ecclesiastical religion was too restrictive for him.¹⁰⁶ He found that Wordsworth's and Coleridge's expressions of the spiritual sentiments inspired by nature were more in tune with his own feelings, and he also read German idealists.¹⁰⁷ In his half-philosophical and half-poetical work *Nature* (1837), Emerson proposed that we should 'enjoy an original relation to the universe'.¹⁰⁸ He encouraged readers to find spiritual inspiration, atheistic sentiments, and guidance for life directly from nature, rather than from other people's words, including the Bible.¹⁰⁹ Emerson found God in nature as well as in man. He wrote that

the dread universal essence [...] is that for which all things exist, and that by which they are; that spirit creates; that behind nature, throughout nature, spirit is present; one and not compound, it does not act upon us from without, that is, in space and time, but spiritually, or through ourselves.

[...]

The world proceeds from the same spirit as the body of man. It is a remoter and inferior incarnation of God, a projection of God in the unconscious.¹¹⁰

He saw humans as the conscious incarnation of God, while nature was God's unconscious incarnation. The Evangelical minister Thomas Pearson in his *Evangelical Alliance Prize Essay on Infidelity* (1854) pointed out: 'In some of the transatlantic productions which are circulating among us, we meet with the system [pantheism] in its poetic or most attractive form. The Emerson school, which numbers many disciples

¹⁰⁶ David M. Robinson, 'Transcendentalism and Its Times', in *The Cambridge Companion to Ralph Waldo Emerson*, ed. by Joel Porte and Sandra Morris (Cambridge: Cambridge University Press, 1999), pp. 13–29 (p. 16).

¹⁰⁷ Joel Porte, 'Introduction: Representing America—the Emerson Legacy', in Porte and Morris ed., *Cambridge Companion to Emerson*, pp. 1–12 (p. 6).

¹⁰⁸ R. W. Emerson, *Nature* (Boston: James Munroe & Company, 1849), p. 1.

¹⁰⁹ Robert D. Richardson, 'Emerson and Nature', in Porte and Morris ed., *Cambridge Companion to Emerson*, pp. 97–105.

¹¹⁰ Emerson, *Nature*, pp. 61–63.

in our land, is unquestionably pantheistic'.¹¹¹ As he pointed out, Emerson's and his followers' pantheistic writings were circulating in Britain and gaining adherents.

Thomas Carlyle was often accused of pantheism by his contemporaries. Irish Catholic judge and writer John O'Hagan (1822–1890) commented: 'Carlyle [...] "cannot conceive God making the world, and then sitting apart, like an architect, seeing it go." The "Eternal Harmonies" are his only God. This pantheism [...] is the key to all that seems so incongruous in him'.¹¹² There was also an interesting conversation between Carlyle and an enquirer: "'Sir," wrote the enquirer, "People say you are a Pantheist: is it true?" "Sir," answered the philosopher, "I am neither a Pantheist nor a Pot-theist.—Yours, T. Carlyle"'.¹¹³ It is uncertain whether Carlyle was a pantheist, since he often expressed his ideas inconsistently, and he clearly denied being a pantheist.¹¹⁴ A contemporary reviewer of Carlyle criticised those who accused Carlyle of pantheism, claiming that the label—'pantheism'—is 'rather more worthless than usual in the present case, because Mr. Carlyle is ostentatiously illogical and defiantly inconsistent'.¹¹⁵ Nevertheless, Carlyle admired his pantheistic friends such as Goethe and Emerson,¹¹⁶ and he often suggested readers to see supernatural interferences, like miracles, as natural phenomena, and to see spirit in nature. For example, in a chapter entitled 'Natural Supernaturalism' in his novel *Sartor Resartus* (1833–34), Carlyle wrote that '[t]o me perhaps the rising of one from the dead were no violation of these Laws [of Nature]', and that 'all the Spirits of the Universe [...] dwell with us visibly, as ministering servants, in our houses and workshops'.¹¹⁷ These words could inspire pantheism.

¹¹¹ Pearson, *Infidelity*, p. 34.

¹¹² Anon, 'Carlyle's Works', *Dublin Review*, 29 (1850), 169–206 (p. 189).

¹¹³ Anon, 'Ralph Waldo Emerson', *Sphinx*, 3 (1870), 109–11 (p. 109); Anon, 'Pot and Kettle', *Fun*, 11 (1870), 32.

¹¹⁴ Turner, 'Carlyle', p. 330.

¹¹⁵ Anon, 'Carlyle', *Fortnightly Review*, 8 (1870), 1–22 (p. 4).

¹¹⁶ Fred Kaplan, *Thomas Carlyle—A Biography* (Cambridge: Cambridge University Press, 1983), pp. 167 and 202.

¹¹⁷ Thomas Carlyle, 'Natural Supernaturalism', in *Sartor Resartus* (Chicago: W. B. Conkey Company, 1900), pp. 294–308 (pp. 295 and 299).

Poetical pantheism was generally well received by the Victorians. One important factor was the metaphorical nature of poems which allowed a great multitude of interpretations. The above-mentioned lines could be interpreted as supporting strict-sense pantheism, higher pantheism, Christian monotheism, or something else. Many Victorian thinkers held the view that poems did not convey serious ideas but simply sentiments, thus they usually did not direct serious accusations of pantheism at pantheistic poems. Pantheistic poetry could be valued by Christian thinkers as an emotional guide to the divinity of God's creations or to God's intimate and continuous relationship with his creations. In this sense, pantheistic poetry could be used to counter deism in which God stepped back from his creation after he created it. But when the literal meanings of pantheistic poems were taken seriously as philosophies or theologies, then criticisms from various religious backgrounds would follow. For example, in 1881, when the positivist writer Frederic Harrison, who believed in Auguste Comte's (1798–1857) Religion of Humanity,¹¹⁸ talked about Wordsworth's pantheistic lines mentioned-above, he asked:

This is poetry. Is it religion? It is exquisitely touching and inspiring to the spirit. Is it enough to guide lives, to curb passions, to give light to despair, unconquerable force to societies, nations, races? Can it do what the law of Moses did, or the law of Christ; because, if it cannot do this, it is not religion?¹¹⁹

His answer was negative. He wrote:

Poetry is one thing. Science, Action, Life, Religion, are far other—all much wider and more continuous. [...] Poets are not (for all that some people say) the guides of life; their business is to beautify life. And after all, this Worship of

¹¹⁸ Martha S. Vogeler, 'Harrison, Frederic', in *ODNB* <<https://www.oxforddnb.com/>> [accessed 28 August 2018].

¹¹⁹ F. Harrison, 'Pantheism', p.286.

Nature, this poetry of Pantheism, is but one side even of Poetry, and not its grandest.¹²⁰

Harrison's words demonstrated a common attitude among Victorian thinkers that poetry was not a serious subject compared to science, philosophy, and theology, and that the pantheism in it should not be taken literally.

1.1.3 Materialistic Pantheism

Beside the Spinozian and German idealistic and the poetical traditions of pantheism, there was also a materialistic tradition of pantheism among materialists, socialists, and working-class people in Europe. Margaret C. Jacob has pointed out that many seventeenth and eighteenth century European materialists believed in a pantheistic religion, with the English philosopher John Toland, who coined the term 'pantheist', as the most prominent representative.¹²¹ According to her, these thinkers deified and worshiped nature. Though Toland was almost never mentioned in the Victorian sources I examine, several continental materialists were occasionally mentioned.

The aforementioned evangelical minister Thomas Pearson observed that 'in its [pantheism's] most unphilosophic form, it constitutes the faith of a large portion of the French people', and that '[t]he socialism of the Continent is, in a great measure, pantheistic'.¹²² He claimed that the French freethinkers Voltaire (1694–1778), Victor Cousin (1792–1867), and Pierre Leroux (1797–1871) and the German communist Ludwig Feuerbach (1804–1872) were all pantheistic in their teachings.¹²³ What troubled Pearson in this kind of pantheism was the deification of man. He claimed that 'God according to them, was in Jesus Christ, and so he is in the French people', '[m]an thus becomes a god to himself', '[t]heology becomes anthropology', and 'pantheism reaches

¹²⁰ F. Harrison, 'Pantheism', p. 286.

¹²¹ Margaret C. Jacob, *The Radical Enlightenment: Pantheists, Freemasons, and Republicans* (London: George Allen & Unwin, 1981), p. 22.

¹²² Pearson, *Infidelity*, pp. 32 and 33.

¹²³ Pearson, *Infidelity*, p. 33.

the point to which it is ever tending, the very verge of atheism'.¹²⁴ Cheap print was considered by Pearson a major way of spreading infidelity among the working classes.¹²⁵ In his view, working-class pantheism was cultivated in some cheap radical prints in which the ideas of Emerson and of European freethinkers and socialists were advocated, though he did not give names of those prints.

Several British working-class radical leaders were indeed attracted to pantheism in their publications. British leaders of working-class radical movements in the nineteenth century were greatly influenced by continental radicals.¹²⁶ As pantheism was relatively well regarded among continental radicals, British radicals also occasionally advocated pantheism. Edward Royle has mentioned that 'Shepherd Smith', James Elishama Smith (1801–1857), preached pantheism to working-class people in the 1830s.¹²⁷ Robert Owen (1771–1858), the leader of the British socialists in the 1830s and 1840s who opposed established religions,¹²⁸ advocated pantheism in his cheap socialist periodical, the *New Moral World*. The periodical featured pantheistic poems and even promoted a pantheistic religion. For example, Shelley's pantheistic and anti-oppression poem 'Prometheus unbound' was quoted in an article on Shelley on 1 December 1838; and an extract from Wordsworth's 'Tintern Abbey' was printed with the title 'NATURE' on 29 December 1838.¹²⁹ A pantheistic religion was advocated by Owen in an article on 'The Religion of the Millennium' on 28 November 1835. Owen wrote:

we deduce the following conjectures, as probable truths:—

¹²⁴ Pearson, *Infidelity*, p. 33.

¹²⁵ Aileen Fyfe discusses this in Fyfe, *Science and Salvation*, pp. 16–21.

¹²⁶ Royle, *Victorian Infidels*, p. 107.

¹²⁷ Edward Royle, *Radical Politics 1790–1900 Religion and Unbelief* (London: Longman, 1971), p. 9.

¹²⁸ Royle, *Victorian Infidels*, p. 59. Also see Timothy C. F. Stunt, 'Smith, James Elishama [called Shepherd Smith]', in *ODNB* <<https://www.oxforddnb.com/>> [accessed 28 August 2018].

¹²⁹ Anon, 'A review of Modern Poets', in *The New Moral World*, Volume V (Leeds: Joshua Hobbon, 1839), pp. 83–85 (p. 84); Anon, 'Nature', in *The New Moral World*, Volume V, p. 159.

1st. That an eternal, uncaused Existence has ever filled the universe, and is, therefore, omnipresent.

2nd. That this eternal, uncaused, omnipresent Existence possesses attributes to “direct the atom, and control the aggregate of nature;” in other words, to govern the nature as it is governed.

3rd. That these attributes, being eternal and infinite, are powers which are incomprehensible to man.

[...]

11th. That, for the convenience of discourse, it is necessary that some concise term should be adopted, by which to designate this eternal, uncaused, omnipresent Power; and that the term God is, perhaps, as unexceptionable for this purpose as any one word that can be employed,—and it has the additional recommendation of general use in its favour.

12th. That, therefore, this eternal, uncaused, infinite, incomprehensible power, will be universally called God.¹³⁰

To believe that there was an immanent, omnipresent, eternal, uncaused, infinite, and incomprehensible God who ran nature was clearly pantheistic, though Owen did not use the term ‘pantheism’. He claimed that this belief was a suitable religion for his followers. He stressed that there was no prayer, no worship, no ceremony, and no church, and that the religious practice was the pursuit of happiness, the action that was assigned by God as ‘the ultimate object of [...] [man’s] nature’.¹³¹

Another radical periodical, the *Movement—Anti-Persecution Gazette*, edited by George Holyoake (1817–1906), a next-generation radical leader who coined the term ‘secularism’ in 1851,¹³² also spoke positively of pantheism. For example, an essay on

¹³⁰ Robert Owen, ‘The Religion of the Millenium’, in *The New Moral World*, Volume II (London: Thomas Stagg, 1836), p. 33. Also see Jonathan Topham, ‘*An Infinite Variety of Arguments*’ (unpublished doctoral dissertation, University of Lancaster, 1993), p. 442.

¹³¹ R. Owen, ‘Religion’, p. 33.

¹³² George Holyoake, *The Origin and Nature of Secularism* (London: Watts and Co, 1896), p. 41.

pantheism of ‘a young lady’, signed S. D. C, was printed in 1845.¹³³ The pantheism she introduced was Emerson’s pantheism, which, she considered, asserted that ‘there is a loving spirit in the fair universe, whom we should ever adore without us, and cherish within us’ (98). She claimed that pantheists worshiped God through the study of the world. She wrote that ‘to [fully] realize the fact that there is god in all creation would require omnipresence and omniscience; but to grasp the *principle*, and strive ever towards its realization, this is to be a Pantheist. From this it follows that the true Pantheist will be devoted to the study of reality. His worship will [...] consist in [...] the loving study of the grand principles of science, the high musings of philosophy, the wild soarings of poetry, or the beautiful lessons of psychology’ (99). After these words, she argued, in a poetic fashion, that science, philosophy, morality, and religion would all work in harmony in this pantheistic practice.¹³⁴ Holyoake gave a rather neutral comment after this article. He wrote that ‘[i]ndeed Pantheism is religion without a bible. It worships God without having a god—or in other words, worships it under the name of nature. [...] “Pantheism,” treated to my satisfaction, would separate itself entirely from Atheism’ (100). The *New Moral World* and the *Movement* might be two of the cheap prints that Pearson observed spreading pantheistic views among working-class people.

Holyoake’s views were not radical in the religious arena. He intended to keep his secularism neutral and to avoid conflicts with Christianity. He even asserted that secularism was also pious since it wiped out superstitions, it increased human intelligence and morality, it made the world more beautiful by encouraging people to focus on making this life better, and it sent ‘to heaven clean, intelligent, bright-minded saints’.¹³⁵ However, he was troubled by pantheism sometimes due to the way he reconciled secularism and the concept of God. In the monograph, *The Trial of Theism* (1858), Holyoake wrote that since his secularism asserted nothing beyond nature, if he

¹³³ S. D. C., ‘Pantheism’, in *The Movement*, 2 vols (Westport: Greenwood Reprint Corporation, 1970), II, pp. 97–100.

¹³⁴ S. D. C., ‘Pantheism’, p. 99.

¹³⁵ Holyoake, *Secularism*, p. 88.

wanted to incorporate the concept of God, then '[i]t [...] seems to me that Nature and God are one—in other words, that the God whom we seek is the Nature which we know'.¹³⁶ Holyoake quickly rejected pantheism on the ground that he could not conceive nature as 'a being, intelligent and conscious' (157). He considered that to conceive a united intelligence in nature was essential for pantheism, thus he denied being a pantheist. He wrote:

while I go with the Pantheist so far as to accept the fact of Nature in the plenitude of its diverse, illimitable, and transcendent manifestations, I cannot go farther and predicate with the Pantheist the unity of its intelligence and conscious. This is the inability, rather than any design of my own, which has exposed me to the unacceptable designation of Atheist (157).

Holyoake's religious stance appears to have drifted between pantheism and atheism. His contemporary, James Buchanan (1804–1870), Chair of Systematic Theology at the Free Church of Scotland's New College in Edinburgh, commented that 'Speaking of Nature as self-existent and eternal, Mr. Holyoake ascribes such attributes to it as might seem to imply a leaning towards Pantheism, rather than the colder form of mere material Atheism'.¹³⁷

Another leader of the movement of secularism, Charles Bradlaugh (1833–1891), also had some connections with pantheism. Contrary to Holyoake, he clearly announced his atheistic position, since one of his motivations to join the movement of secularism was his hatred of Christianity.¹³⁸ Although Bradlaugh advocated atheism, he was an admirer of Spinoza and he probably derived his atheism from Spinoza's philosophy.¹³⁹ One of Bradlaugh's biographers, John Mackinnon Robertson (1856–1933), pointed out that

¹³⁶ George Holyoake, *The Trial of Theism* (London: Holyoake & Co., 1858), p. 157.

¹³⁷ James Buchanan, *Modern Atheism under Its Forms of Pantheism, Materialism, Secularism, Development, and Natural Laws* (Boston: Gould and Lincoln, 1857), p. 377.

¹³⁸ Royle, *Radicals*, p. 92.

¹³⁹ Royle has mentioned this in Royle, *Victorian Infidels*, pp. 118–19.

'Bradlaugh's own atheism was simply the logical completion of Spinoza's pantheism'.¹⁴⁰ Indeed, in a lecture on Spinoza, Bradlaugh revered Spinoza as 'a great truth-lover', and he regarded the pantheistic claim that 'God is all there is' as logically the same thing as atheism.¹⁴¹

Though historians usually see these radical leaders as materialistic, deistic, or atheistic, they sometimes supported pantheism. Their positive words on pantheism would grant pantheism credit among their working-class followers. Many Victorian working-class people did not subscribe to Christian doctrines. The church attendance rate among working-class people was extremely low, and there were towns, factories, and mines where almost no workers attended church services.¹⁴² Pantheism had been advocated to working-class people through cheap print and words of radicals at least since the 1830s, and pantheism reached a significant degree of prevalence among them by 1870.

Pearson did not consider pantheism to be very popular among British working-class people when he made his observation around 1854. He claimed that 'Pantheism among ourselves is somewhat of an exotic. The sturdy English mind is not the most congenial soil for it. The philosophy from which it has sprung, is alien to the mental habitudes of our people'.¹⁴³ Probably this was the case during and before the mid-nineteenth century, but pantheism had gained much ground among British working-class unbelievers in the second half of the nineteenth century. In an article about working-class unbelievers published in 1871 in the Christian monthly magazine for Sunday reading, the *Golden Hours*, the writer, a 'special commissioner', specified five kinds of 'infidelity' that were 'most liable to meet' in working-class people.¹⁴⁴ They were atheism, pantheism, materialism, spiritualism, and indifferentism. He claimed that atheism was the rarest while indifferentism was the most pervasive. He situated the popularity of pantheism as somewhere in between atheism and indifferentism. The

¹⁴⁰ John Mackinnon Robertson, *Charles Bradlaugh* (London: Watts & Co., 1920), p. 27.

¹⁴¹ *Ibid.*, p. 27.

¹⁴² Royle, *Radical Politics*, p. 5.

¹⁴³ Pearson, *Infidelity*, p. 33.

¹⁴⁴ Anon, 'The Working Classes of London', *Golden Hours*, November 1871, 749–54 (p. 749).

writer implied that people had a high chance of encountering pantheists when working with working-class people. He gave an example of a pantheist wood-turner he had met:

I remember arguing the question with one, a wood-turner, a steady, good workman. It was on a lovely summer day when even the dingy walls of a London court gleamed responsive to the brightness which lighted up its gloom. He was at work at an attic window, from which “coign of vantage” one could see the fleecy clouds radiant with beauty traverse the blue sky, as if in search of some place undefiled by London smoke. The man had been talking of the glories of nature in the curious style of rhapsody so common among these people, and pointing to the clouds exclaimed—

“see those white-robed emanations of the God we adore as they flit along the sky! We see and behold their beauty, and as we gaze they are absorbed again into the ether from which they sprang; so with ourselves. We shall go back to the God from which we and all we see around us came,—tree, flowers, all that makes the world that your fabled Garden of Eden was.”

“Yes, that is all very pretty in poetry; but do you really mean to tell me you believe the trees are emanations from God?”

“Undoubtedly I do.”

“Well,” said I, “then I must say you treat the Deity with but scant respect, for there you have Him, or an emanation of Him, turning upon the lathe, whilst you cut and carve Him at your pleasure.”¹⁴⁵

The wood-turner saw nature as God. He considered that the world was already the ‘Garden of Eden’, and that once a man died, he relinquished the alienation from God, returned to God, and became one with God. He seemed to be religiously satisfied with this view. He knew where he came from and what happened after he died; the world was a beautiful, kind, warm, and divine place for him; and his belief was strengthened by his wild work. As the writer noted here, this pantheistic view was ‘common among these people’. His words implied that pantheism had gained much ground among

¹⁴⁵ Ibid., pp. 751–52.

working class people at this time. Being a Christian commissioner, the writer criticised the wood-turner's pantheism as a mere fantasy and claimed that the personality of God and man's moral responsibility were destroyed in this fantasy.¹⁴⁶

1.2 Changing Views of Pantheism

So far, we have seen three traditions of pantheism that existed in Victorian Britain from the beginning of the Victorian era. These traditions influenced Victorian views of pantheism throughout the era. We will see in this section that there was growing concern about pantheism among Victorian thinkers from the 1830s to the 1850s, and there were many new supports for pantheism that appeared from the 1860s to the 1890s.

1.2.1 Growing Concerns with Pantheism from the 1830s to the 1850s

Views about pantheism from the 1830s to the 1850s were overwhelmingly negative in British publications. Besides in poetry and in a few radical publications, mainstream publications were full of critical voices against pantheism. During these decades, Christians generally considered pantheism to be dangerous. As we have seen in the previous section, pantheism was seen as one of the major beliefs of French radicals, who had violently overthrown their king and church; pantheism was also considered a belief that could result in blasphemous interpretations of the Bible inspired by German thinkers; moreover, leaders of British anti-religious radical movements sometimes advocated pantheism. The number of articles mentioning pantheism during this period increased decade by decade, as I have shown in the Introduction of this dissertation. This indicates that people were more and more concerned with pantheism. A great number of articles on pantheism were written by Christians who defended Christian monotheism against pantheism. William H. Mill's and Thomas Pearson's writings were examples of scholarly, objective, and humble rebuttals of pantheism, but not all critics of pantheism were as polite.

¹⁴⁶ Ibid., p. 752.

There were many negative and often vitriolic takes on pantheism. In 1838, a reviewer in the medical journal, the *Medico-Chirurgical Review*, criticised the transformation theory of life proposed by German pantheistic thinkers.¹⁴⁷ The reviewer called pantheism ‘an acephalous monster’ (450), since he considered that German pantheists ignored ‘the supposition of a Great First Cause’, which should be the starting premise of any theory of life. He considered that German pantheists’ naturalistic explanation of the origin of life without the assumption of God would not stand ‘the tribunal of science’ (451). He warned readers that ‘this childish folly [pantheism] [...] is opposed to all experience, to probability, to reason; and the man who can reject the simple doctrine of a God and a creation, for this godless, self-existing, self-destroying, self-contradicting, senseless, aimless crotchet, must be the most credulous slave to superstition that ever formed the raw materials of a lunatic’ (452).

A reviewer of Mill’s book in the *British Critic, and Quarterly Theological Review*, an organ of the High Church party, called Strauss’s work a ‘poisonous book’ while calling Mill’s work ‘a safeguard’.¹⁴⁸ The reviewer claimed that pantheism was an error to be blamed on the fanciful, i.e. unrealistic, mind of oriental people, and that British people had a more rational and realistic mind that was usually able to resist such fanciful thoughts. He wrote: ‘our national character is thought to be less inclined to oriental phases of error, than that of the Germans’; and ‘We are apt to assume that what is oriental is fanciful, i.e. that it does not approve itself to our own more staid temperament, and therefore is more opposed to reason than what we are likely to take up’ (307). He quoted Savoyard philosopher Joseph de Maistre’s (1753–1821) words in *Du Pape* (1819) that ‘the English are unimaginative nation after all,—and Pantheism is an imaginative system after all’, and that ‘[w]e deny that Pantheism is any thing else than a most imaginative system’ (311–12). However, the reviewer also saw many pantheistic tendencies in Britain. He blamed romantic poetry for this situation. He

¹⁴⁷ Anon, ‘The Discovery of the Vital Principle’, in *The Medico-Chirurgical Review*, Volume Thirty, ed. by James Johnson and Henry James Johnson (London: S. Highley, 1839), pp. 443–60. This article has been mentioned in Adrian Desmond, *The Politics of Evolution* (Chicago: The University of Chicago Press, 1989), p. 300.

¹⁴⁸ Anon, ‘Observations’, *British Critic, and Quarterly Theological Review*, 31 (1842), p. 304.

wrote that poets are ‘the most imaginative persons of a nation’, and that ‘our poets, who should have been the purifiers of our passions, and our guides to truth, have been too frequently the palliators and adorners of error’ (312). He claimed that pantheists and those who had pantheistic tendencies did not see the reality of the Trinity, which had been affirmed in the Bible and by devout Christian sentiments. He wrote that pantheistic ideas of God and nature were caused by ‘an habitual blindness and indifference’ or by ‘an habitude aversion to find any objective truth’ (320).

The writer of an article, ‘Pantheism, Communism and Christianity’ (1848), published in the Catholic journal, the *Rambler*, called pantheism and communism ‘two portentous monsters of our day’.¹⁴⁹ He claimed that pantheism and communism were caused by man’s fears of isolation either from God, from nature, or from other men. As himself a Catholic, he argued that Catholicism was the most harmonious way to deal with the relations between men, between man and nature, and between man and God. He considered pantheism to be ‘a refuge against the desolating materialism of the last two centuries’ (163). The problem of pantheism for him was that pantheists identified nature and man with God, and consequently they failed to see ‘the true God’ (163), who was distinct from his creation—nature and man. He judged that pantheism was ‘the fatal vision which the waking slumbers of our day have conjured up before our eyes, and before which the romantic, the imaginative, and the aspiring bow down and adore’ (163). He described pantheism as ‘romantic, imaginative, unpractical’ (164).

In an article published in the Methodist journal, the *Wesleyan-Methodist Magazine*, entitled ‘Revelation versus Pantheism’ (1849), the writer deplored that pantheists ignored that the revelation of God in the Bible was a proven fact, and that their excessive tolerance led them to treat all religions as essentially equal. He wrote: ‘That there is a revelation of truth, from the God of truth, by the Spirit of truth, is a confessed fact, is a proved fact. [...] That some persons do not receive the Bible as this divinely-authorized set of documents should be accepted; that they have no veneration for its statements as to the past, present, and future’.¹⁵⁰ He claimed that pantheists had a

¹⁴⁹ Anon, ‘Pantheism, Communism and Christianity’, *Rambler*, 3 (1848), 159–65 (p. 159).

¹⁵⁰ R. M. W., ‘Revelation versus Pantheism’, *Wesleyan-Methodist Magazine*, 5 (1849), 48–56 (p. 48).

'latitudinarian mode of treating sacred things, as though religion was still an undiscovered region, or as though all religions, so called, of the various pagan nations, possessed so much in common of the elements of truth, as to be worthily classed with Christianity: in a word, as if Pantheism were the true divinity' (49). Such a degree of tolerance, he argued, if in politics, would be the same as 'to admit the Jew into Parliament' (49). For him, to 'keep the Jew out of Parliament' 'is not injustice. And to refuse a seat in a Christian Legislature to an avowed opponent of Christian doctrines and claims, is no more unjust than impolitic' (50). He gave the examples of polytheistic worship in Egyptian and Hindu religions and pointed out that the polytheism and idolatry worships in Egypt and India were not equal to Christianity in Britain and thus pantheists' equivalence of all religions was a fallacy.

In 1858, an essayist of the non-denominational Protestant *Journal of Sacred Literature and Biblical Record* commented that '[i]n the present day pantheism is the most dangerous and insidious form in which infidelity presents itself', because 'pantheism comes forth decked in gay attire, and, with strange mystic utterances, claims the attention and demands the homage of men'.¹⁵¹ He saw Germany and India as 'nation[s] of pantheists' (310) while France also had quite strong pantheistic developments. He saw the sensational philosophies of French philosophers Voltaire, Cousin, and Condillac as pantheistic. He called their masterpiece, the *French Encyclopaedia*, the 'chief permanent organ of the French sensationalists' and 'the principal means of disseminating pantheistic atheism in that age' (300). As for the German side, the writer considered that 'Pantheism appears in embryo in his [Kant's] *Critique of Pure Reason*' (301). 'Hegel's pantheism is undisguised' (304). 'D. F. Strauss is a Hegelian pantheist, and represents the extreme left of his party', and 'Feuerbach's is the most recent development of German pantheism. In his hands it has become bald materialistic atheism' (304). The writer also mentioned Schelling and Fichte as pantheists. The writer claimed that pantheism was one of the two pillars of modern infidelity. He wrote that '[a]ll modern infidel philosophy is either pantheism or positivism; it takes its form from the speculations of Hegel, or the science of Comte'

¹⁵¹ M. G. E., 'Pantheism', pp. 295–96.

(306). He saw that both Hegel's absolute idealism and Comte's positivism 'make God one with humanity' (306).

On the British side, the writer also considered that 'many of the religious speculations which have recently risen into notice in England have their roots in pantheism' (307–8). Like Pearson, he considered that '[t]he writings of Emerson [...] have been mainly instrumental in giving popularity to the gorgeous dreams of pantheism in this country' (307). He noted that Thomas Carlyle 'has been grievously deceived by the seductions of pantheism, and knows not that it is a delusion. [...] His hero-worship is nothing but intellectual pantheism' (307).

This writer criticised pantheism for two main reasons. The first was that 'Pantheism is virtually atheism' (294). He reasoned that '[i]f the appellation God is rightly used to denote a personal Being—a Being capable of sustaining certain relations to us, as Creator, Preserver, Governor, the object of worship and reverence, then the pantheist has no God' (308). He argued that the pantheist 'worships the creature as if it were the Creator' (294) rather than worships 'the living and the true God' (295). He also argued that pantheism in practice had to become polytheism and idol worship. He wrote that 'Pantheism naturally developes itself into polytheism, and the pantheist becomes an idolater, as is remarkably illustrated in the history of Hindoo pantheism' (296).

The second reason was that 'Pantheism, in common with materialistic atheism, is destructive of all morality' (310). He saw determinism as a necessary doctrine of pantheism and reasoned that '[t]he whole phenomena of the universe being regarded by the pantheist as but a chain of necessary developments, man and all his actions being but necessary products of the restless activity of the one great Being, there can be no such thing as a distinction between moral good and evil, between virtue and vice' (310). He considered that 'The deity of the pantheist, having neither personality nor will, can form no law, can exercise no authority, and bestow no favours, and consequently can bring us under no obligation to him' (311); and men 'are in all their thoughts, words, and actions, mere automata' (311). He mentioned the French Revolution as an example of the destructive moral consequences of pantheism: 'Pantheism everywhere uproots the foundations of social order, recruiting the ranks of socialism, and communism, and libertinism. The idealism of the modern pantheist tends to the very same issues as the

sensationalism of the French atheists, which prepared the way for and gave intensity to all the moral desolations of the French Revolution' (310).

These writers from various traditional Christian churches all treated pantheism as a fatal error. They, and most of their target readers, saw the existence of an extra-mundane God separated from the world created by Him as the truth. For them, pantheism was simply untrue since they considered that pantheists dismissed the image of an extra-mundane God. Though they were very confident about Christian monotheism, they still showed concern about the prospect of pantheism spreading in Britain in the way it had spread in Germany and France. They treated pantheism as a potential threat since they saw that those strong and blasphemous traditions of pantheism in Germany and France were penetrating British people's minds, especially those of poets. In order to prevent the development of pantheism in Britain, they usually criticised pantheism for the reasons that pantheism was fanciful, poetical and unrealistic; that pantheism was a product of the oriental mind and thus was not for British people; that pantheism was unpractical if not fell into polytheistic worships like the state of religions in India, which they considered to be primitive and uncivilised; and that pantheism destroyed morality by dismissing the boundary between good and evil.

1.2.2 New Supports for Pantheism from the 1860s to the 1890s

During the 1860s, the danger of pantheism became very real in the eyes of many British thinkers. Serious historical, philosophical, and theological studies and discussions of pantheism boomed during this decade. In the meantime, writings advocating pantheism began to appear. James Hinton's *Man and His Dwelling-Place* and *Life in Nature* were published in 1859 and 1862; John Hunt's *An Essay on Pantheism* was published in 1866; some of James Martineau and Thomas Elford Poynting's pantheistic writings were also published during this decade; and Alfred Barratt's pantheistic work *Physical Ethics* was published in 1869. Views of pantheism were no longer overwhelmingly negative as many neutral and positive voices emerged. The following paragraphs focus on the views of pantheism developed by other essayists, commentators, and critics in order to demonstrate the change in the public's attitude

towards pantheism. The philosophies of pantheistic thinkers will be introduced in the second chapter of this dissertation.

In 1863, a translation of French philosopher M. Emile Saisset (1814–1863)'s acclaimed *Essai de philosophie religieuse* (1862) was published in Britain. The translated work inspired a considerable number of British thinkers to discuss pantheism. The main topic of Saisset's work was, in his words, 'the capital problem of religious philosophy, the Personality of God'.¹⁵² In his introduction, Saisset expressed his concerns: 'I found Pantheism one of the questions of the day. This was about 1840. German ideas had been spreading in France. [...] The masters of French philosophy were considered to be, generally speaking, extremely favourable to the movement [of German idealism]' (1). He also wrote that '[o]n all sides, through the multitudinous echoes of the press, in serious books in light pamphlets, in journals and reviews, might be heard the consecrated anathema: *Rationalism necessarily terminates in Pantheism*' (2). Saisset expressed that he loved philosophy, which he considered to be based on rationalism, but that he was not in favour of pantheism, thus he was worried that if rationalism necessarily led to pantheism, then he could not be a philosopher. His work aimed to discredit pantheism and focused on the issue of the personality of God. The work was published in two volumes and contained two main parts. The first part was a historical sketch of modern pantheism from Spinoza to Hegel, and the second part contained nine meditations in support of the traditional Christian view of the personality of God.

For Saisset, the question of personality was very problematic in pantheism. In his view, pantheists either treated God as the only person or did not treat God as a person; in either case, God and man did not have personality since the essence of being a person was lacking. He wrote that men 'are evidently not distinct persons, with their several lives and their proper destinies; what we call our life, our person, our destiny, are pure illusions' (8), and that God 'is nothing more than an abstraction', God 'is without reality and without life; it has neither consciousness, nor love, nor liberty, nor happiness; it is undetermined being, pure being' (9). Saisset aimed to preserve both the personality of God and the personality of man, but his solution was weak. He actually held a

¹⁵² M. Emile Saisset, *Essay on Religious Philosophy*, 2 vols (Edinburgh: T. & T. Clark, 1863), I, p. 1. The numbers in brackets after quotations from Saisset are page numbers of this volume.

pantheistic view of God that '[a]nything, I say, anything but God. For God is the perfect and infinite being, and beyond the perfect being who possesses all the powers of being, nothing is possible, nothing can be conceived', and a pantheistic view of 'a universe without limits, unfolding itself through space and time, and expressing, by an inexhaustible multitude of created being, the omnipotence of the immense and eternal Creator'.¹⁵³ How in such a pantheistic view could the personalities of God and man remain the same as they were in traditional Christianity? Saisset's answer was that this was 'the great mystery'.¹⁵⁴

With the publication of Saisset's work in Britain, many thinkers took this as an opportunity to express their views of pantheism. Views of pantheism during this time were mixed. The anonymous translator of Saisset's work had a negative view of pantheism. In an essay he attached in his translation of Saisset's work, he clearly announced his alliance with Christian monotheism against pantheism. He expressed that he translated this work because he needed a philosophical work on pantheism to refute pantheism efficiently and such works were lacking in Britain. As he observed, '[t]wenty years ago, a learned and pious divine of the Church of England [W. H. Mill] wrote these warning words: "[...] [pantheism] is now in the course of propagation to cultivated minds from the centre of Christian Europe." The warning has been fulfilled. The snow has melted in Germany, and we have had a flood in England'.¹⁵⁵ He considered that 'Pantheism is pre-eminently the metaphysical heresy. Few men are metaphysicians: many men have an interest in the refutation of Pantheism. Hence the need of something in the shape of a philosophical manual to modern Pantheism. Such a manual I had not been able to find until I met with M. Saisset's *Essai de Philosophie Religieuse*' (194). Through a summary of Saisset's views, the translator criticised pantheism:

He [Saisset] has shown that Pantheism is founded upon deductions from that experience which it condemns; that its vaunted premises are word-jugglings, false

¹⁵³ Saisset, *Essay*, II, p. 78 and 145.

¹⁵⁴ *Ibid.*, p. 78.

¹⁵⁵ Anon, 'Essay: By the Translator', in Saisset, *Essay*, II, pp. 193–228 (p. 193).

to the verge of madness; that it promises the soul an ocean of light to lead it into an abyss of darkness, without morality, immortality, or God—for its morality is a fancy, its immortality is death, and its God is the negation of God. (225–26)

The translator's defence of the Christian image of a personal God was based on intuition and emotion. He claimed: 'Never has my own personality more irresistibly led me to the Personality of God' (228).

An anonymous reviewer in the *Eclectic Review*, a joint journal of Churchmen and Dissenters, also took a critical stance towards pantheism. The reviewer called Spinoza's identification of God and the world 'a faith in this cold and wretched dream vortex'.¹⁵⁶ He praised the translator and quoted the translator's summary of Saisset's views. The reviewer observed that 'God *versus* Modern Pantheism [...] [is] the one absorbing question among the thinkers of the day' (52). He also observed that science was used by pantheists, as he wrote: '[w]e have said that Pantheism is the great heresy of our times. It is said, that "Science has destroyed for ever the distinction between God and the universe;" the Pantheist is perpetually presenting his formidable dilemmas. Either God is conceived as creating the universe out of himself, or else God creates the universe in himself, and therefore the universe is himself' (58). Another reviewer in the *London Quarterly Review*, a Methodist journal, also agreed with the translator and stood against pantheism.¹⁵⁷

A reviewer of the *London Review*, a non-denominational journal, gave a rather neutral view of pantheism. He welcomed Saisset's work and the translator's translation.¹⁵⁸ He pointed out that Saisset considered that 'the system of Pantheism requires the annihilation either of the Divine or human personality' (577). He also expressed his dissatisfaction with Saisset's meditation, for the reason that 'we cannot but think that on this and one or two other questions his own mind has been somewhat coloured by his studies of Pantheism' (577).

¹⁵⁶ Anon, 'M. Saisset on Pantheism', *Eclectic Review*, 5 (1863), 52–66 (p. 58).

¹⁵⁷ Anon, 'Essay on Religious Philosophy', *London Quarterly Review*, 21 (1864), 514–18.

¹⁵⁸ Anon, 'Modern Pantheism', *London Review*, 7 (1863), 576–77.

A positive view of pantheism was presented in a book-trade journal, the *Critic*. A reviewer claimed that '[w]e [*The Critic*] have sympathy with the pantheism of the old Oriental religions; of the earliest [...] Greek philosophy; of the Stoics; of the Alexandrian School; of the Mystics [...]; of Giordano Bruno; of Spinoza; of modern German philosophy', and that '[a]part from our theoretical preference for pantheism we regard pantheism as the indispensable instrument for the moral and religious regeneration of the human race'.¹⁵⁹ The journal's stance was against Christian theism as the reviewer claimed that they had 'borne the yoke of theism and thrown it aside' (235), and that '[n]owhere in the Bible can the impious, the monstrous distinction between God and nature be found' (235). Theism, the separation of God and nature, was considered by him an 'unnatural' product 'during the formation of the Christian Church' (235). He argued that theism was speculative while pantheism was empirical. He claimed that '[t]he theist builds with assumptions and abstractions; the Pantheist builds with facts, not with gross, material facts, but with the Divine facts of life infinite and undying. To see life everywhere; to feel life evermore, is pantheism; and to pantheism the highest duty, the holiest joy, is the diffusion of life' (235). The reviewer also criticised those who held prejudices against pantheism, and Saisset and the translator were included. He claimed that pantheism was being 'made black and ugly by its foes' (235), while '[s]o far from being the most audacious and blasphemous, pantheism is the humblest and most reverential of creeds' (235).

A few years later, in 1866, John Hunt's *An Essay on Pantheism* was published. This was mainly an historical account of pantheistic religions and philosophies. Hunt covered Indian religions, ancient Greek religions and philosophies, Jewish Cabala beliefs, pantheistic Christian saints, Neo-Platonism, the philosophies of Descartes, Leibnitz, and Spinoza, the pantheism of Giordano Bruno, German and French mysticism, German transcendentalism, and poetry. Hunt intended to address the problem of the lack of knowledge and the rightful treatment of pantheism in Britain. He wrote in his introduction that 'Germany and France have their Essays on Pantheism from all sides, and by the representatives of all schools. England has nothing but meagre accounts in

¹⁵⁹ Anon, 'Modern Pantheism', *Critic*, 25 (1863), 234–36 (p. 235).

Encyclopedias or Histories of Philosophy, the reading of which, speaking generally, would make no man wiser than he was before', and that 'Pantheism is something so frightful [...] that it is an iron mask and nobody knows who the man is who owns it'.¹⁶⁰ In the end of his account, Hunt gave his speculation about what pantheism was. This was where he showed an enthusiastic support for pantheism. Hunt claimed that 'Pantheism is, on all hands, acknowledged to be the theology of reason. [...] It is the philosophy of religion; the philosophy of all religions. It is the goal of Rationalism, of Protestantism, and of Catholicism, for it is the goal of thought' (374–75). Hunt defined pantheism as the theology that was based on reason. He claimed that all rational theistic speculations, if they assumed that God was infinite, would end in pantheism. This was a very positive view of pantheism from a churchman at that time. Hunt knew that his view was not in line with his peers. He wrote that '[m]any will be offended that I have given a fair hearing to theologians and philosophers who have long by universal consent being placed without the pale of the Church' (xxiii).

Probably because of Hunt's sincerity, many reviews of his work were positive. Many reviewers also spoke positively of pantheism. A reviewer in the *Athenaeum*, the most influential independent literary review journal, expressed a positive view of pantheism. The reviewer considered that pantheism was an intellectual enterprise containing many 'profound intellects'.¹⁶¹ Another anonymous reviewer in the *Reader*, a critical journal edited by David Masson (1822–1907), gave a very positive view of pantheism. He called pantheism 'one of the methods of contemplating the universe'.¹⁶² He treated pantheism as a product of monism in opposition to the dualism of matter and mind, and he considered that dualism belonged to 'unspeculative' minds and that for 'a higher development of thought', dualism 'cannot be permitted to remain' (691). He claimed that 'the natural tendency of human speculation is to establish universal unity', and that 'Pantheism we conceive to be the ultimate and necessary goal in such intellectual endeavours' (691). The reviewer opposed the view that pantheism was atheism. He claimed that 'the pantheistic faith is the only consistent one that can be received' (691).

¹⁶⁰ Hunt, *Essay on Pantheism*, p. xvii.

¹⁶¹ Anon, 'An Essay on Pantheism', *Athenaeum*, 2029 (1866), 326–27 (p. 326).

¹⁶² Anon, 'An Essay on Pantheism', *Reader*, 7 (1866), 691–92 (p. 691).

He agreed with Hunt that ‘when we speak of infinity, we imply Pantheism’ since if God was the infinite, then everything ‘must be a portion of this infinite’, i.e., a portion of God (692). The reviewer also pointed out that pantheism was perceived with unnecessary bias and fear in Britain. He wrote:

The belief in Pantheism is esteemed a sin. There is something so mysteriously awful and unholy in the name to most people, that a man is deemed a theological castaway who entertains the heresy, and, like rationalism, and many other perverted and misunderstood words, the term is employed as the synonym of all that is untrue. [...] But the exigencies of thought and the leadings of thought and the leadings of the intellect are far beyond the necessities of an adherence to doctrines whose admission is grounded upon traditional sanctity, and whose retention is compelled by fear. (692)

There were still voices against pantheism. A reviewer in the *Contemporary Review*, an independent review journal of philosophy and theology, pointed out that the absence of the personality of God in pantheism led to an absence of a divine and commanding voice in morality. He wrote that ‘where this [conviction of the personality of God] has been absent [...] it tends to pass into the theory of an evolution of many phases of being through which *the* Being is ever, but imperfectly, realizing Itself, and that this involves a practical negation of the Divine Will commanding good and forbidding evil, a practical obliteration of the lines of demarcation between good and evil themselves.’¹⁶³ He criticised Hunt, claiming that ‘this thought colours [...] his interpretation of Christian doctrine and of religious acts’, and that he felt ‘regret’ about Hunt’s statements (125–26). Hunt did try to reason that God was both personal and impersonal, but the reviewer wrote that he did ‘not quite see how’ (125) this was reasonable. The reviewer considered that the denial of the personality of God in pantheism was a ‘fascination’ and those who believed so ‘has been dazzled by the darkness’ (126).

¹⁶³ Anon, ‘An Essay on Pantheism’, *Contemporary Review*, 4 (1867), 124–26 (p. 125).

In 1866, there were other essays on pantheism written by Christian apologists who felt the need to criticise pantheism. Two critical essays written separately by J. W. Jackson and W. H. Gillespie were published in the Protestant *Journal of sacred literature and Biblical record*.¹⁶⁴ Jackson criticised pantheism in general and Gillespie criticised James Hinton's pantheism in particular.

Jackson considered that pantheism had become dangerously dominant in the intellectual circles of his time, as he wrote: 'It [Pantheism] is embodied in most respectable octavos, written by authors of repute, and published by firms of undoubted credit. It pervades our science, it is moulding our philosophy, and, we may add, infecting our theology. It is the dominant spirit of the age, and with its subtle influence shapes the thoughts, even of those least conscious of its presence'.¹⁶⁵ The main aim of this essay was to criticise pantheism and to defend Christian monotheism over pantheism. Jackson expressed: 'There is no doubt that among other orderly arrangements of God's providence, the missions of races as well as individuals find a place. [...] the religious product of the Semitic mind is Monotheism, the underlying element of Judaism, Christianity, and the faith of Islam. While conversely, the religious product of the Indo-European mind is Pantheism' (316). He claimed: 'The latter [Pantheism] sees the divine in Nature. The former [Monotheism] beholds the divine above Nature. The first adores Creation, the last worships the Creator. The one stops at effects, the other mounts to their cause. The former is guided by reason, the later by inspiration. Strictly speaking, the product of the first is a philosophy, while that of the last is alone really entitled to the epithet of FAITH' (317). He mainly criticised pantheists for not seeing the true extra-mundane creator and for worshiping creation rather than the creator; and he criticised pantheism for being a philosophy rather than a faith.

Jackson saw pantheism as 'dangerous' (320) from three aspects. First, Jackson considered that pantheism was 'a half true' (320) doctrine. In his view, pantheists were right in asserting everything as a part of the universe, but pantheists did not venture beyond the phenomenal world. Secondly, Jackson considered that pantheism was a

¹⁶⁴ There is not biographical information of them in *ODNB* or *WBIS*.

¹⁶⁵ J. W. Jackson, 'Pantheism in General', *Journal of Sacred Literature and Biblical Record*, 9 (1866), 315–21 (p. 316).

deficient product of 'the comparatively imperfect development of some of their [Indo-European race's] moral sentiments' (320). Finally, Jackson considered that the most dangerous aspect was that pantheism was 'in harmony with the spirit of the age in its scientific contemplation of nature, to which Pantheism is the religious response' (320). But he claimed that 'we have no fear of Pantheism, by which we mean, no fear of its ultimate triumph. It can never finally supersede Monotheism, which is the higher and nobler idea of the two' (321). For Jackson, a religion must appeal to the heart. As he considered that pantheism 'appeals to the head when we require a response to the heart', he claimed that pantheism 'is and must be an utter failure' and '[i]t will die out, leaving neither the ruins of a temple nor the wrecks of a creed, but only a name in philosophy' (321).

Gillespie picked up Hinton's pantheism as a specific case of pantheism to criticise.¹⁶⁶ The slogan of Hinton's pantheism was that man was dead and nature was alive, and in order to be alive from death, man must be one with nature. Besides criticising Hinton's somewhat perplexing theory, Gillespie compared Hinton's resurrection of man with Jesus's resurrection. Gillespie pointed out that pantheism was usually incompatible with the resurrection of Jesus, which was a miraculous resurrection of a dead body. Pantheism usually did not allow for such a supernatural miracle. He wrote that 'Spinoza admitted that the proof of the fact of the resurrection would be equal to the fullest disproof of his whole scheme of Pantheism. [...] In like manner [...] if Christ be risen, Hinton's faith is vain' (96). Gillespie then contrasted Christianity and pantheism using this point. He claimed that 'Christianity professes to be based upon the reality of Christ's resurrection from the dead' and that '[t]his Christianity, founded on the asserted resurrection, has been the religion of the most civilized nations of the world for more than eighteen hundred years. [...] At present, Christianity is the sole religion of civilized and advancing man' (96). If the resurrection of Jesus was unreal, then '[t]he most intelligent men on the face of the earth have, for centuries, given their adhesion to a system that rests upon the allegation of a fact, which never happened' (97). He claimed that the resurrection of Jesus was 'far less incredible' than that Christianity was

¹⁶⁶ W. H. Gillespie, 'Pantheism in Particular', *Journal of Sacred Literature and Biblical record*, 10 (1866), 90–103.

'founded upon a baseless lie' (97). He was using the authoritative state of Christianity to argue for the supremacy of Christian monotheism over pantheism. He claimed that in history, while there were many pantheistic schemes, 'Christianity marched on unimpeded, conquering and to conquer, until the freshest and grandest races of man have enlisted under her banners, and proclaimed themselves soldiers of the Cross' (102–3). Like Jackson, Gillespie considered that pantheism would vanish while Christian monotheism would endure.

Jackson was a prolific opponent of pantheism. He also wrote several other short essays criticising some specific philosophies of pantheism. In his essay 'Positivism—The Pantheism of Auguste Comte' (1867), he claimed that French positivist philosopher Auguste Comte's religion of humanity was 'the Papal phase of Arian Pantheism'.¹⁶⁷ He criticised Comte's religion, claiming that it was based on reason rather than on revelation and that it was a philosophy rather than a religion. He wrote that 'it [Comte's positivism] is the purely intellectual product of a predominantly literary and scientific age. It is the outcome of an especial literary and scientific people, and had therefore very properly as its mouthpiece a savant, and not a saint; a teacher of mathematics, and not a worker of miracles' (182). He considered that a religion based on reason and science rather than on revelation was not legitimate.

Though many anti-pantheistic articles were published in the *Journal of Sacred Literature* (which was previously the *Journal of Sacred Literature and Biblical Record* before 1867), there was also a pro-pantheism article in the journal. An anonymous essayist argued in favour of Hinton and against Jackson and Gillespie in his article 'Mr. Hinton's Metaphysical Views' (1867). The essayist claimed that Hinton 'has honoured the discoveries of scientific men, and revered the teaching of the Bible' and has 'united religion and science in one perfect arch, each sustaining and answering to the other'.¹⁶⁸ He valued Hinton's pantheism since he considered that it was based on both reason and

¹⁶⁷ J. W. Jackson, 'Positivism—The Pantheism of Auguste Comte', *Journal of Sacred Literature*, 1 (1867), 174–83 (p. 178). The 'Papal phase' here may point to the systematic and complex religious theory and practice in Comte's religion of humanity.

¹⁶⁸ Anon, 'Mr. Hinton's Metaphysical Views', *Journal of Sacred Literature*, 1 (1867), 81–94 (p. 83).

revelation. He pointed out that '[m]en who are continually employing their reason in the investigation of the laws of nature, and who find that they are led to truth by accepting nothing which cannot be proved, are led to try their religion in the same way' (81). Hinton was one of these men in his eyes. He argued that Hinton's pantheism was a new pantheism since Hinton did not worship matter, Hinton distinguished between the Creator and creation, and Hinton believed in a personal God.¹⁶⁹ The essayist praised Hinton's attempt to reconcile Christian doctrines with rationalism.

The 1860s was a decade during which the reception of pantheism in Britain changed significantly. While there were still many Christian critics criticising pantheism for similar reasons as in the former decades, many positive voices of pantheism, which had been rare in the former decades, emerged. Many thinkers, whether they held negative or positive views about pantheism, considered that pantheism had become a sign of the times in Britain and therefore they felt the need to address it. Many of them also pointed out that pantheism was treated biasedly and fearfully, and that knowledge about pantheism was inadequate in the past decades. They wished to give pantheism a fair treatment. Discussions of pantheism became much more philosophical, focusing on the issues of infinity, personality, morality, and rationalism. Many thinkers began to treat pantheism as a theology based purely on reason, in which the claims of the infinity and the impersonality of God were inevitable; while in previous decades, there were many critics treating pantheism as an irrational failure. For some thinkers, these points—rationalism, the infinity of God, and the impersonality of God—were the strengths of pantheism, while for some other thinkers, these points constituted the weaknesses of pantheism. The situation was complex. Many thinkers, who spoke positively of pantheism, came from liberal theological backgrounds with strong philosophical educations, which made them more inclined to be sympathetic towards philosophical systems of pantheism, especially Spinoza's philosophy and German idealism. Most critics of pantheism seemed to come from orthodox Christian backgrounds who wished to maintain the traditional Christian doctrine of a personal and extra-mundane God and the traditional Christian worship of God.

¹⁶⁹ Ibid., p. 87.

Victorian views of pantheism in the remaining decades of the nineteenth century generally followed the same pattern as in the 1860s. Critics continued to denounce pantheism for similar reasons. Writers who were sympathetic towards philosophy and rationalism gave pantheism fair treatments and viewed it as a decent branch of human intellectual endeavour. More works on pantheism from advocates of pantheism, Picton, Plumtre, Bray, and others, were published. These pantheistic writings and reviewers' responses will be further discussed in the rest of the dissertation.

The entries for pantheism in different editions of the *Encyclopaedia Britannica* also reflect the change in the reception of pantheism throughout the whole Victorian era. The seventh edition of the *Encyclopaedia Britannica* was published in 1842 and contained a short entry on pantheism. Pantheism was said to be 'a philosophical species of idolatry, leading to atheism, in which the universe was considered as the supreme God'.¹⁷⁰ The contributor called pantheism an 'absurd system' (790). He traced pantheism back to ancient Greece and considered Spinoza to be the philosopher who had revived pantheism in modern times. But besides ancient Greek religions and philosophies and Spinoza, he mentioned no other schools of pantheism. This reflected the lack of knowledge of pantheism among British thinkers during that period.

The eighth edition of the *Encyclopaedia Britannica*, published in 1860, contained a large entry for pantheism contributed by Scottish philosopher John Downes (1827–1864).¹⁷¹ Downes covered major pantheistic traditions: Hindu religions, ancient Greek religions and philosophies, Gnostics, Neo-Platonism, Bruno, Spinoza, Shelling, and Hegel. Compared to Hunt's later account, Downes did not cover poetry and mysticism and some other small traditions. Contrary to Hunt, Downes clearly stood against pantheism. Like many Christian critics, he claimed pantheism to be 'a great speculative error' 'for erring men' (231). His introduction of pantheism was accompanied by his criticisms of pantheism. Near the end of his article, he wrote that this entry 'is an outline of the numerous attempts at constructing a science of Being which have ended in

¹⁷⁰ Anon, 'Pantheism', in *Encyclopaedia Britannica*, Seventh Edition, Volume 16 (Edinburgh: Adam and Charles Black, 1842), p. 790.

¹⁷¹ John Downes, 'Pantheism', in *Encyclopaedia Britannica*, Eighth Edition, Volume 17 (Edinburgh: Adam and Charles Black, 1860), pp. 229–38.

pantheism, which is but another name for failure', and that pantheism was one of many 'fantastic follies of the human brain' (237). This large and critical entry reflected many Christian thinkers' need for a better knowledge of pantheism to refute pantheism during this period.

The ninth edition of the *Encyclopaedia Britannica* was issued many years later in 1888. There was no entry for pantheism in this edition, though pantheism received a neutral and objective introduction in the entry for theism.¹⁷² Pantheism was treated as a kind of theory of God, alongside monotheism, polytheism, and atheism. The contributor wrote that 'pantheism regards all finite things as merely aspects, modifications, or parts of one eternal self-existent being' (234). An entry of pantheism was given in the tenth edition of the *Encyclopaedia Britannica* (1902), but was only used to redirect readers to the entry for theism, and the entry for theism was a revised version of that of the ninth edition.¹⁷³ These two editions reflected many British thinkers' determination to treat pantheism objectively as a branch of thought in the last third of the nineteenth century without previous prejudices.

1.3 Conclusion

From the three pantheistic traditions and Victorian views of pantheism, we can find two reasons explaining why pantheism was seen by many Victorian thinkers as an increasingly popular pro-science religious position in Britain. First, many Victorian thinkers treated Spinoza as the beginning of so called modern pantheism. Spinoza's pantheism was founded on rationalism and naturalism. When Spinoza's philosophy was revived and developed in the late eighteenth-century in Germany, the rationalistic and naturalistic characteristics were inherited. As rationalism and naturalism were also the characteristics of science, many Victorian thinkers saw that modern pantheism and

¹⁷² Anon, 'Theism', in *Encyclopaedia Britannica*, Ninth Edition, Volume 23 (Edinburgh: Adam and Charles Black, 1888), pp. 234–49.

¹⁷³ Entry for Pantheism is in *Encyclopaedia Britannica*, Tenth Edition, Volume 18 (New York: The Werner Company, 1902), p. 214; Entry for Theism is in *Encyclopaedia Britannica*, Tenth Edition, Volume 23 (New York: The Werner Company, 1902), p. 234.

science shared these two creeds. Moreover, science, rationalism, and naturalism were used by European radicals as weapons against established churches, and such voices were increasingly popular in British publications. Though many thinkers, who belonged to traditional Christian churches, highly valued reason and studied nature through scientific methods, most of them could not push rationalism and naturalism to the extreme. They affirmed the existence of a supernatural God and the existence of miracles as truths. For many thinkers, pantheism was the extreme rationalistic and naturalistic position in which the supernatural was denied and everything was caused naturally (i. e. there were no miracles). Since the beginning of the Victorian era, working-class radicals had been using rationalism and naturalism to argue against the supernatural establishments of traditional Christianity. Middle-class radicals, such as the *Westminster Review* circle and the X-Club, joined forces to spread such criticisms. For many Victorian thinkers, the sign that rationalism and naturalism was becoming more and more popular in Britain also meant that pantheism was becoming more and more prevalent in Britain. The view that science, rationalism, and naturalism were bound up with pantheism inspired many Victorians to study pantheism.

Secondly, from the beginning of the Victorian era, there were thinkers who noticed that some scientific theories were developed by German and French pantheists with the premise that a supernatural God and a supernatural creation did not exist. The developmental theory of life, which was developed into the famous and controversial evolutionary theory of life in the mid- and late-nineteenth century, was the most salient one. Some Victorian thinkers criticised these theories as if they were pantheistic doctrines. In this way, they implied that pantheism was an important factor that influenced the formation of scientific theories. This potentially gave much credit to the image of pantheism as a science-related religious position. Therefore, it was no wonder that some Victorian thinkers viewed the increasing popularity of the developmental theory of life in Britain as a sign of the increasing popularity of pantheism.

Mid- and late-Victorian advocates of pantheism were surely influenced by these traditions, views, and scientific images of pantheism. The selected eight advocates of pantheism in this dissertation also argued for pantheism as a scientific religion. In return, they further cultivated this image of pantheism. Their use of science in support of pantheism is the topic of the rest of the dissertation.

Diverse Ways to Pantheism in Victorian Britain

In this chapter, I give accounts of the pantheistic ideas of the eight Victorian advocates of pantheism and explain how they came to advocate pantheism. These histories are seldom mentioned and studied by historians. The eight advocates of pantheism came from a wide range of religious and social backgrounds. Their lives and their views of pantheism were very different. It is necessary to first have a grasp of their lives and pantheisms before moving on to their uses of science in support of pantheism. I mainly focus on their education, intellectual development, publications, pantheistic ideas expressed in publications, and contemporaries' views of their pantheistic ideas. They are arranged according to their religious backgrounds from the most orthodox to the most secular.

The first two figures, John Hunt and Alfred Barratt, came from the Church of England background. Hunt was an Anglican clergyman and Barratt was an Anglican layman. They had very different views of pantheism. Hunt saw pantheism as a belief that God was the infinite, and he considered that pantheism was the end of all rational theological speculations. Barratt saw pantheism as a belief that God was the universal consciousness. They also arrived at pantheism from quite different routes. Hunt developed an interest in studying unorthodox theology while he worked as a clergyman, and he chose to write on pantheism because he found that pantheism was treated in a biased manner in and before the early-1860s in Britain. He endeavoured to correct the biased image of pantheism and proposed pantheism as a valuable theological speculation. Barratt was a moral philosopher and he tried to develop an evolutionary ethics. He proposed pantheism as the next step of the evolution of religion. Nevertheless, they did have some similarities. Both of them stressed the validity of the applications of rationalism and new scientific discoveries to Christian theology. They considered pantheistic images of God to be future images of God when rationalism and science became dominant in society. They were liberal when it came to the speculations on the essence of God and on the relationship between God and the world; but when

it came to religious practice, they were rather traditional and affirmed the way of worship of the Church of England. They presented pantheism not as an unorthodox theological position, but rather as a more thoughtful orthodox position. According to Hunt, pantheism had already been proposed by Christian saints, such as Saint Paul; and according to Barratt, Christianity would evolve into pantheism in the future. They were seldom criticised by their reviewers as unorthodox or blasphemous. These two figures were uncommon types of Church of England clergymen and subscribers, nonetheless, their cases show that while there were many Victorian Christian thinkers treated pantheism as an anti-Christian position, there were thinkers from the Church of England willing to openly treat pantheism as an orthodox position.

The next two figures are Unitarian ministers James Martineau and Thomas Elford Poynting. Poynting was taught by Martineau and was greatly influenced by Martineau's higher pantheism. Both of their pantheistic ideas were influenced by Joseph Priestley (1733–1804), who was a prominent philosopher, theologian, scientific practitioner, and advocate of Unitarianism. In philosophy and theology, Priestley was famous for his philosophy of necessity and materialistic monism.¹⁷⁴ It is rare to see scholars associating Priestley with pantheism, though there were some signs of pantheism in Priestley's thought. Priestley was against the dualism of matter and spirit, and he preferred to see everything as matter. He was not atheistic, and he considered that everything in the universe was necessitated by God. Though he preferred to not make claims about God's nature, it can be inferred that his God was to a very large extent immanent in the universe. Martineau's biographer Joseph Estlin Carpenter (1844–1927) once called Priestley's theology 'quasi-materialistic pantheism'.¹⁷⁵ The young Martineau was in favour of Priestley's view of an immanent God. Although he later repudiated Priestley's necessitarianism since he found necessitarianism incompatible with the idea of freewill, he still held the idea of an immanent God and used it to support his view that religion was also a discipline that studied the physical universe. According to Martineau, God

¹⁷⁴ James Dybikowski, 'Joseph Priestley, Metaphysician and Philosopher', in *Joseph Priestley, Scientist, Philosopher, and Theologian*, ed. by Isabel Rivers and David L. Wykes (Oxford: Oxford University Press, 2008), pp. 80–112.

¹⁷⁵ J. Estlin Carpenter, *James Martineau* (Boston: American Unitarian Association, 1905), p. 547.

was not fully identified with the universe, and there was an aspect of God that was outside the universe, which guaranteed God's freedom of will. Poynting was similar to Martineau in the way he approached and held pantheism, and he also intended to reconcile science and religion in the fields of physical studies. Deism was not an option for him, since he considered that if the laws of nature were not directly operated by God then the conclusion that there was no God at all would follow. More than Martineau, Poynting adopted Boscovish's and Faraday's matter-as-force theories to unite matter and force, and to turn everything into force. Such a strategy had been adopted by Priestley who used Boscovish's matter-as-force theory to substantiate his monistic view of the world.¹⁷⁶ Both Martineau and Poynting preached their pantheistic ideas, and although there were some criticisms from their fellow Unitarian ministers, their pantheistic thoughts were generally tolerated as they did not radically challenge the way Unitarians practiced religion. There were not many traces of pantheism in Unitarianism, and Martineau and Poynting were again rare cases within their religious group.

Following the two Unitarian ministers are James Hinton and James Allanson Picton. They both proposed rather systematic forms of pantheism including theology and religious practice, and they were both dissenters but eventually broke with their former religious groups and became independent preachers. Picton named his scheme Christian Pantheism while reviewers of Hinton's works called Hinton's scheme Hintonism. Both schemes were utterly pantheistic. They also tried to portray their religious views as being in accordance with Christianity, especially with some Biblical lines and with the concepts of sin, salvation, and resurrection. Their views were often welcomed by radical reviewers but strongly criticised by religious reviewers. The details of their pantheisms and the ways they approached pantheism were however very different. Hinton was a surgeon, and he developed his pantheistic views while he reflected on the relationships between brain and spirit and between life and death. He believed that humans suffered because humans had defective perceptions that caused them to perceive the universe as dead, but that in fact, the universe was fully alive and was God Himself. In order to be saved from suffering, humans had to know that the

¹⁷⁶ Dybikowski, 'Priestley', p. 81.

universe was alive, to abandon the limited self, and to be emerged into the universal life. Picton was influenced by biblical criticism when he studied for the ministry. He was also greatly influenced by German idealistic pantheism, Spinoza's pantheistic philosophy, and Herbert Spencer's philosophy of the unknowable. He found pantheism to be the religious position that best synthesised his views. He saw pantheism as a belief in a united, infinite, eternal, and unknowable God. He considered that this image of God was most in accordance with science, and that the worship of this image of God would be the future of all religions including Christianity. As far as I can ascertain, Hinton and Picton did not have many followers. Their views were quite unique among thinkers in Victorian Britain.

The final two figures, Charles Bray and Constance Plumptre, were non-sectarians, necessitarians, and supporters of secular reforms. They both came from religious families; Methodism for Bray, and most likely the Church of England for Plumptre; though during their twenties, they had become non-sectarians. They both held that no phenomena were supernatural or outside the natural chain of cause and effect. Their definitions of pantheism differed in some respects. Plumptre, like Picton, defined the pantheistic God as an infinite, eternal, and mysterious entity of which everything was the manifestation. Bray defined God as force, and he was like Poynting using matter-as-force theories to reduce everything to force. The ways they approached pantheism were also different. Bray was once an enthusiastic evangelical, but he lost faith in denominational religions when he realised that there was no universally agreed religious truth. He soon found determinism and science to be more robust than denominational religions, and he devoted himself to secular social reforms, but he always believed in God. When he grew old, he gradually found pantheism to be the suitable belief for him, as it could easily and neatly synthesise the concept of God, determinism, and science while there was no need to commit to any denominations. Plumptre was a scholar of occult philosophy when she was young. She wrote on several pantheist philosophers such as the sixteenth-century Italian philosophers Giordano Bruno and Lucilio Vanini. She valued them as freethinkers who fought corrupted religious authorities, and valued pantheism as the true religion that would not conflict with science. Their cases hint at the possibility that necessitarianism and anti-

supernaturalism could bring a Victorian to advocate pantheism if he or she also believed in the existence of God.

2.1 John Hunt (1827–1907), Church of England Clergyman and Historian

2.1.1 Hunt's Life and Publications

John Hunt was born in the village of Bridgend in West Lothian, Scotland, on 21 January 1827.¹⁷⁷ He enrolled at the University of St Andrews in 1847. Hunt was a prolific writer on theology and the history of theology. His translations of German poems, *Select Poems: From the German* (1852) and *The Spiritual Songs of Martin Luther* (1853), were published soon after he graduated. These works seem to indicate that he learned subjects pertaining to German literature and German theology at St Andrews. In 1855, he was ordained as an Anglican deacon, and two years later he was ordained priest. Between 1855 and 1859, he was a curate of Deptford in Sunderland. After that, from 1859 to 1877, he worked in churches in and around London. Between 1866 and 1877, he was also on the editorial staff of the independent religious journal, the *Contemporary Review*. In 1877, he was appointed vicar of the Otford parish in Kent.

Hunt's first book on pantheism, *An Essay on Pantheism*, was published in 1866, the year when he worked as a clergyman of the Church of England and on the staff of the *Contemporary Review*. Hunt aimed to give a relatively unbiased account of pantheistic philosophies, 'a fair hearing to [pantheistic] theologians and philosophers', which was lacking in Britain at that time.¹⁷⁸ Hunt gave an account on how he engaged with this subject in the introduction of this book. As Hunt indicated in the introduction, he began studying the history of theology at the end of 1859, at which point he had been working

¹⁷⁷ Biographies of John Hunt are few. Most of Hunt's biographical information in this paragraph comes from Philip Schaff and Samuel Macauley Jackson ed., *Encyclopedia of Living Divines and Christian Workers of all Denominations in Europe and America* (New York: Funk & Wagnalls, 1887), p. 106.

¹⁷⁸ Hunt, *Essay on Pantheism*, p. xxiii.

as a clergyman for four years ‘in a parish far away from books and civilization’ and he ‘was deeply affected with a sense of [...] ignorance of theology’ (xvii). In order to study theology, he moved to a curacy in London in 1859, and he ‘formed a plan of reading all the books which had been written against Christianity and mastering all the systems which are said to be in opposition to it’ (xvii). He read these materials at the British Museum. The famous book *Essays and Reviews* (1860), which contained seven essays written by six Church of England clergymen and a layman on the topics of biblical criticism, science, and Christianity, inspired Hunt to write a comprehensive account of the theologies that opposed Christianity. At first, Hunt intended to write on ‘Pantheism, Atheism, Deism’ (xviii) as he observed that there were no comprehensive works on any of them. Later in 1863, following a suggestion from a friend, he chose pantheism as his first subject.

Hunt mentioned that he first came across pantheism and the relationship between pantheism and Christianity when he read the sermon, ‘Spiritual Influence’, by John Caird (1820–1898) who was, after 1862, the professor of divinity at the University of Glasgow and one of Her Majesty’s chaplains of Scotland. In the sermon, Caird speculated that a human could construct a machine and leave its operation to God’s laws, but that God could not leave such a machine to anyone else as there was no second God to take care of the machine, thus God could not leave the world.¹⁷⁹ Hunt remarked that Caird’s view seemed to be the Spinozian idea of divine immanence, which had been largely denied among Christians. ‘But,’ he wrote, ‘here I found it in the sermons of a popular preacher, whose orthodoxy as a minister of the Calvinistic Church of Scotland had never been question’ (xix). He felt an eagerness to learn about Spinoza in order to see whether Spinoza and Caird were different. After studying Spinoza, he moved on to the works of French philosopher Nicolas Malebranche (1638–1715) and American transcendentalist Theodore Parker (1810–1860) who also talked much about divine immanence. Then he moved to German transcendentalists as he heard that ‘the German transcendentalists were all Pantheists’ (xix). After German philosophy, Hunt completed his studies with Hindu religions that were also widely considered pantheistic at the time.

¹⁷⁹ John Caird, *Sermons* (Edinburgh: William Blackwood and Sons, 1868), pp. 62–63.

Hunt also mentioned that he intended to make his work a defence of the use of reason in theology after reading Henry Longueville Mansel's (1820–1871) 1858 Bampton lecture of on 'The Limits of Religious Thought Examined'. Mansel developed Scottish philosopher William Hamilton's (1788–1856) criticism of the application of reason in theology, which was itself a development of Kant's criticism.¹⁸⁰ As Hunt summarised, Mansel and Hamilton held that 'reason has no right to be heard in theology' (xxi). Mansel was fiercely attacked by contemporary theologians including the famous Frederick Denison Maurice (1805–1872).¹⁸¹ Hunt was against Mansel and he found that his own work on pantheism could be used to support the application of reason in theology. For this reason, Hunt often talked about pantheism in the light of the dualism of reason and revelation in his work.

After seventeen years, in 1884, a revised and extended version of *An Essay on Pantheism* was published with a new title *Pantheism and Christianity*. In the revised introduction, Hunt indicated that he had added several chapters 'in which the argument is brought to a more definite issue'.¹⁸² Hunt's other publications included a three-volume work, *Religious Thought in England From the Reformation to the End of Last Century*, published between 1870 and 1873. With the same impartial spirit he had manifested in *An Essay on Pantheism*, Hunt claimed that the work was 'not written to promote the interest of any part, and the utmost effort ha[d] been made to preserve fairness and impartiality'.¹⁸³ He was dissatisfied with the fact that existing works on the history of religion in England were coloured by religious prejudices. 'If it is the work of a Churchman, it takes the form of a defence of the Church of England; if by a Nonconformist, it is a defence of nonconformity'.¹⁸⁴ In 1896, a sequel of *Religious*

¹⁸⁰ Bernard M. G. Reardon, 'Mansel, Henry Longueville', in *ODNB* <<https://www.oxforddnb.com/>> [accessed 12 August 2018].

¹⁸¹ Reardon, 'Mansel'.

¹⁸² John Hunt, *Pantheism and Christianity* (London: Wm. Isbister limited, 1884), p. iii.

¹⁸³ John Hunt, *Religious Thought in England From the Reformation to the End of Last Century*, 3 vols (London: Strahan & Co., 1870), I, p. v.

¹⁸⁴ *Ibid.*, p. v.

Thought in England was published to include religious thought in England in the nineteenth century. Hunt stressed again his unbiased stance by beginning his book with Goethe's words: 'I DO not judge, I only record'.¹⁸⁵ Besides these books, Hunt also continuously contributed to the *Contemporary Review*. A collection of his *Contemporary Review* papers entitled *Contemporary Essays in Theology* was published in 1873.¹⁸⁶

2.1.2 Hunt's Support for Pantheism

Hunt's views of pantheism were mainly expressed in his two books: *An Essay on Pantheism* (1866) and the new edition *Pantheism and Christianity* (1884). In both books, Hunt first gave an historical account of pantheism and then formulated some reflections on what pantheism was and how it could benefit Christianity. Hunt showed a clear favour towards pantheism and an interest to reconcile pantheism and Christian theology. As we have seen in the first chapter of this dissertation, Hunt's definition of pantheism was simple and very broad. He identified pantheism with rational theology. He wrote in *An Essay on Pantheism*:

Pantheism is, on all hands, acknowledged to be the theology of reason [...] It is the philosophy of religion; the philosophy of all religions. It is the goal of Rationalism, of Protestantism, and of Catholicism, for it is the goal of thought. There is no resting place but, by ceasing to think or reason on God and things divine.

But what is Pantheism? Substantially and primarily, Pantheism is the effort of man to know God as Being, infinite and absolute. It is ontological Theism—another, a necessary and an implied form of rational Theism. The argument from teleology proves a God at work; the argument from ontology proves a God infinite.¹⁸⁷

¹⁸⁵ John Hunt, *Religious Thought in England in the Nineteenth Century* (London: Gibbings & Co., 1896), p. v

¹⁸⁶ John Hunt, *Contemporary Essays in Theology* (London: Strahan & Co., 1873).

¹⁸⁷ Hunt, *Essay on Pantheism*, pp. 374–75. In this section, I quote Hunt mostly from *An Essay on Pantheism*, since most of his ideas were already expressed in this book. The numbers in brackets after quotations from Hunt in this section are page numbers of this book.

In Hunt's view, the belief that God was the infinite was an inevitable conclusion of any rational speculations on God's being. Hunt reasoned that if God was the infinite, then the world we lived in was surely in God, since if the world we lived in was not in God, then God was limited and was not the infinite. From this point, Hunt concluded that pantheism, the position that affirmed God's immanence and infinitude, was the end of any rational speculations on God.

The reconciliation between Christianity and pantheism was thus, in Hunt's view, the reconciliation of Christianity and reason. To renounce pantheism was, for him, to renounce reason.¹⁸⁸ Whether Christian theology should always be rational or should involve some doctrines without reason was a highly debated question in the mid-1860s. Hunt held that Christian theology should be thoroughly rationalistic, that there should not be any doctrines held without being examined by reason. He wrote in the conclusion of *An Essay of Pantheism*:

To separate between reason and revelation is to put asunder what God hath joined together. To speak of their harmony is but to enunciate a truism, for revelation is made to reason—that is, it appeals to man as a moral and rational being. It is in itself the highest reason, for it is the Divine reason speaking to the reason of man.¹⁸⁹

He considered that Christian theology should be like a science in embracing reason. He pointed out that early apostles like St Paul used reason to spread Christianity. 'Christianity recommended itself by its reasonableness to the philosophers of Alexandria. [...] Their deep longing for yet higher and clearer truth was satisfied in Christianity' (380). The abandonment of reason was equal to the abandonment of the Christian saints—'S. Paul and S. John, S. Augustine and S. Athanasius' (379)—for Hunt. This point was made more apparent in the introduction of *Pantheism and Christianity*. Hunt wrote:

¹⁸⁸ Hunt, *Essay on Pantheism*, p. 379.

¹⁸⁹ Hunt, *Essay on Pantheism*, p. 381.

The object of this book is to show not only that they [Christianity and Pantheism] can be reconciled, but that Christianity will be a great gainer by the reconciliation. Something which is called Pantheism is found invariably to be the ultimate utterance of reason on God and his relation to nature. Christianity, properly understood, will meet at the same goal.¹⁹⁰

Hunt also discussed some other issues concerning pantheism—the classification of pantheism, creation, the personality of God, good and evil, determinism, immorality, and God’s immanence. Hunt observed that there were two extreme cases of pantheism—material pantheism and spiritual pantheism, and there were ‘a multitude of intermediary views approaching more or less to either of these’.¹⁹¹ In his definition, material pantheists saw God as matter, which was equal to ‘no God’; while spiritual pantheists saw God as spiritual and there was no matter (1). He considered that material pantheists were atheists, since they had no God and he excluded this group from his account of pantheism. However, he did not give any example of material pantheism. He may have been referring to the materialistic philosophy of Voltaire or Cousin, which he left out of his account.

On the issue of creation, Hunt considered that there were three main views. He wrote: ‘The first is properly emanation, or the evolution of all things from the essence of God. The second is that of some of the ancient philosophers—that God wrought on an eternal material, external to Himself. The third is the modern Christian doctrine of the Mosaic creation’ (334). He considered the last two problematic and argued that only the first one was reasonable. Here we see he used the term ‘evolution’. He made several uses of the science of evolution in support of the emanation way of creation. This will be discussed in the fifth chapter of this dissertation.

Hunt pointed out that a common way to separate theism and pantheism was to claim that ‘the Theist believes God to be personal, the Pantheist believes Him to be

¹⁹⁰ Hunt, *Pantheism and Christianity*, p. iii.

¹⁹¹ Hunt, *Essay on Pantheism*, p. 1.

impersonal'.¹⁹² Hunt still wanted a personal God and was thus dissatisfied with the view that a pantheistic God was necessarily impersonal. He argued that God was both personal and impersonal. He reasoned that God 'is personal, because our highest conception of being is as a person. Only to the personal can we ascribe reason, consciousness, freedom of action. And here our idea of God emerges as that of the highest personality' (341). But God 'must be something more than is implied in the word person'; God 'is more than personal, and in this sense impersonal' (341). He considered that when pantheists claimed God as impersonal, they meant that God was more than a perfect human being, but not that God was less than a human being. He also considered that to conceive God as a perfect human being was legitimate, since God as the infinite included the image of a perfect human being.

The problem of evil in pantheism was also tackled by Hunt. He pointed out that 'Pantheism is sometimes defined as a doctrine which denies the distinction between good and evil'.¹⁹³ He considered that 'this definition is too indefinite to be of any service' (351). He argued that in Christian 'religious philosophy' 'evil or sin is generally identified with imperfection' (351), and Spinoza defined evil in this way as well, thus if the distinction between good and evil was not denied in Christianity, it was not denied in pantheism as well.

As for the issues of freewill and immortality. Hunt held the same view as Spinoza that individuals' freedom of will and immortality were guaranteed by the freedom and immortality of God. Since 'we are but modes of God' (355), God's freedom and immortality were our freedom and immortality. Hunt considered that the resurrection of Christ was not the literal resurrection of Christ's physical body but was an indication that Christ's 'spiritual body' (355) never died.

'[T]he question of God's immanency in the universe' was considered by Hunt another way to ask whether God was personal or impersonal or to ask 'if God has created only once, or if He creates unceasingly' (355). Hunt's view was that God 'must be in His universe as well as out of it', must be 'immanent in the world, yet transcending the world' (356). Hunt considered that a God that 'is far distant, dwelling in some special

¹⁹² Hunt, *Essay on Pantheism*, p. 341.

¹⁹³ Hunt, *Essay on Pantheism*, p. 351.

heaven' (356) was not an infinite God, since such a God was contained by the heaven. In his view, God, the infinite, must be immanent in the universe and must create unceasingly.

The reception of Hunt's works on pantheism was generally positive. It was probably Hunt's emphasis on neutrality—his claim that he did not intend to defend any churches in his works but to bring out pantheism as it really was—that helped him to avoid criticism. The pantheism he defined and advocated was also too broad to be criticised. To criticise his pantheism was almost equal to criticising reason itself.

An account of *An Essay on Pantheism* in the critical journal, the *Reader*, read that 'on the whole, the work is a very creditable performance'.¹⁹⁴ The reviewer agreed with Hunt on most points and spoke positively of pantheism.¹⁹⁵ The independent literary review journal, the *Athenaeum*, spoke highly of this book, observing that '[n]one can peruse his treatises without being struck with the honest purpose of the author to deal fairly with the men of whom he speaks, and not to misrepresent their opinions. As an introduction to the study of Pantheism we believe the book to be valuable'.¹⁹⁶ But the reviewer also pointed out that this work was not for veteran philosophers: 'It will hardly satisfy those who have already studied philosophy or theology, because it is unsystematic and its materials are loosely arranged' (326). The radical journal, the *Westminster Review*, welcomed Hunt's study and his identity as an orthodox churchman. It was written that '[w]e are sometimes inclined to despair of the prospects of theology within the bounds of the regularly constituted and creed-bound churches. The appearance of such a book as Mr. John Hunt's, on Pantheism, is therefore the more cheering'.¹⁹⁷ A reviewer of the *Contemporary Review* gave Hunt praise, even though he wrote somewhat negatively of pantheism and criticised many of Hunt's points. The

¹⁹⁴ Anon, 'An Essay on Pantheism', *Reader*, 7 (1866), 691–92 (p. 691).

¹⁹⁵ These reviewers' views of pantheism are summarised in the first chapter of this dissertation. Here I demonstrate their views of Hunt's works.

¹⁹⁶ Anon, 'An Essay on Pantheism', *Athenaeum*, 2029 (1866), 326–27 (p. 326).

¹⁹⁷ Anon, 'Theology and Philosophy', *Westminster Review*, 30 (1866), 465–82 (p. 474).

reviewer wrote: 'it is the work of a man indefatigable in his pursuit of truth, not content with second-hand information where it was accessible to him at the fountainhead, making his task a labour of love, and proclaiming the results fearlessly. There is, we believe, no English treatise bringing together anything like the same amount of information, given, wherever it was possible, in the words of his authorities, and grouped with an instructive clearness'.¹⁹⁸

The new edition, *Pantheism and Christianity*, received yet higher praises. The Scottish literary review journal, the *Scottish Review*, commented that '[e]xcellent as the essay on Pantheism is, its successor is in every way a more elaborate, complete and satisfactory work'.¹⁹⁹ The Evangelical Nonconformist journal, the *British Quarterly Review*, praised Hunt's literary talent, observing that 'Dr. Hunt is to be congratulated on his grasp and his great power of presenting the leading features of complicated systems in a few paragraphs. His research has been enormous; and if he had not been gifted with a strongly individual and at the same time assimilative and liberal genius, the result would have been a Dryasdust book'.²⁰⁰ The reviewer also praised Hunt's neutral stance: 'Dr. Hunt is finely liberal and tolerant; the book is a condemnation of all narrow sectarianism and dogmatism. Many [...] will no doubt be led to say, "I like your book because it is inclusive, not exclusive"' (485). He also called *An Essay of Pantheism* a 'remarkable essay on Pantheism' (484).

The Unitarian theologian C. B. Upton (1831–1920), who wrote many essays criticising pantheism, praised Hunt's work, writing that 'we expect that his essay in its new form will be welcomed by many readers'.²⁰¹ However, he considered that '[t]he general character of the book is popular and descriptive, rather than analytic and logical' (372), and that 'it does not succeed in giving a very clear idea either of what are the characteristic marks of Pantheism as compared with other forms of religious belief, or of the relations in which the different Pantheistic systems stand to each other' (372-73).

¹⁹⁸ Anon, 'An Essay on Pantheism', *Contemporary Review*, 4 (1867), 124–26 (p. 125).

¹⁹⁹ Anon, 'Pantheism and Christianity', *Scottish Review*, 6 (1885), 172–74 (p. 172).

²⁰⁰ Anon, 'Pantheism and Christianity', *British Quarterly Review*, 158 (1884), 484–85 (p. 485).

²⁰¹ C. B. Upton, 'Dr. Hunt's "Pantheism and Christianity"', *Modern Review*, April 1884, 372–73 (p. 372).

Upton especially criticised Hunt's broad definition of pantheism for mingling traditional Christian theism and pantheism. He considered that traditional Christian theism was in opposition to pantheism in the sense that humans had individual wills, that their wills were not God's will, so that they had Sin and needed salvation.

As these reviewers indicated, Hunt's works were like encyclopaedias of pantheism. He successfully created an unbiased image of pantheism, though philosophers might find his accounts lacking in detail and his reflections on pantheism too simple. His identification of pantheism with rationalism appeared promising, but he seemed to ignore that the poetical aspect of pantheism was more emotional and instinctive than rationalistic. Radical presses found his positive views towards pantheism useful, while more critical periodicals more readily found weaknesses in his philosophical and theological accounts.

2.2 Alfred Barratt (1844–1881), Anglican Layman and Oxford Fellow

2.2.1 Barratt's Life and Publications

Alfred Barratt was born in Manchester in 1844, the eldest son of a solicitor, James Barratt.²⁰² As Michael Ruse writes, Barratt received a very good education. He graduated from Balliol College, Oxford, in 1866 with a double first degree from the classical, mathematical, and law school and the modern history school. He worked at Oxford University thereafter. In 1867, he became a fellow at Brasenose College, Oxford. In 1870, he acquired the Eldon law scholarship. In 1876, he married a school friend's sister, Dorothea, and they had a daughter. In 1880, he was appointed secretary to the Oxford University commission. The following year, he died because of overwork at the age of 37. As he died early, he only published two books. One was *Physical Ethics* published in 1869,²⁰³ and the other was an unfinished work *Physical Metempiric*

²⁰² The biographical information of this paragraph comes from Michael Ruse, 'Barratt, Alfred (1844–1881)', in *ODNB* <<https://www.oxforddnb.com/>> [accessed 12 August 2018].

²⁰³ Alfred Barratt, *Physical Ethics or the Science of Action* (London: Williams and Norgate, 1869).

published in 1883 after his death. His religious belief is not specified by Ruse, but Barratt mentioned that he subscribed to the doctrines of the Church of England at the end of *Physical Ethics*.

2.2.2 Barratt's Pantheistic Ideas

Barratt's interest in pantheism was exposed in *Physical Ethics*. In this book, Barratt aimed to propose an ethical system built on physical sciences without any assumption of supernatural intervention. Barratt saw himself as a student of the famous progressive evolutionary philosopher Herbert Spencer, though he sometimes disagreed with Spencer.²⁰⁴ His philosophy was centred on progressive evolutionism, like Spencer. Regarding religion, Barratt held that religious images of God reflected man's dreams of perfection. According to Barratt, in Christianity, man dreamed that his consciousness could be extended from individuals to the whole of humanity, and the image of the Christian God bore the dream of universal humanity; when this dream came true, man would dream to extend his consciousness further to become a universal consciousness; and thus, the future image of God would be that of a universal consciousness. Barratt knew that to see God as a universal consciousness was pantheistic, and he claimed that 'in the future expression of man's idea of the relation of the Deity to the universe we may anticipate a strong leaning to Pantheism'.²⁰⁵ Since his view of pantheism was a part of his evolutionary philosophy, the details will be discussed in the fifth chapter of this dissertation to avoid repetition.

Barratt believed that the pantheistic mind-set would be the future of humanity. He was pantheistic when he made claims such as '[i]t matters [...] little whether we speak of the Deity as an Omniscient Mind or as a Self-Conscious Universe'.²⁰⁶ But he still claimed to be a believer in the doctrines of the Church of England. At the end of the book, he wrote:

²⁰⁴ Ruse, 'Barratt'.

²⁰⁵ Barratt, *Ethics*, p. 129.

²⁰⁶ Barratt, *Ethics*, p. 127.

I have spoken many things harshly [...] of some of the forms and doctrines of our 19th century Christianity, and especially of that branch of it to which I belong, I cannot forbear to express my belief that in Christianity rather than in any hostile school of religious thought, and in the Church of England as its most typical and comprehensive phase, lies the natural source of that regeneration of religious life and of that extension of man's belief and sympathy beyond the old dead letter of the law to the level of his highest knowledge and ideas.²⁰⁷

In Barratt's view, the Church of England was like other religions gradually turning towards pantheism,²⁰⁸ and before the pantheistic future became real, he was satisfied with the current Church of England.

Barratt's book was generally well received. H. Calderwood, a reviewer in the independent religious journal, the *Contemporary Review*, pointed out that '[t]he advanced guard are now on as far as a region of Physical Ethics',²⁰⁹ and that Barratt was doing this fashionable practice. The radical critical journal, the *Examiner*, pointed out that most of Barratt's ethical ideas were not original at the time and Barratt's work looked like a student notebook, but the reviewer still credited the work as 'a successful attempt to systematise for the first time a very heterogeneous and scattered mass of fact and theory'.²¹⁰ Barratt's view of pantheism was noticed by the reviewer, who could not understand how Barratt could make 'an uncalled-for avowal of his adhesion to the Church of England' while asserting that 'Pantheism is to be the religion of the future' (53). He questioned Barratt's expertise in religious issues.

Barratt's work was ambitious and stylish but lacked maturity. Barratt tried to make himself clear by using extensive notes and this resulted in a lack of simplicity and

²⁰⁷ Barratt, *Ethics*, pp. 386–87.

²⁰⁸ Barratt, *Ethics*, p. 129.

²⁰⁹ H. Calderwood, 'The Science of Morals', *Contemporary Review*, 14 (1870), 42–57. There is no biographical information about him in *ODNB* or *WBIS*.

²¹⁰ Anon, 'Physical Ethics or the Science of Action', *Examiner*, 3234 (1870), 53.

sharpness. The part about pantheism had many interesting and original ideas, however, it lacked enough development. It is no wonder that he was fiercely criticised by the critical journal the *Examiner*.

2.3 James Martineau (1805–1900), Unitarian Minister

2.3.1 Martineau's Life and Publications

James Martineau was born in a middle-class merchant family in Norwich, England, in 1805.²¹¹ He received a good education. His father Thomas Martineau (1764–1826) was keen on educating his eight children. The famous female writer and journalist Harriet Martineau (1802–1876) was one of them. As the second youngest child, James' was also helped in his education by his brothers and sisters. James attended the public grammar school in the cathedral close between 1815 and 1819. He then spent two years at the school of Unitarian minister Lant Carpenter (1780–1840) in Bristol. At Carpenter's school, he learned natural sciences and scientific ways of thinking. Between 1821 and 1822, he received a training in machine tool maker James Fox's (1780–1830) firm in Derby between 1821 and 1822. After that, he decided to take a career in the ministry and studied at Manchester College, York, between 1822 and 1826. In 1828, James moved to Dublin and took the post of junior minister of Eustace Street Presbyterian Meeting-House. After about four years in Dublin, he moved to Liverpool in 1832 and worked as a Unitarian minister until 1857. In the meantime, when Manchester College was moved from York to Manchester in 1840, Martineau was appointed professor of mental and moral philosophy and logic in the college. The college was moved again to London in 1853, and Martineau later moved there in 1857. He became a full-time tutor in the college and a Unitarian minister of Little Portland Street Chapel in London.

²¹¹ The biographical information in this paragraph mainly comes from: Ralph Waller, 'Martineau, James (1805–1900)', in *ODNB* <<https://www.oxforddnb.com/>> [accessed 12 August 2018]; Ralph Waller, 'James Martineau', (unpublished doctoral dissertation, King's College London, 1986); J. Carpenter, *Martineau*; and James Drummond and C. B. Upton, *The Life and Letters of James Martineau*, 2 vols (New York: Dodd, Mead, and Company, 1901–02).

Between 1869 and 1885 Martineau was appointed principal of Manchester College, London, and then he retired from public work.

Martineau was a productive essayist and lecturer. He began to lecture and write for periodicals during his college days at Manchester College, York. Martineau often wrote about science and religion and their reconciliation. It was one of Martineau's doctrines that religious claims must not go against reason.²¹² He was one of the most famous apologists for the theistic position in Victorian Britain. He confronted Herbert Spencer and John Tyndall on topics such as agnosticism, evolution, and scientific materialism in the 1860s and the 1870s, and he was praised by his contemporaries as 'a champion of theism'.²¹³ After his retirement, he composed several treatises to summarise his thought, of which *Types of Ethical Theory* (1885), *A Study of Religion* (1888), and *The Seat of Authority in Religion* (1890) were the most famous.

2.3.2 Martineau's Pantheistic Ideas

After Martineau's death in 1900, five biographies were published within six years. Among them, Joseph Estlin Carpenter's *James Martineau* (1905) was well-written, and James Drummond and Charles Barnes Upton's *The Life and Letters of James Martineau* (1901) was the official one and contained a lengthy account of Martineau's philosophy and theology.²¹⁴ Besides these biographical works, a large number of papers, books, encyclopaedia entries have appeared in the past two centuries introducing, analysing and discussing Martineau's ideas. These materials cover almost all noteworthy aspects of Martineau's thought. I select relevant materials from this literature base as well as Martineau's original writings to show how Martineau approached pantheism and what his pantheistic ideas were.

Joseph Estlin Carpenter pointed out that when Martineau began to study for the ministry at Manchester College, York, he was already in favour of pantheism. Martineau was at first under the influence of the Unitarian theologian and natural philosopher

²¹² Waller, *ODNB*.

²¹³ Waller, doctoral dissertation, p. 8.

²¹⁴ *Ibid.*, pp. 6-12.

Joseph Priestley's 'quasi-materialistic pantheism', and he found the pantheistic poetry of Wordsworth and Shelley appealing.²¹⁵ A group of essays written by Martineau in the autumn of 1824 showed Martineau's interests in the pantheistic conception of God, and he was accused of pantheism by his readers.²¹⁶ These essays included the prototypes of Martineau's views of the relationship between God and the world, and of the relationship between science and religion. In the first essay, Martineau claimed that general laws proposed by scientific practitioners were only statements of facts, but not actual causes of natural phenomena. In Martineau's view, scientific laws stated invariable sequences, but causes were not simply invariable sequences, and there should be something voluntary, something intellectual, in causations. He claimed that not only the first cause, which was normally attributed to God in Christian theology, was intellectual, but also that the causes of every effect must be intellectual. As all causes were intellectual, Martineau also attributed them to God, and therefore, in his view, God became immanent in nature and was the direct cause of everything. He further claimed that since the study of the first cause, i.e. God, was normally considered the function of religion, so the study of the causes of every effect should be the function of religion but not of science. After the publication of the first essay, Martineau received 'charges of pantheism and atheism'.²¹⁷ He was surprised but did not change his claims on the immanence of God in his next two essays. He concluded in the second essay that 'all uniformity in nature is the immediate result of the harmonising agency of God', and in the third essay that 'of him, and through him, and to him are all things'.²¹⁸

The years between 1840 and 1849 was the foundation period of Martineau's philosophical theism.²¹⁹ His sophisticated views of the relationships between science and religion and between nature and God were formed during this period. There was a controversy between Unitarian apologists and Anglican critics in Liverpool in 1839 in

²¹⁵ J. Carpenter, *Martineau*, p. 547.

²¹⁶ *Ibid.*, pp. 49–51. Carpenter gave an account of these essays and attached several paragraphs.

²¹⁷ *Ibid.*, p. 51.

²¹⁸ *Ibid.*, p. 51.

²¹⁹ *Ibid.*, p. x; Waller, ODNB.

which Martineau participated. After the controversy, he felt a need to break away from Priestley's philosophy of necessity.²²⁰ He seriously rethought the foundation of his philosophy when he was preparing lectures for his college work. In Priestley's philosophy of necessity, free will was an illusion and every will was determined. Martineau had a deep sense that there was something voluntary behind natural phenomena, or that there was free will in nature. He developed a theory that identified cause and will.²²¹ He believed that we intuitively conceive that every phenomenon must have a cause and that this experience of causation is the foundation of our knowledge; otherwise, he claimed, knowledge would be impossible.²²² Will in Martineau's view meant purpose and implied consciousness and personality.²²³ He considered that we intuitively conceive our will to be the causes of our actions, and that we can by analogy conceive causes outside ourselves in nature to also be wills. By conceiving natural causes as wills, Martineau considered that there should be a person responsible for these wills, and this person was God. Wills of nature were thus the Will of God, and God was in this sense immanent in everything. Since will was conscious and personal in his understanding, so every cause must also be conscious and personal. Natural laws and forces proposed by scientific practitioners were thus not causes because they had no purpose or personality. As J. Estlin Carpenter pointed out: 'Force as defined by Martineau, "Will minus purpose," can neither exist nor act; it is only a creation of the mind, convenient for scientific calculation, but in no way representing the total reality. Science, therefore, had no business to treat the terms which express the phases of power under various combinations of circumstance'.²²⁴ By the end of the 1840s, Martineau had formed the idea that science disclosed the methods of nature, but the causes of nature must be disclosed by religion. This was the reason Martineau usually

²²⁰ J. Carpenter, *Martineau*, p. 548.

²²¹ Drummond and Upton, *Martineau*, II, p. 279.

²²² J. Carpenter, *Martineau*, p. 307.

²²³ *Ibid.*, p. 309.

²²⁴ *Ibid.*, p. 310.

gave when he insisted that religion must not retreat from investigations concerning the physical universe.

Martineau's pantheism was a kind of 'higher pantheism', as philosopher Alfred William Benn (1843–1916) also called it.²²⁵ When Martineau attacked necessitarianism, he also attacked the pantheism that sided with necessitarianism. In his view, although God was immanent in the world, God and the world must not be identical. He considered that if God had free will, then God must have a part outside the world which was not confined by the world, therefore, he considered that God must have a supernatural element. In his article 'Nature and God', he showed these considerations in his comments on the pantheism of Thomas Elford Poynting. Martineau claimed that the pantheism he was against was the pantheism that identified nature and God, rather than the pantheism that affirmed the transcendency of God. He wrote that '[w]e use this word [pantheism], not as a loose term of current reproach,—reproach often directed against precisely what is most pure and true in the religion of thoughtful men,—but rigorously, to mark the absence in a scheme of the universe of any thing or being properly objective to God: and this feature we cannot but regard as a fatal loss of philosophical equilibrium'.²²⁶ He claimed that 'the Personality of God, and his Transcendency beyond Nature, are never compromised' (169). In his essay 'Distinctive Types of Christianity', he argued in favour of the pantheistic idea of the immanence of God in nature while, at the same time, refusing to give up free will. He exclaimed that '*Let Christian Theism keep Morals, and Pantheism may have Nature*'.²²⁷

²²⁵ Alfred W. Benn, 'A Study of Religion', *Academy*, 828 (1888), [179]–180, (p. 180).

²²⁶ James Martineau, 'Nature and God', in *Essays, Reviews, and Addresses*, III, pp. 143–85 (p. 168).

²²⁷ The essay was reprinted in James Martineau, *Studies of Christianity*, ed. by William R. Alger (Boston: American Unitarian Association, 1858), pp. 1–34. The quotation was on p. 23.

2.4 Thomas Elford Poynting (1813–1878), Unitarian Minister and Teacher on Scientific Subjects

2.4.1 Poynting's Life and Publications

The biographical information of Thomas Elford Poynting is much less accessible than that of Martineau. The Unitarian theologian C. B. Upton wrote a paper in memory of Poynting published in the Unitarian periodical, the *Theological Review*, in October 1879. This is the only biographical article on Poynting that I have been able to access.²²⁸ Due to the lack of materials, this section relies heavily on Upton's account of Poynting's life and views.

Upton pointed out that Poynting was a clerk to a solicitor in Bath at the age of twenty in the year 1833 and taught Latin, French, and Mathematics outside his office hours.²²⁹ Poynting later moved to Flowery Field to take charge of the school of Thomas Ashton (1775–1845), a cotton manufacturer of Flowery Field House, Hyde, Cheshire.²³⁰ In addition to the above mentioned subjects, he also taught chemistry. Upton remarked that Poynting was 'one of the most active members of a class of young men, formed for the study of botany, geology and zoology'.²³¹ At the age of thirty, Poynting decided to change his career and went to Manchester College, Manchester, to study for the Unitarian ministry.²³² James Martineau was at that time professor of mental and moral philosophy and logic in the college. Poynting was taught by Martineau. At the end of 1845, he finished his course and began to preach as an assistant to clergyman Robert Smethurst in the Presbyterian chapel in Monton Green. After Smethurst died in 1846,

²²⁸ Charles B. Upton, 'Thomas Elford Poynting: In Memoriam', *Theological Review*, 16 (1879), 487–507 (p. 489). Upton mentioned another biographical paper published in another Unitarian periodical, the *Inquirer*, on 9 March 1878, though I do not have access to it.

²²⁹ Upton, 'Poynting', p. 491.

²³⁰ Jane Bedford, 'Ashton, Thomas (1818–1898)', in *ODNB* <<https://www.oxforddnb.com/>> [accessed 12 August 2018].

²³¹ Upton, 'Poynting', p. 491.

²³² *Ibid.*, p. 491.

Poynting became his successor. He worked as the minister of the Monton Green chapel until his death in 1878. During his ministership, he still offered private science lessons. His book on education, *The Temple of Education*, was published in 1853. Upton commented that this work was ‘a treatise covering the whole ground of physical and mental science’ in which Poynting held that theology must be treated ‘as an indispensable factor in a healthy and complete education’, but that the work was ‘too ambitious’ and ‘somewhat fantastic’.²³³

Poynting made several contributions to the *Inquirer* and the *Theological Review*. He also wrote a book *Glimpses of the Heaven that Lies About Us* published in London in 1860. From his writings, we can see that as a man working in both scientific education and the ministry, Poynting was deeply troubled by the materialistic and atheistic implications of science that were pervasive in the society and that were rumoured to be uttered by scientific practitioners such as Tyndall and Huxley. In his essay ‘Materialism, an Unscientific Habit of Thought’ (1874), he claimed that ‘Materialism is that notion concerning matter which leaves no room for a belief in spirit. It stands in many minds an impassable barrier, casting over them a dark and chilling shadow, paralyzing all higher faith by the suggestion that there is no longer a God to love, a soul to honour, or a heaven to expect’.²³⁴ He implied that if this materialistic atheism was ‘the nature and necessary result of true science’ (227), then he had to either stop his service of God or stop teaching science, since science led to the denial of God. It seems that this controversy between the devotion to science and the devotion to religion drove Poynting to seek the reconciliation between science and religion. What he came up with was a religious philosophy he termed ‘the Higher Pantheism’.²³⁵ Martineau also considered Poynting’s philosophy to be ‘pantheistic’.²³⁶ His pantheistic philosophy was

²³³ Ibid., p. 492.

²³⁴ Thomas Elford Poynting, ‘Materialism, an Unscientific Habit of Thought’, *Theological Review*, 11 (1874), 227–47 (227).

²³⁵ Upton pointed out that Poynting often termed his religious philosophy ‘the Higher Pantheism’ in his lectures or privately. See Upton, ‘Poynting’, p. 500.

²³⁶ Martineau, ‘Nature and God’, p. 168.

first publicized in his *Glimpses of the Heaven that Lies About Us* (1860) and later in a fuller version in 'Materialism, an Unscientific Habit of Thought' (1874).

2.4.2 Poynting's Higher Pantheism

Poynting's higher pantheism was based on a combination of Martineau's theory of force and will and the matter-as-force theories of physicists Roger Joseph Boscovich (1711–1787) and Michael Faraday.²³⁷ Poynting tried to dismiss the dualism of matter and force by using physicists' matter-as-force theories. He reduced matter to force so that everything in nature was force. He also attempted to adapt Martineau's view of force and will to propose that force in its essence was intelligent, so that 'the all-pervading force' was 'intelligent or directed by intelligence'.²³⁸ This all-pervading intelligence was considered by Poynting to be God's intelligence or God's will. Upton claimed that in Poynting's pantheism, 'Nature [...] was none other than the living word of God; its essence His volitions; its laws His habits of action; its adaptations the work of His wisdom; its loveliness and beneficence the ever-renewed expression of His Eternal Beauty and His Eternal Love'.²³⁹

Through this pantheistic view of God and nature, Poynting was able to claim that science did not necessarily lead to materialistic atheism. Upton pointed out that in a short novel of Poynting, *Norton Purnell* (1865), Poynting opposed the view that 'the laws of nature are so perfect, so all-pervading, that they seem to leave no need for Him [God], no room for His presence'.²⁴⁰ Through the fictional character Norton, Poynting argued that laws were actions of God but not something separated from God. He wrote: 'There is no law of nature, except the law of God's living action. God is *here!* by my side and dwelling in me'.²⁴¹ Poynting implied that when conceiving God as immanent in

²³⁷ His use of scientific theories will be further discussed in the third chapter of this dissertation.

²³⁸ Poynting, 'Materialism', p. 244.

²³⁹ Upton, 'Poynting', p. 488.

²⁴⁰ *Ibid.*, p. 489. This was a sentence quoted by Upton from *Norton Purnell*. I have no access to this novel, so I quoted Upton's quotations.

²⁴¹ *Ibid.*, p. 489.

nature and conceiving natural laws as God's actions, the perfectness and the all-pervasiveness of natural laws did not exclude God from nature, but instead confirmed the perfection and the omnipresence of God. Therefore, the scientific quest for natural laws did not have to result in atheism.

Upton pointed out that Poynting felt that his theory had brought him 'intellectual harmony' and 'spiritual joy', since it enabled him to solve the controversy between science and faith.²⁴² He felt an 'exhilaration of his soul as [...] he had thus thrown off for ever an incubus that had long weighed down his higher life'.²⁴³ He felt that this theory 'must be the true theory of the material universe', and thus he felt a missionary duty to spread this truth to others.²⁴⁴ Minister George Beaumont, a friend of Poynting, reported that Poynting 'had a feeling which seldom found formal expression, but which would sometimes get utterance in the closer confidences of friendship, and which he has expressed to me many a time in letters and in words, that he had a mission, a prophetic function in the exposition and diffusion of his spiritual philosophy'.²⁴⁵ From Poynting's writings and Upton's article, it can be inferred that Poynting did preach his pantheistic philosophy in his sermons, incorporated it into his views on scientific education, and used it to argue against materialistic atheism in periodicals.

As the name 'higher pantheism' suggests, Poynting did not fully identify God and the world. Upton pointed out that Poynting claimed that space was not within God, so God was not fully identical with the world, and that God did have a supernatural aspect where his free will was guaranteed. Poynting considered that man's will was a part of God's will, but that God still gave man free will. He did not explain what the supernatural aspect of God was, and how God gave man free will. It seems that he simply compromised the coherence of his religious philosophy in order to meet the intuitive need for free will. Upton thus judged that '[w]e do not know how to define his position

²⁴² *Ibid.*, p. 494.

²⁴³ *Ibid.*, pp. 494–95.

²⁴⁴ *Ibid.*, p. 494.

²⁴⁵ *Ibid.*, p. 491. Upton quoted these words from Beaumont.

more clearly than by saying that he was psychologically Theistic and metaphysically Pantheistic'.²⁴⁶

2.5 James Allanson Picton (1832–1910), Congregational Minister and Politician

2.5.1 Picton's Life and Publications

James Allanson Picton was born in Liverpool in 1832.²⁴⁷ His father James Allanson Picton (1805–1889) was a famous antiquary and architect.²⁴⁸ Picton was educated at a Liverpool high school and the mechanics institute, and he began to work in his father's office at the age of fifteen. At the age of nineteen, Picton decided to train for the Congregational ministry. He attended courses simultaneously at Lancashire Independent College, which was founded by the Lancashire Congregational Union, and at Owens College, Manchester, which was later incorporated into the University of Manchester. His tutor in Lancashire Independent College, Samuel Davidson (1807–1898), was at that time engaged in a controversy centred on his higher criticisms of the Bible. Picton sided with his tutor and supported theological liberalism. His radical position made his ministerial career difficult and unstable. In 1855, he started a master's degree at London University. In 1857, he obtained his first ministerial position in the Church of St John the Evangelist in Cheetham Hill, Manchester. But a few years later, in 1862, he was accused of heresy because the radical opinions he defended in a discourse, and he was forced to move to Gallowtree Gate Congregational Chapel in Leicester. In

²⁴⁶ *Ibid.*, p. 501. Besides the articles mentioned above, there is no other review of Poynting's works found, thus there is no summary of reviews of Poynting's works in this section.

²⁴⁷ Stephen C. Orchard, 'Picton, James Allanson (1832–1910)', in *ODNB* <<https://www.oxforddnb.com/>> [accessed 12 August 2018]. Picton's biographical information in this paragraph comes from this entry.

²⁴⁸ C. W. Sutton, 'Picton, Sir James Allanson (1805–1889)', in *ODNB* <<https://www.oxforddnb.com/>> [accessed 12 August 2018].

1869, Picton moved again to a Congregational chapel in St Thomas's Square, Hackney, where he continued to deliver his radical views.

In 1870, a course of Picton's lectures was published in the book *New Theories and the Old Faith*. In these lectures, Picton showed his views of religion as well as his interests in using science. These lectures covered the nature of religion, the inspirations of God, and the infallibility of the Bible. Picton held that religion was a necessary aspect of human existence, but that theological opinions should be modified constantly according to the progress of human knowledge, especially scientific discoveries. He believed that the Bible was not the only inspiration from God and that God inspired humans continuously. He said: 'the work of inspiration has not on any theory been confined to the production of a book. It has been [...] a continuous though variable force in the development and progress of mankind'.²⁴⁹ In his view, the Bible was not infallible.

The book was generally well received. The literary review journal, the *Athenaeum*, praised it, claiming that '[u]nlike most of the divines who speak from the pulpit or the press, he shows himself abreast of the age in its best thoughts about the Scriptures, familiar with the tendencies and results of science, and alive to the doings of historical criticism. The volume may be confidently recommended as one of healthy tone, fitted to enlighten, instruct and elevate'.²⁵⁰ The independent religious journal, the *Contemporary Review*, pointed out that '[t]he book belongs to a class which is becoming common; a class which distinctly marks the present transition era of theology'.²⁵¹ The Evangelical Nonconformist periodical, the *British Quarterly Review*, commented that '[n]otwithstanding grave differences of opinion with Mr. Picton, we are eager to admit our extremely high appreciation of the power and spirit of this very remarkable volume'.²⁵² Even Charles Darwin (1809–1882) read the book. When Darwin discussed

²⁴⁹ James Allanson Picton, *New Theories and the Old Faith* (Edinburgh: Williams and Norgate, 1870), p. 70.

²⁵⁰ Anon, 'New Theories and the Old Faith', *Athenaeum*, 2235 (1870), 272–73 (p. 273).

²⁵¹ Anon, 'New Theories and the Old Faith', *Contemporary Review*, 15 (1870), 292.

²⁵² Anon, 'New Theories and the Old Faith', *British Quarterly Review*, 104 (1870), 559–61 (pp. 559–60).

how humans' belief in immortality or the soul was developed in his book *The Descent of Man*, he mentioned Picton's words about the relationship between developmental theory and the soul and immortality.²⁵³ In these words, Picton argued that there was no dualism between soul and body, that 'I do not pretend to *have* a soul; I am a soul' (193). He considered that the current body of human beings came into being through 'an indefinitely long process of creation' (193), rather than through any sudden creation.

In *New Theories and the Old Faith*, Picton also showed that he had a considerable amount of knowledge about pantheism. He talked about pantheism in Buddhism,²⁵⁴ though he did not actively advocate pantheism. His first book advocating pantheism was a monograph, *The Mystery of Matter and Other Essays*, published in 1873.²⁵⁵ In this book, he argued that pantheism was the essence of religion. He regarded the Christian worship of God as the highest form of worship in his time and proposed a Christian pantheism as the future of all religions. Picton's contributions to periodicals greatly increased from that year. He wrote papers for leading critical journals such as the *Examiner*, the *Fortnightly Review*, and the *Academy*. He also wrote for religious journals such as the *Theological Review* (a Unitarian organ) and the *Contemporary Review*. Among his periodical papers, many concerned education, some were about religious issues, and a few were about his pantheistic views.

Picton's radical views finally forced him to leave the Congregational Union of which he had long been a member. In 1877, Picton and some others organised a Congregational conference in Leicester.²⁵⁶ At the conference, Picton read a paper, 'The Relations of Theology to Religion', in which he stressed the importance of religious feelings over creeds, arguing that 'religious communion should be based on religious

²⁵³ Charles Darwin, *The Descent of Man* (New York: A. L. Burt, 1874), p. 700. Picton, *New Theories*, pp. 190–204. This is also mentioned by James Moore in his *Post-Darwinian Controversies*, p. 398.

²⁵⁴ Picton, *New Theories*, p. 189.

²⁵⁵ James Allanson Picton, *The Mystery of Matter* (London: Macmillan and Co., 1873).

²⁵⁶ See Albert Peel, *These Hundred Years A History of the Congregational Union of England and Wales, 1831–1931* (London: Congregational Union of England and Wales, 1931), p. 266.

feeling but not on creedal uniformity'.²⁵⁷ He also questioned Christ's authority by arguing that Christ was merely a man who was wise enough to reveal some of the nature of humanity, but who performed no miracles and was constrained by the prejudices and errors of his time and nation. The conference soon caused worries within the Union. A committee was organized to consider a response to relieve the anxiety, and in the May Assembly in Union Chapel, Islington, the committee submitted a resolution reaffirming the infallibility of the Bible.²⁵⁸ After this, Picton soon left the Union. He made a farewell speech in the spring of 1878 and his name was withdrawn from the Congregational Year Book in 1879. Picton then relinquished his ministry in Hackney and described himself as an independent minister.²⁵⁹

In 1884, Picton was elected to be a liberal MP for Leicester, and he held this position until his retirement in 1894. After he retired from the House of Commons, he moved to Wales. He was a member of the local county council until 1909.²⁶⁰ The number of his contributions to periodicals declined, and he instead wrote books on Spinoza, pantheism, religion, and education. His book *The Religion of the Universe* was published in 1904 in which he revised his Christian pantheism and suggested a new name for it: The Religion of the Universe. He wrote two books introducing pantheism—*Pantheism: Its Story and Significance* (1905) and *Spinoza: A Handbook to the Ethics* (1907). He also wrote two books on the Bible and education—*The Bible in School* (1901) and *Man and the Bible* (1909).

2.5.2 Picton's Christian Pantheism or the Religion of the Universe

Picton defined pantheism as the worship of the infinite, eternal, living, united, and mysterious reality of which all things were manifestations. He saw this worship as the essence of religion and he considered that as humans developed in intellect, religion

²⁵⁷ See R. Tudur Jones, *Congregationalism in England 1662–1962* (London: Independent press, 1962), p. 263.

²⁵⁸ Peel, *Congregational Union*, p.267–68.

²⁵⁹ Orchard, 'Picton'.

²⁶⁰ Orchard, 'Picton'.

would advance closer and closer to its essence, i.e., the pantheism he defined. Picton advocated his pantheism mainly in *The Mystery of Matter* (1873) and *The Religion of the Universe* (1904). Most of his pantheistic ideas were already presented in *The Mystery of Matter*, though in a rather loose form, while *The Religion of the Universe* presented a systematic and the complete version of his pantheism.

Picton mentioned that his purpose in writing *The Mystery of Matter* was to speculate on the future of religion. In the preface of the book, he pointed out that when he observed the unstable state of faith in Victorian Britain, he felt that he had ‘a reasonable wish to forecast the final result’ (v) of this state. He argued that ‘the experience of past ages, and the knowledge of the present day, unite in pointing to some form of “Christian Pantheism” as the religion of the future’ (ix). Picton progressed his contentions throughout five essays in this volume. In addition to using rational arguments, he usually appealed to emotional happiness and intuitive correctness to sustain his claims.

In the first essay ‘Mystery of Matter’, Picton proposed the unity of soul and body, or of mind and matter. He argued that anyone who studied or speculated on mind and matter, especially with the aid of contemporary scientific knowledge, should come out at the side of Spinoza ‘into the assured consciousness of eternal, all-comprehensive, all-pervasive Life, as the only substance’ (12). He was against the traditional view that matter was dead and there was something spiritual that made matter move. He wrote that ‘I [...] resist the invasion of that divine world of will, feeling, beauty and power, in which I live, and move, and have my being, by the spectre of a dead abomination which is entirely the creation of false inference’ (55). He felt more pleased when conceiving a living universe in which nothing was separated from the essence of God, as he wrote that ‘I am sure that the oneness of the vision, so far from degrading, would unspeakably elevate my sense of the dignity and blessedness of created being’ (56).

Picton also claimed in the first essay that ‘the reality of existence is inexpressible; but worship, spiritual aspiration, and that loyalty of soul to Infinite Power which is the true essence of faith, are still, and must be for ever, the noblest energies of man’ (53), and he developed this claim in the next three essays—‘The Philosophy of Ignorance’, ‘The Antithesis of Faith and Sight’, and ‘The Essential Nature of Religion’. In ‘The Philosophy of Ignorance’, Picton argued for the existence of the infinite, eternal, living, united, and mysterious reality. He believed that we could have no ‘knowledge beyond that of

phenomena' (62), and he argued that 'fair appreciation of man's inevitable ignorance' was 'the true bearing on religious faith' (63). He hinted that Herbert Spencer had given similar arguments in the first part of *First Principles* (first published in 1862).²⁶¹ Picton wondered how, if we know nothing beyond phenomena, we can assume that there is something beyond phenomena. He tackled this question by referring to our intuition of consciousness. He considered that the thing we called 'self' is 'a background of continuous susceptibility, concerning which nothing articulate can be said, except that it generally maintains its own identity under every variety of impression' (85-86). He argued that 'it necessarily suggests to us something beneath consciousness that is not phenomenal only, but real and substantial' (87). He wrote that we 'feel the ultimate oneness of all existence—of a measureless ocean of living energy' (87), and he concluded that 'it is impossible then to exclude from thought that universal order, that inconceivable totality of Being in which our personal consciousness and all its little knowledge are engulfed. For though in its boundless extension that formless idea surpasses all thought, its unreality is utterly unthinkable' (102). Picton then argued for the liveliness of this infinite, eternal, united, and mysterious reality behind phenomena. He claimed that, emotionally, 'it seems impossible to believe that any one ever faced fairly the idea of a Universe dead and cold at the heart, without feeling that sickness of soul which seizes upon us in the apprehension of an abysmal falsehood' (108). God was identified with this reality by Picton. He wrote that 'God is a Spirit'²⁶², that '[t]he word "Spirit" may rather be taken as an abstraction of all phenomenal definition including of course molecular vibrations', that 'Spirit' meant 'an essential Substance, which is not, cannot be dead, though life we instinctively attribute to it is inconceivable', and that '[I]ife is inconceivable just because it comprehends all modes of being, all possibilities of spontaneous energy in one' (127).

In 'The Antithesis of Faith and Sight', Picton argued for the importance of faith over sensational knowledge. He was against positivistic agnosticism and materialism that saw nothing beyond our sensational knowledge. He claimed that 'sight gives colour and form; faith alone can give us an outer world. Sight gives us recurrent phenomena; faith

²⁶¹ Picton, *Mystery*, p. 95.

²⁶² He quoted from the Bible: John 4.24.

alone forms them into the Cosmos of eternal order' (170). He valued and used positive knowledge in science, but he also needed to separate his position from agnosticism and materialism as he believed in a God of whom all phenomena were manifestations.

In 'The Essential Nature of Religion', Picton argued that the worship of the reality he proposed was the essential nature of religion. He considered that 'if religion is universally possible, not to say universally binding, it must be consistent not only with freedom of thought, but with any possible issue of a conscientious use of that freedom. A universal religion cannot make any creed whatever binding upon us, except that which it does not create, but finds involved in, yet needing evolution from, the constitution of the human mind' (210). From this point, he claimed that 'we may define religion as being in its essential nature an endeavour after a practical expression of man's conscious relation to the Infinite. By our conscious relation to the Infinite, I mean that indefeasible sense of ultimate substance and all-sufficient power' (216). Picton then argued that this essential nature of religion was found in many religions. John Hunt's account of pantheistic religions in *An Essay on Pantheism* (1866) was used by Picton as a part of his demonstration.²⁶³ Picton also argued that 'the idea of religion, as an endeavour after a practical expression of our conscious relation to the Infinite, does include the inmost essence of the most earnest forms of Christianity' (229-30). St Paul was represented as an adherent of this view: 'as St. Paul says, "God shall be all in all" (281). Christ's claim of being the son of God was interpreted by Picton as an expression of the fact that humans were manifestations of God.²⁶⁴

In the final essay 'Christian Pantheism', Picton forecasted pantheism as the future of all religions. He claimed that '[i]f, in the preceding essays, the signs of the times have been in the main rightly, however imperfectly interpreted, they indicate undoubtedly the movement of religious thought towards some form of pantheism' (317). The essay was mainly a speculation on how Christianity was supporting this movement. More evidence of pantheism among Christian saints were given by Picton, and he brought in the term 'Christian Pantheism' to describe their position. He wrote that 'I see no future

²⁶³ Picton, *Mystery*, p. 249.

²⁶⁴ *Ibid.*, p. 282.

for the old religious life of apostles and prophets except in the direction of what cannot be honestly or adequately described otherwise than as Christian Pantheism' (318). John Hunt's account of the pantheistic ideas of Christian saints in *An Essay on Pantheism* was again used by Picton.²⁶⁵ Picton also argued that Christianity was more advanced than other religions in approaching the essence of religion. He wrote that 'all believers in the rationality of religion, must discover in pantheism the essence of Christian spirit' (362). He considered that in Christian practice, '[o]ur thoughts of personal life, of will, and counsel, and love, and mercy, and justice, are the warmest and brightest that we know. It is inevitable therefore that in the grandest forms they can assume they should be transferred to our dreams of the Absolute Being, whom we call God' (393-94). As Picton defined it, 'Christian Pantheism sees God in everything; and is taught, in part by the beauty of the world, to think of Him as the splendour of all things, gathered into unity, and expanded to infinite totality' (404-5). In his view, Christian practices had brought Christians closer to pantheism; and when this essence of religion was better understood by normal Christians and when their religious practices was refined by this understanding, the unstable state of faith in Britain would end, since religion would rest in its essence which was its most stable foundation.

In *The Religion of the Universe*, most of Picton's basic ideas remained the same except that he claimed that his pantheism was a development of Spencer's philosophy of the unknowable and of Spencer's evolutionary philosophy. Picton wrote that 'a humble student may sometimes help equals, and even superiors among his fellow-students, to an appreciation and practical use of some point in the Master's lessons which that master's particular aim at the time required him to leave comparatively undeveloped'.²⁶⁶ The humble student was Picton and the master was Spencer. Picton claimed that his pantheism would be the result of the full development of Spencer's philosophy of the unknowable. He believed that Spencer's unknowable was God.²⁶⁷

²⁶⁵ Ibid., p. 353.

²⁶⁶ James Allanson Picton, *The Religion of the Universe* (London: Macmillan and Co., 1904), p. 40.

²⁶⁷ Picton, *Religion of the Universe*, p. 71.

More of his uses of Spencer's philosophy of unknowable and Spencer's evolutionary views will be introduced in the fifth chapter of this dissertation.

When arguing for 'A living universe' (62), Picton also quoted Martineau from *A Study of Religion*. He wrote: 'Dr. Martineau has truly said that "homage to an automaton universe is no better than mummy worship"' (62). He recognised that Martineau supported the ideas of a living universe and an immanent God.

In the chapter on 'Eternal Life', Picton claimed that man was temporal and only God was eternal. He wrote that '[n]evertheless the words attributed to St. Paul, "In him we live and move and have our being," ought to imply, though the implication has not always been rightly interpreted, a larger assurance of eternal life, not in ourselves but in God' (303); and that death of individual man 'dissolves the limits of the apparent or individual self, and we become one with God. This is the final meaning or the words, "The spirit shall return to God who gave it"' (304).²⁶⁸ Picton considered that '[w]e do not wholly die, but meet when we merge in God' (314).

One of Picton's main purposes in this book was to argue that his pantheism was practical, or 'experimental' (267). His conclusion gives us a good taste of the idea:

The Universe shone in its magnificence without beginning before you became what you seem to be, and it will exist in its glory for ever after your departure into the unseen. Its energy, its life—for it does live—is in itself and not from without. You recognise its harmony amid discords; you own that almost daily the prophets of science are approximating to a very palpable conviction of its oneness. In that oneness you have your place; you emit your spark; you contribute your infinitesimal proportion. Willingly or not willingly you do it. But the highest life is in doing it willingly, with a sense of unreserved surrender to a perfection you cannot master. And that is best attained when, realising the ordered Universe as God, and the laws of evolution as his laws, you pursue, according to those laws, the highest good revealed to you, and wait for further light. But this is really what the Psalmist meant when he said, "Trust in the Lord, and do good" (372).

²⁶⁸ Both of his quotations were from the Bible: Acts 17.28 and Ecclesiastes 12.7.

The reviews of Picton's *The Mystery of Matter* were mixed. The radical periodical, the *Examiner*, gave a very positive assessment. It considered Picton's essays 'interesting and instructive' due to 'the evident good faith, the keen religious fervour, and the dialectical skill which characterise them'.²⁶⁹ The reviewer was 'disposed to agree with Mr. Picton that what he calls Christian Pantheism will be the religion of the future' (713), and recognised 'the fact that Mr. Picton is labouring earnestly in the cause of human progress' (714). The reviewer also pointed out that the general public needed some time to accept Picton's opinion. He praised Picton for being led by reason to the inevitable conclusion of Christian Pantheism and claimed that Picton was as brave as John Stuart Mill (1806–1873), the English philosopher who was famous for his view of social freedom. The reviewer asserted that Picton 'would rather go to hell than worship a being whom he did not believe to be good' (715), but he also pointed out that Picton's essays contained some philosophical weaknesses that might make them look like missionary works.

By contrast, the Evangelical Nonconformist journal, the *British Quarterly Review*, fiercely criticised Picton. A reviewer saw the future of religion Picton foresaw as gloomy. He wrote that Picton 'has pressed farther into the mysterious darkness, and exhibited amazing courage in facing the dread phantoms of the centreless homeless void'.²⁷⁰ He argued that Picton's pantheistic identification of God and the world was dogmatic without evidence to support it, and that Picton's vision of the future of religion could be correct only if the Bible, the existence of a personal God, the doctrine of creation, and the doctrine of redemption were all wrong.

The reviews of *The Religion of the Universe* were mixed as well. The *Athenaeum* pointed out that this work did contain many philosophical speculations even though Picton claimed that his work was religious rather than philosophical.²⁷¹ The reviewer also pointed out that many Christians might disagree with Picton's view of the essence

²⁶⁹ J. H. L., 'The Mystery of Matter', *Examiner*, 34 (1873), 713–15 (p. 713).

²⁷⁰ Anon, 'Theology, Philosophy, and Philology', *British Quarterly Review*, 58 (1873), 264–70 (p. 264).

²⁷¹ Anon, 'The Religion of the Universe', *Athenaeum*, 4001 (1904), 9.

of Christianity. They might argue that ‘Christianity, in the historical sense, means a dogma and a ritual, an authoritative Church and creed’ (9). The *Bookman*, a literary news journal, commented that ‘Yet, though “The Religion of the Universe” must be pronounced unconvincing, no one can read it without being moved by the deeply religious spirit of the author. [...] Mr. Picton [...] is himself an impressive, if not a unique example of how far “a devout Pantheist can retain all the spiritual heritage of Catholic, Anglican, or Methodist”—we may even venture to add, “or Independent”’.²⁷²

Picton’s books were well written. His logic was clear, and his arguments were convincing. Reviewers usually gave him credits on this point. As he radically changed many Christian concepts and practices, radical presses mainly adhered to his ideas while traditional religious presses mainly disliked them. Picton seemed to accept the label ‘Christian pantheist’, as the secularist author Frederick James Gould (1855–1938) called him so after a chat with him in his house.²⁷³

2.6 James Hinton (1822–1875), Surgeon and Preacher of Hintonism

2.6.1 Hinton’s Early Life and Intellectual Development

James Hinton was born in Reading, the third child in a rich family. His father John Howard Hinton (1791–1873) was at the time a naturalist and denominational leader in the Baptist church.²⁷⁴ Ellice Hopkins (1836–1904), the author of *Life and Letters of James Hinton* (1882), pointed out that ‘[c]onsecration to God and to the higher interests of life was made the very life-breath of that home; and the children grew up under a

²⁷² T. H. Darlow, ‘The Religion of the Universe’, *Bookman*, 26 (1904), 174–75 (p. 174).

²⁷³ Frederick James Gould, ‘J. Allanson Picton’, in *Chats with Pioneers of Modern Thought* (London: Watts, 1898), pp. 57–64 (p. 64).

²⁷⁴ Ellice Hopkins, *Life and Letters of James Hinton* (London: Kegan Paul, Trench & Co., 1882), pp. 1–2.

religious pressure difficult to release'.²⁷⁵ Hinton derived from his father a deep religious devotion which can be found in his later writings. John also taught his children to observe natural objects, such as birds, insects, stones, and trees. He taught the young James to have 'the intellectual thoroughness, the dislike of bad logic, and reverence for scientific methods'.²⁷⁶ In ethics, Hinton was strongly influenced by his mother Eliza. Eliza was a woman of a strong individuality who saw womanhood as valuable as manhood. Hopkins pointed out that Eliza 'infused into her son an enthusiasm of womanhood',²⁷⁷ and throughout his life, Hinton worshiped women and the virtues that were commonly considered specific to womanhood, such as love and altruism. When Hinton was at the age of about twelve, his beloved brother died of scarlet fever. Hopkins considered that the death of his brother 'made a great and lasting impression upon him' as 'James was enthusiastically attached to his brother, who was his hero and pattern in all things'.²⁷⁸ This early mental trauma seems to have inspired a special dualism of life and death in Hinton's later thoughts. After the incident, Hinton requested to be baptised and practiced as a Baptist. He was 'a pious, very orthodox boy'.²⁷⁹

Hinton did not receive a decent early education. He attended the school of his grandfather, James Hinton (1761–1823), near Oxford and moved to a Non-conformist school at Harpenden at the age about fifteen. In 1838, his father took the Devonshire Square Chapel in London, and the family moved to London from Reading. Because of financial difficulties, James was taken out of school and worked at a wholesale woollen-draper's shop in Whitechapel as a cashier. Hinton suffered to work in what he called an 'unintelligible world'.²⁸⁰ After a year, he changed to work as a clerk in an insurance office. During this period, he taught himself 'History, Metaphysics, Russian, German, Italian, Arithmetic, [and] Euclid' at night.²⁸¹ Since he was very eager to do intellectual

²⁷⁵ *Ibid.*, p. 4.

²⁷⁶ *Ibid.*, p. 3.

²⁷⁷ *Ibid.*, p. 6.

²⁷⁸ *Ibid.*, p. 5.

²⁷⁹ *Ibid.*, p. 7.

²⁸⁰ *Ibid.*, p. 8.

²⁸¹ *Ibid.*, p. 9.

work, his father let him enter the medical profession. He was sent to St Bartholomew's Hospital when he was twenty years old.

Hinton finished his medical education in the year 1847. Before he received his diploma, he took a trip to China as a surgeon on a passenger ship, the 'City of Derry', in 1846. After his graduation, he worked as a surgeon in Jamaica and then returned to London in 1850. During this period, Hinton suffered religious doubts that came from his speculations on brain, matter, spirit, good and evil, love, prostitution, and asceticism. His thinking at this time laid the foundation for his future philosophy, but caused him to suffer depression.²⁸² Neil Weir points out that by the year 1847, due to his prolonged mental suffering, Hinton lost his faith in Christianity.²⁸³ From his later religious writings, we can see that Hinton did not abandon the Bible and the concepts of God and salvation, but he was much less orthodox in interpreting them.

2.6.2 The Development of Hinton's Pantheistic Philosophy

Hinton later became famous for his view that nature was alive and man was dead, expressed first in his best seller *Man and His Dwelling-Place* (1859) and later in *Life in Nature* (1862). Hopkins inferred that Hinton's idea that nature was alive started to emerge around the year 1851.²⁸⁴ In letters to his future wife Margaret Haddon in August 1851, Hinton speculated on the brain and the soul.²⁸⁵ As a surgeon, he knew that the activity of thinking was commonly associated with the material brain. He speculated that if the brain was a 'matter [that] can "think and feel"', then perhaps the soul was a matter that could will.²⁸⁶ It seemed to him that matter could be attributed with both the properties of life and spirit. He began to try to formulate a philosophical system based on this idea.

²⁸² Havelock Ellis, *James Hinton: A Sketch* (London: Stanley Paul & Co., 1918), pp. 9–10.

²⁸³ Neil Weir, 'Hinton, James (1822–1875)', in *ODNB* <<https://www.oxforddnb.com/>> [accessed 12 August 2018].

²⁸⁴ Hopkins, *Hinton*, p. 81.

²⁸⁵ *Ibid.*, pp. 70–74. Hinton's letters are presented by Hopkins.

²⁸⁶ *Ibid.*, p. 78.

In 1855, Hinton had a sketch of his pantheistic philosophy. He presented his development of thought in a letter probably written sometime after 1866 to George Croom Robertson (1842–1892) who at the time was the Grote Professor of Mind and Logic at University College London.²⁸⁷ Hinton came up with the idea that since there was essentially nothing more in the organic than in the inorganic, then the inorganic could be viewed as alive as well.²⁸⁸ When conceiving that the inorganic and the organic shared the same substances and laws, people normally came up with the idea that the organic was as dead as the inorganic, but Hinton came up with the opposite idea that the inorganic was as alive as the organic. It was upon this idea that Hinton built his philosophy. His philosophy was brought out systematically in the book *Man and His Dwelling-Place* which was first published in 1859 and went through several editions. The book sold so well that Hinton decided to quit the medical practice and raised his family by writing. He wrote several books before returning to his practice in 1863.²⁸⁹ He also joined the newly founded Metaphysical Society in 1866 after the publication of his *The Mystery of Pain*, which was a moral essay.²⁹⁰ Among his books, he also elaborated his pantheism in *Life in Nature* (1862). The following is a short account of his pantheistic philosophy.

Hinton's philosophy can be summarised by the slogan that nature is alive and man is dead. However, the terms in this slogan did not hold their ordinary meanings. Hinton made a separation between phenomenon and noumenon. He claimed that 'the phenomenal' was 'the things which we perceive or think', and 'the noumenon' was 'the very fact of being'.²⁹¹ He credited this separation not to a philosopher, such as Kant, but to science. He claimed that science had taught man that 'Nature (or the universe, or the

²⁸⁷ Thomas William Heyck, 'Robertson, George Croom (1842–1892)', in *ODNB* <<https://www.oxforddnb.com/>> [accessed 12 August 2018].

²⁸⁸ The letter can be found in Hopkins, *Hinton*, pp. 115–16.

²⁸⁹ Ellis, *Hinton*, p. xx.

²⁹⁰ Weir, 'Hinton'.

²⁹¹ James Hinton, *Man and His Dwelling Place* (London: Smith, Elder & Co., 1872), p. 8; and a letter written by Hinton, see Hopkins, *Hinton*, p. 118.

world) is not truly and in itself such as it is to man's feeling', and that it was man's defective perception that resulted in the deviation between what we perceive and what really are.²⁹² He pushed this claim to an extreme, arguing that all 'the phenomena that sense perceives, that science investigates, are not truly existing', and that 'we are under illusion'.²⁹³ He defined 'the physical world' as the phenomenal and illusory world, while there existed a 'true nature'.²⁹⁴ Nature in Hinton's slogan meant this true nature, and the normal 'conception of nature is a hypothesis'.²⁹⁵

If reality is unknowable through perception and reasoning, then how can we know what it is? Hinton's answer was that we could know it through our feelings. In a letter to Robertson, Hinton wrote that '[i]t is a thing demanding other powers of man besides the conceiving powers in order to be known, namely, his emotional ones'.²⁹⁶ From Hinton's writings, we can see that nature in his feelings was like a motherly figure. It was active, loving, nourishing, altruistic, and educational. He claimed that 'nature is not, and cannot be, as Science has heretofore represented it, wanting in action, or inert'.²⁹⁷ He wrote that 'the perceived inertness or defect in nature is due to man's defectiveness'.²⁹⁸ Hinton meant that the inertness, or the inaction and the passiveness, people perceived in nature was not truly a property of nature, and that to perceive nature as inert was a property of human perception. He considered that this property of human perception was a defect as it hindered humans from perceiving nature aright. He also considered that scientific discoveries did not necessarily lead to the conclusion that nature was inert. He claimed that '[t]he work of science, in the discovery of

²⁹² Hinton, *Man*, pp. xxx and 8.

²⁹³ *Ibid.*, p. 9.

²⁹⁴ *Ibid.*, pp. xxx and 168.

²⁹⁵ *Ibid.*, p. xxviii.

²⁹⁶ Hopkins, *Hinton*, p. 118.

²⁹⁷ Hinton, *Man*, p. 10.

²⁹⁸ *Ibid.*, p. xxxi.

invariableness or law, is not to exclude spirituality or action, but to give to it its true meaning of holiness'.²⁹⁹

For Hinton, to be active was to be alive and spiritual, and to be inert was to be dead and physical. He wrote that '[t]o this truly active mode of Being the word spiritual has been applied; and in this sense that word will here be used', and that '[t]o be inert has the same meaning as to be dead'.³⁰⁰ In his view, these respective terms were identical. Thus, when he said that nature was alive, he meant that nature was active, spiritual, and not inert. What did he mean when he said that man was dead? It may be inferred that when he said that man was dead, he meant that humans had the tendency to perceive things as dead. However, he claimed that the death of man was not only something that happened in the human faculty of perception, but that it was the true state of man. He made a somewhat perplexing claim that it was because humans were dead but wanted to be alive that humans perceived nature as dead.³⁰¹ He linked this struggle to self-consciousness. He wrote:

This self that we are conscious of makes the world inert to us. Our present self-consciousness demands, as it correlative and condition, an inert existence around us, which passively obeys our exertion, and is respondent to our force. Self-consciousness, involving the sense of exertion, is therefore inseparable from a feeling of passiveness in that on which we act.³⁰²

Hinton considered that it was self-consciousness that caused the inertness we perceived and the evil we experienced.³⁰³ This was the origin of our sins and our

²⁹⁹ Ibid., p. 40.

³⁰⁰ Ibid., pp. xxx and xxxii.

³⁰¹ For example, 'To say that man introduces inertness into nature, implies a deadness in him: it is to say that he wants life'. Ibid., p. xxxii.

³⁰² Ibid., p. 143.

³⁰³ Ibid., p. 167.

sufferings.³⁰⁴ To destroy this self and '[t]o be one with Nature' was the salvation of man.³⁰⁵ Love was considered by Hinton to be the key to achieve salvation. He wrote that '[d]estroyed by the mightier Love, its pale and wounded victims shall arise, with freed hearts and holy hands, and join the universal life'.³⁰⁶

Hinton usually mentioned God in an orthodox manner, but when he talked about the ontology of God, he described God pantheistically. He wrote: 'To be spiritual is to be not inert. To be eternal is to BE', 'nature is the spiritual and eternal world', and 'God is THE BEING'.³⁰⁷ He also wrote that '[w]e love the Infinite, the Eternal, Him in whom, and for whom, and to whom are all things, whose will is done in heaven and earth. His will is our will; we have nothing to get; we love Him'.³⁰⁸ These words imply that in his view, nature and God were identical, and both were the only real spiritual reality of which the physical world was a defective image. In an unpublished manuscript presented by Havelock Ellis (1861–1916), Hinton's other biographer, Hinton discussed whether his view was pantheism. He asked: 'Is not here a unification of Pantheism? All that is in the strict sense God. It is that which God, by His own act [...], by His self-sacrifice, becomes'.³⁰⁹ But he considered that his pantheism was not that of the normal kind. He wrote: 'For clearly here is the error of Pantheism: it asserts that to be God which is not-God; *i.e.*, it asserts that to be Being which is not-Being'.³¹⁰ Here Hinton can be understood as arguing that normal pantheism identified God with physical nature, but he was against this kind of pantheism because physical nature was not a real Being for him. In a memoir in the *Examiner*, the writer commented that Hinton operated a

³⁰⁴ *Ibid.*, p. 150.

³⁰⁵ James Hinton, *Life in Nature* (London: Smith, Elder and Co., 1862), p. 201.

³⁰⁶ Hinton, *Man*, p. 153.

³⁰⁷ *Ibid.*, pp. xxxiii, xxxiv, and 146.

³⁰⁸ *Ibid.*, p. 124.

³⁰⁹ Havelock Ellis, 'James Hinton as a Religious Thinker', *Modern Review*, October 1881, 661–87 (p. 679).

³¹⁰ Ellis, 'James Hinton', p. 680.

‘reconciliation between biblical orthodoxy and Pantheism’ and that ‘Nature had made him a Pantheist’.³¹¹

As a surgeon who derived his ideas from scientific notions, Hinton frequently used science to support his pantheism. The view that nature was alive was directly linked to the concept of living matter against the concept of ‘dead matter’.³¹² His uses of science will be discussed in the fourth chapter of this dissertation.

Hinton’s writings attracted much attention. Reviewers generally valued Hinton’s ideas in *Man and His Dwelling-Place* and *Life in Nature* as highly original, whether they agreed with him or not. *Man and His Dwelling-Place* was published anonymously. The *Fraser’s Magazine* aimed at Broad Church readers gave it a very positive review. The reviewer claimed that it was ‘a most original, acute, well-expressed, and altogether remarkable book’.³¹³ The reviewer even claimed that Hinton’s interpretation of man and nature was orthodox. He wrote that ‘the book is distinguished not more by originality than by piety, earnestness, and eloquence. Its author is an enthusiastic Christian; and indeed his peculiar views in metaphysics and science are founded upon his interpretation of certain passages in the New Testament. It is from the sacred volume that he derives his theory that man is at present dead’ (651). He also wrote and that ‘Stripping our author’s views of the unusual phraseology in which they are disguised, they do, so far as regards the essential fact of man’s loss and redemption, coincide exactly with the orthodox teaching of the Church of England. Man is by nature and sinfulness in a spiritual sense dead’ (660).

Most reviews of *Man and His Dwelling-Place* were not so positive. Reviewers often criticised Hinton for his perplexing logic and the many repetitions. The *Saturday Review*, a journal for highly educated readers, commented that ‘*Man and his Dwelling-Place* is a very remarkable book, though we cannot say we agree with its doctrine; [...] a degree

³¹¹ Anon, ‘James Hinton’, *Examiner*, 3659 (1878), 335–36 (p. 336).

³¹² Hinton, *Man*, p. xxxii.

³¹³ A. K. H. B., ‘Concerning Man and His Dwelling-Place’, *Fraser’s Magazine*, 59 (1859), 645–61 (p. 645).

of ingenuity in making conflicting opinions throw light on each other which would make an inattentive reader complain of confusion and obscurity. To us the principle fault of its style appears to be tautology'.³¹⁴ The most influential independent review, the *Athenaeum*, claimed that '[t]he author has lost himself in a maze of four hundred pages'.³¹⁵ The *Leader and Saturday Analyst*, an organ of religious and social reformers, pointed out that '[b]y some misapprehension, however, of the full scope of philosophy, as now recognised, and an evident desire to ignore certain authorities that should have been more carefully consulted and gratefully acknowledged, the author has landed in a perplexed statement which he may find it difficult to explain'.³¹⁶

Many religious reviewers also expressed their disagreements with Hinton's religious ideas. The Evangelical Nonconformist journal, the *British Quarterly Review*, commented that '[i]t is ingenious and able; but the ground on which its large speculations are based is, in our judgement, very questionable; and as the basis is, so, of course, must the superstructure be'.³¹⁷ The Catholic organ, the *Dublin Review*, commented that '[t]his work gives us very serious pain, because we cannot fail to perceive in its writer an anxious yearning after something spiritual, and yet, to our conception, every line of his book is a complete abnegation of every part of real religion'.³¹⁸ The Evangelical journal, the *North British Review*, called the book 'this extraordinary concatenation of false doctrine'.³¹⁹

When the book was first published in 1859, reviewers seldom called it a pantheistic work. To my knowledge, only one reviewer of the *Universal Review*, a short-lived periodical, treated Hinton's ideas as pantheistic. The reviewer called attention to 'the uncommonly ugly semblance it bears to Pantheism'.³²⁰ He pointed out that '[t]he self

³¹⁴ Anon, 'Man and His Dwelling-Place', *Saturday Review*, 7 (1859), 153–55 (p. 155).

³¹⁵ Anon, 'Man and His Dwelling-Place', *Athenaeum*, 1636 (1859), 319.

³¹⁶ Anon, 'Man and His Dwelling-Place', *Leader and Saturday Analyst*, 10 (1859), 171–72 (p. 171).

³¹⁷ Anon, 'Man and His Dwelling Place', *British Quarterly Review*, 58 (1859), 565.

³¹⁸ Anon, 'Man and His Dwelling-Place', *Dublin Review*, 46 (1859), 266–67 (p. 266).

³¹⁹ Anon, 'Man and His Dwelling-Place', *North British Review*, 31 (1859), 271–74 (p. 273).

³²⁰ Anon, 'Man and His Dwelling-Place', *Universal Review*, June 1859, 481–502 (p. 500).

being the exclusion of God, and true life being the destruction of self, to admit God is to destroy self, and to have true life; the monad becomes absorbed in the existence of God, and ceases to exist as a monad. This closely resembles the absorption in Brahma of the Brahminical and Buddhist philosophies, which are acknowledged pantheistic systems' (500–1). However, when J. W. Jackson and W. H. Gillespie criticised pantheism in 1866, Hinton's work was fully recognised as a pantheistic work.³²¹ The theory in *Man and His Dwelling-Place* was called by Gillespie 'one particular phase of Pantheism' and 'the Hintonian Pantheism',³²² and by Jackson 'Hintonism'.³²³ Gillespie wrote that Hinton proposed a 'complex and compound scheme of Pantheism' and that 'we may gather [from Hinton's words] that science has been nearing the goal of the discovery that nature is alive'.³²⁴ Jackson commented that 'Hintonism is the confused statement of a profound metaphysical truth [...]. That what we sometimes call Nature, or the Material Universe, is simply force, holding a certain relation to a percipient being, science seems to be on the point of demonstrating' (187). He claimed that '[t]he truth is, Mr. Hinton, like many other talented young men, has unfortunately presumed to write a book on philosophy when he should have been still attending his classes' (187).

The book *Life in Nature*, which was roughly a revision and extension of *Man and His Dwelling-Place*, received similar reviews. The *Saturday Review* again pointed out that 'Mr. Hinton's paradox is obtained by the simple process of calling things by other than their usual names' and that '[t]he proof he offers is in one sense a truism, and in another sense a mere washing out of all the marks by which language specifies observed differences'.³²⁵ The reviewer concluded that 'it is ingenious and interesting, but singularly unscientific' (197). As Hinton revised his style of writing, the *Athenaeum* commented: 'Whilst it would be impossible to say that Mr. Hinton has made out his

³²¹ Their views of pantheism are introduced in the first chapter of this dissertation.

³²² Gillespie, 'Pantheism', pp. 90 and 96.

³²³ J. W. Jackson, 'General Remarks on Pantheism', *Journal of Sacred Literature and Biblical Record*, 10 (1866), 186–87 (p. 187).

³²⁴ Gillespie, 'Pantheism', p. 93.

³²⁵ Anon, 'Life in Nature', *Saturday Review*, 16 (1863), 196–97 (pp. 196 and 197).

case, or that we agree with him in his conclusion, we do most earnestly recommend his book to thoughtful students. His writings are eminently suggestive; and nothing perhaps is a better corrective of the self-sufficiency engendered by limited views of natural facts than works like the present, which give a glimpse of vast fields of untrodden truth for future observation'.³²⁶ The *British Quarterly Review* also gave a more positive review. The reviewer considered that this book was written 'with great boldness and originality', although that '[t]o Mr. Hinton's chief positions we do not give in our adhesion, nor does it appear to us that they are so clearly established as they must be in order to obtain the acceptance he desires'.³²⁷

As reviewers pointed out, Hinton's books contained many repetitions and his logic was often perplexing. His ideas that human's defective perception and self-consciousness made humans inert, and that knowing this situation could make humans active and be saved from misery, were difficult to understand. The way in which Hinton redefined terms could confuse readers, and there were many philosophical terms he could have used to better express his thought. His books read more like sermons than rigorous philosophical works. Nevertheless, his speculation on the liveness of matter was new at that time and his definitions of terms were rare, and this was why many reviewers credited his works as original.

2.7 Charles Bray (1811–1884), Non-Sectarian, Manufacturer, and Lay Phrenologist

In his autobiography, *Phases of Opinion and Experience during a Long Life: An Autobiography* (1884), Charles Bray gave an account of the development of his thought throughout his entire life.³²⁸ This book documents how a Victorian became a supporter

³²⁶ Anon, 'Life in Nature', *Athenaeum*, 1855 (1863), 649.

³²⁷ Anon, 'Life in Nature', *British Quarterly Review*, 37 (1863), 234–36 (p. 235).

³²⁸ Charles Bray, *Phases of Opinion and Experience during a Long Life: An Autobiography* (London: Longmans and Green, 1884). The numbers after quotations from Bray in this section are page numbers of this book.

of pantheism. In this section, I summarise the important developments in Bray's intellectual life that led him to be an advocate of pantheism. Bray's pantheism was tightly associated with the science of force, and to introduce his pantheism is basically to introduce his uses of the science of force. Therefore, in order to avoid repetition, his pantheism will be introduced in the third chapter of this dissertation.

2.7.1 Bray's Life and Intellectual Development

Bray was born in Coventry in 1811 in a wealthy ribbon manufacturer's family.³²⁹ In his autobiography, Bray pointed out that he had believed in a personal God since he was a child, and that this never changed.³³⁰ At the age of nine, he was sent to a boarding-school in the countryside of Coventry for five years, but he did not receive a decent education there. His religious belief during this period was influenced by nearby Methodists. At the age of fourteen, Bray was sent to a better school in Isleworth, near London, where he mainly learned Latin, French, and mathematics. At the age of seventeen, Bray began to work in a large warehouse in London. He was converted by an evangelical neighbour and became a zealous evangelical. He pointed out that at that time he felt that his mind was tranquil and many of his bad habits and bad tempers were adjusted under the evangelical belief. His leisure time was mostly spent in private religious reading and devotional exercises.

In 1830, Bray returned to his father's warehouse in Coventry and encountered a Unitarian minister of the Great Meeting House. When he was debating with the Unitarian minister on the doctrine of Trinity, he realised that his theological knowledge was very much insufficient, and that his religious zeal had blinded him to criticisms of his belief. He began to read the Bible and its theological interpretations critically, but he did this with 'fear and trembling', since he felt that this freedom of thought was 'a direct temptation of the Devil' (12). Bray began to suffer the most severe crisis of faith in his life. He wrote: 'The next year was certainly the most miserable year of my life. I

³²⁹ Matthew Lee, 'Bray, Charles', in *ODNB* <<https://www.oxforddnb.com/>> [accessed 12 August 2018].

³³⁰ Bray, *Phases*, pp. 3–4.

had given up my faith, and with it many of my dearest friends. I had no faith, no friends, and I had to begin to build my life over again; my mind was in a complete anarchy, or in a state of blank despair' (16). Bray decided to no longer ignore criticisms of religious beliefs, and to take a rationalist view that truths should not conflict with each other. As Christian denominations usually conflicted with each other in their doctrines, he gradually lost confidence in all sects of Christianity.

While Bray was struggling to find a new philosophical, theological, and ethical foundation for his mind, he came across *The Freedom of Will* (1754) written by American leading Calvinist theologian Jonathan Edwards (1703–1758). In Edwards' book, Bray found what he called 'Philosophy of Necessity'. Edwards proposed a deterministic view of human will: he considered that humans had no normal sense of free will, that human's will was determined by external and internal conditions and was pre-deposited by God, and that God was the absolute sovereign of the universe who ordered everything in the world.³³¹ Since God was preserved, Bray found that Edwards' philosophy satisfied his belief in God. He eagerly took this philosophy as his new foundation of thought. Bray conceived the basic doctrine of the philosophy of necessity as the idea that 'everything acted necessarily in accordance with its own nature, and that there was no freedom of choice beyond this' (17). After he drew out an ethical system based on the philosophy of necessity, Bray felt relieved from the crisis of faith. He felt that he had 'emancipated' (19) himself from the very limited view of his formal sect and 'gained a whole beautiful world' (19). He also felt 'happier' (19) since he could reconcile evils with the justice of God by his ethical system. Basically, he held that all partial evils were beneficial for the 'general good' (19). Bray considered that since everything was determined, if he tried his best but still could not solve a bad issue, then he could stop struggling and leave the issue to God trusting that God had a plan for using this evil to achieve the general good.

³³¹ Avihu Zakai, *Jonathan Edwards's Philosophy of History* (Princeton: Princeton University Press, 2003), p. 320.

Bray reflected that he had been interested in physical science since his school days,³³² but he had not received a decent scientific training. After he became a non-sectarian in his early twenties, he was much more willing to rely on scientific doctrines rather than religious doctrines, and he became a supporter of secular education and social reforms. In 1835, when he was writing a course of lectures on education to be delivered at the Mechanics' Institution in Coventry,³³³ he chanced upon George Combe's *Phrenology*.³³⁴ He was greatly attracted to phrenology. He wrote: 'if true, the system was much more practically applicable to education than any other with which I had been previously acquainted' (22). Bray considered that he was not introduced to free will but was to the natural laws of mind in phrenology, so he saw phrenology as a science of mind that was in accordance with his fundamental conviction—the philosophy of necessity. He had such a strong interest in phrenology that he applied it to his educational works and conducted phrenological studies himself. Phrenology soon became another pillar of his thought. Phrenology also drew him to consider the unity of the mental and the physical as phrenologists tried to establish connections between mind and body.

In addition to the philosophy of necessity and phrenology, Bray also adopted empiricism in his first systemic philosophical work *The Philosophy of Necessity* (1841).³³⁵ This work showed that he was keen on using scientific methods and scientific theories to sustain his philosophical and religious views. He aimed to build a philosophical and moral system based on the philosophy of necessity and empiricism, also drawing on phrenology. He announced that he was adopting the experimental philosophy of English philosopher Francis Bacon (1561–1626) as the methodology of his speculation. In his discussion of knowledge and of the relations between intellectual facilities and

³³² Bray, *Phases*, p. 3.

³³³ An institution to educate young weavers founded in 1829.

³³⁴ George Combe (1788–1858), the leading British proponent of phrenology. His *Essays in Phrenology* was first published in 1819, and *A System of Phrenology* was first published in 1824. Bray did not mention which book he read.

³³⁵ Charles Bray, *The Philosophy of Necessity; or, The Law of Consequences*, 2 vols (London: Longman, Orme, Brown, Green, and Longmans, 1841).

the external world, Bray based his views on the theories of empiricists John Locke, David Hume, Thomas Brown, and John Stuart Mill. He defined consciousness as the aggregation of sensations and claimed that we knew nothing outside sensations.³³⁶ Bray applied this scepticism on the knowability of the external world to his view of matter and spirit. He claimed that '[m]atter is known to us only as the cause of certain sensations which we call by various names, as solidity, extension, &c., but whether this cause be material or immaterial, we have no means of determining'.³³⁷ He showed a tendency to dismiss the division of matter and spirit in this work which was later developed into a more definite form.

Bray retired from business in 1856. He spent his time writing on philosophical subjects. In 1866, Bray recalled reading physicist William Robert Grove's (1811–1896) *The Correlation of Physical Forces*, and this inspired Bray to put his philosophy of necessity, phrenology, and empiricism to work in discussions about the correlation of forces. Bray recalled that at that time he 'could not see why correlation could stop at the physical forces, and why it should not be extended to mental force. Mind is a force, coming to us through the food we eat, and under the molecular action of the brain what is called physical force becomes subjective conscious force, or mind, and loses than its objective character as a force of motion, which it resumes under the action of the will' (97-98). He came up with a pantheistic philosophy on matter, force, mind, and God. He developed his theory in *On Force, and its Mental Correlates* (1866) and clarified it in 'Physics and Metaphysics' (1869), *Illusion and Delusion* (1873), *Natural Law* (1874), and his autobiography. He used theories from scientific figures, such as John Tyndall, Thomas Huxley, Herbert Spencer, William Grove (1811–1896), James Hinton, Hans Christian Oersted (1777–1851), Humphry Davy, and Henry Maudsley (1835–1918) to support his pantheism. He aimed to build his theory upon contemporary physics.

Although Bray suffered a crisis of faith in his early twenties and became a non-sectarian, his strong belief in the existence of God made him unwilling to be totally secular, and he found pantheism, which in his view was the deification of nature, a logical choice for him. He reflected in his autobiography that 'I am no Agnostic; to me

³³⁶ Bray, *Philosophy of Necessity*, I, pp. 97–99.

³³⁷ *Ibid.*, p. 143.

God is not an unknown God; I may not know the *mode* of his Being or Working, but He is known to me as everything else is, by what He does' (199).

There is one more thing worth noting here, that Bray died a pantheist. His autobiography was finished a few weeks before his death, and he gave some final reflections on death, immortality, and the meaning of life. Bray did not believe that he could continue his individuality in the form of soul in another world after the death of his body, and neither did he wish to retain his individuality forever. He wrote that '[b]ody and soul make a man: when they are separated neither can retain its identity. I am very thankful for the long term of happy life that has been allotted me. I am quite willing to retire and make room for some better fellow to come after me. We cannot die. Our individuality may be lost. But is the individuality of the very best of us worth retaining? Much less that of the great multitude' (205). Bray did not believe that the disappearance of his individuality would be the death of him. As he quoted from an unknown source: 'We live in the Eternal Order, and the Eternal Order never dies' (205). He pointed out that such a view was well expressed in Constance Caroline Woodhill Naden's 'Pantheist's Song of Immortality'.³³⁸ He quoted her verses at the end of his autobiography: 'Yes, thou shall die; but these almighty forces, | That meet to form thee, live for evermore' (206). His final words demonstrated that pantheism could satisfy a Victorian's religious needs.

³³⁸ Bray, *Phrases*, p. 206. Constance Caroline Woodhill Naden (1858–1889), English poet and philosopher, was a supporter of evolutionary ethics. Her works followed closely to that of Spencer's. See, S. M. den Otter, 'Naden, Constance Caroline Woodhill (1858–1889)', in *ODNB* <<https://www.oxforddnb.com/>> [accessed 12 August 2018].

2.8 Constance E. Plumptre (1848–1929), Writer on Occult Philosophies and Supporter of Secularism

2.8.1 Plumptre's Life and Publications

Constance E. Plumptre was born in an upper-middle-class family in Kensington, London.³³⁹ Her father Charles John Plumptre (1818–1887) was a barrister and writer on elocution. Beside Constance, Charles had two sons Reginald E. Plumptre and Claude C. M. Plumptre, and both were lawyers.³⁴⁰ The Plumptre family had some famous figures. Constance's uncle Edward Hayes Plumptre (1821–1891) was the dean of Wells, and Anne Plumptre (1760–1818) and Bell (or Annabella) Plumptre (1761–1838), female translators and writers, were Constance's ancestors.³⁴¹ The biographical information on Constance is not abundant. There is a small entry for her in *The Feminist Companion to Literature in English* (1990), but there was no entry for her in the *ODNB*, and there are no mentions of her in the studies of relevant Victorian female intellectuals, such as *Women's Theology in Nineteenth-Century Britain Transfiguring the Faith of Their Fathers* (1998), and *Infidel Feminism: Secularism, Religion and Women's Emancipation, England 1830–1914* (2013).³⁴²

Many of Plumptre's writings are however accessible. Her first publication was *General Sketch of the History of Pantheism* which was first published in 1878 and 1879 in two volumes. This was where she expressed her support for pantheism. Her enthusiasm on pantheism, science, and the reconciliation of pantheism and science was

³³⁹ Anon, 'England and Wales Census, 1861', in *Family Search* <<https://familysearch.org/>> [accessed 20 March 2015].

³⁴⁰ Anon, 'England and Wales Census, 1871', in *Family Search* <<https://familysearch.org/>> [accessed 20 March 2015].

³⁴¹ Richard Garnett, 'Plumptre, John Charles' in *ODNB* <<https://www.oxforddnb.com/>> [accessed 12 August 2018]; Virginia Blain, Patricia Clements, and Isobel Grundy, *The Feminist Companion to Literature in English* (New Haven: Yale University Press, 1990), pp. 860–61.

³⁴² Julie Melnyk ed., *Women's Theology in Nineteenth-Century Britain Transfiguring the Faith of Their Fathers* (New York: Garland, 1998); Laura Schwartz, *Infidel feminism* (Manchester: Manchester University Press, 2013).

revealed in this work. She regarded pantheism as an ancient truth and the only rational and naturalistic religion that could be in harmony with modern science. She then wrote many periodical papers on occult philosophies of historical pantheists notably Giordano Bruno (1548–1600) and Lucilio Vanini (1585–1619). Her novel *Giordano Bruno: A Tale of the Sixteenth Century* was published in 1884. Her monograph, *Natural Causation: An Essay in Four Parts*, was published in 1888, showing her interests in the philosophy of necessity and secular ethics. A collection of her periodical essays, *Studies in Little-Known Subjects*, was published in 1898. Among them, there were essays such as ‘Charles Bradlaugh: An Appeal’ (1891) and ‘The Higher Secularism’ (1894) showing her support for secular ethics and her sympathy towards the freethought and secularism movement of Holyoake and Bradlaugh. She argued that a secular ethical system with secular happiness as the highest pursuit was far better than a supernatural ethical system with unknowable gods and the afterlife as its core. Many of her essays were published in the leading radical periodical, the *Westminster Review*, and in the historical magazine, the *Antiquary*. *On the Progress of Liberty of Thought during Queen Victoria's Reign* (1902) was her last book, in which she gave an account of the development of political and religious liberty in the Victorian era.

From her writings, it can be inferred that she received a good education in literature, science, philosophy, language, and elocution. She read many of Spencer's writings when she was a little girl, and it was probably because of these writings that she became interested in science, philosophy, and freethought.³⁴³ She was also an admirer of the contemporary female writer George Eliot (1819–1880), whose insights in Plumptre's view ‘surpass[ed] not only Charles Dickens, but almost all the great writers of her time’.³⁴⁴ In Plumptre's works on Bruno and Vanini, she showed a great interest in their pantheism and their virtues of freethinking. Her interest in pantheism might be caused by the combined influence of her reading of Spencer and her studies of historical

³⁴³ In a letter to Tyndall's wife Louisa Tyndall on 15 December 1903, Plumptre wrote that she read Spencer's writings when she was a little girl. See London, Royal Institution, MS Constance Plumptre, LT68/10.

³⁴⁴ Constance Plumptre, *Natural Causation* (London: T. Fisher Unwin, 1888), p. 54.

pantheists. In a late reflection of the reasons of her historical study on pantheism and pantheists, she pointed out that she intended to use the stories of pantheists to prove the legitimacy of the battle for the liberty of thought in her time.³⁴⁵ She believed that it was right and necessary to contest the authority of Christianity, which she considered was not based on reason but on superstition. Bruno's and Vanini's contests against Christian authorities were brave examples for her.

The England and Wales Census in 1881 showed that at the age of 33, Plumptre lived with her father and worked as a lecturer on elocution in King's College, London, and as a writer on philosophical subjects.³⁴⁶ Plumptre took the housekeeping role since seventeen for more than twenty years until her father died in 1887 and one of her brothers inherited the house.³⁴⁷ As a woman, she did not have the right to own the house at that time. There is no record found about her husband or offspring.

2.8.2 Plumptre's Support for Pantheism

Plumptre mainly expressed her views of pantheism in *General Sketch of the History of Pantheism*.³⁴⁸ The first volume and the first part of the second volume were historical accounts of pantheism, and the second part of the second volume was where Plumptre presented her arguments for pantheism. Besides several other periodical articles on historic pantheists, Plumptre did not write on pantheism again later in her life. Her views were less religious compared to other figures. She focused more on the philosophical value of pantheism and regarded pantheism as unpractical due to the problem of evil. She sided with the camp of freethought and appeared as a secularist

³⁴⁵ Constance Plumptre, *Studies in Little-Known Subjects* (London: Swan Sonnenschein & Co., 1898), p. 59.

³⁴⁶ Anon, 'England and Wales Census, 1881', in *Family Search* <<https://familysearch.org/>> [accessed 20 March 2015].

³⁴⁷ Gould, 'Miss Constance Plumptre', in *Chats with Pioneers of Modern Thought*, pp. 28-33 (p. 31).

³⁴⁸ Constance E. Plumptre, *General Sketch of the History of Pantheism*, 2 vols (London: Samuel Deacon & Co., 1878–79). The numbers in brackets after quotations from Plumptre in the next paragraphs are page numbers of the second volume of this work.

rather than a religious person. It can be inferred that she did not consider that religion was a necessity for all people, but she did consider that pantheism was the best religious choice if a religion was needed.

Plumptre defined pantheism as a belief in the unified, infinite, eternal, and inscrutable reality of which all phenomena were manifestations. She wrote that 'if Pantheism have any meaning at all it has that implied by a belief in a Reality of which Nature is the substantial manifestation' (263), and that 'Pantheism [...] conceives God to be a Power, Eternal, Infinite, (and because Infinite, necessarily beyond our comprehension) disclosing Itself alike through every form and phenomenon of Nature' (317). Plumptre considered that it made no sense to define reality as material or spiritual, since both material and spiritual phenomena were manifestations of reality. She considered pantheism a higher monism than ordinary materialism or spiritualism. She wrote that 'sooner or later they [materialism and spiritualism] are forced to coalesce, and each must be lost in the other' (300). Plumptre pointed out that in pantheism God was identical with the universe in the sense that God was the reality of the universe, but not in the sense that God was the collection of all phenomena. She wrote that '[i]t [Pantheism] does not identify God with perishable matter; but rather conceives Him to be related to matter somewhat as the soul is to the body' (317). She also implied that when using the word 'God' to address reality, pantheists were emphasising the divine feelings caused by contemplating the unity, infinity, eternality, and incomprehensibility of reality.

According to this very broad definition, she considered that pantheism was pervasive but hidden in history. She wrote that 'there are few men [...] who have not occasionally had their moments of Pantheism: when they have felt that of all religions the religion of Pantheism is the most noble and the most elevated'; however, 'Religious men, for the most part, do not speak of themselves as disciples of Pantheism in the same way that they denominate themselves disciples of Brahminism or Judaism, of Catholicism or Protestantism'.³⁴⁹ Plumptre believed that pantheism was an ancient truth that existed in most if not all great religions. She also strongly believed that those great religions were founded on religious truth, but that they had suffered corruptions as the time

³⁴⁹ Plumptre, *General*, I, p. 10.

went on. The Vedas, the Ionian School, the Eleatics, and Jesus Christ represented great religions or great systems of philosophy; while the Hindu religions, Brahmanism, the scholastic theology, and various Churches of Christianity were their corrupted successors of idol worship and polytheism. Even though the latter religions were corrupted, she believed that pantheism never died and could be always found in their creeds.

Plumptre also portrayed pantheism as a religious position that was most in accordance with science. She claimed that 'Pantheism is, of all the religious solutions, the most in accordance with scientific discoveries' (277). Spencer's influence was apparent as she quoted Spencer constantly. She implied that Spencer was a defender of pantheism. She wrote: 'if I read Mr. Spencer aright, all Matter and all Mind; all Religion and all Science; in a word, the whole of mental, moral, and material phenomena are in his opinion but the various manifestations of the great incomprehensible Unity that runs through all' (268). Also, after a two-page quotation from Spencer's *First Principles*, she wrote: 'We do not think we could quote a more suggestive passage as an argument for the truth of Pantheism than the above passage from the great philosopher of this century' (314–15). She also considered that many agnostics were pantheists. She wrote: 'Agnosticism, [...] even its believers frequently, perhaps almost unconsciously, imply a belief in Pantheism' (262). John Tyndall was also frequently cited by Plumptre when she contradicted pantheism with common-sense materialism. She considered that common-sense materialism confused phenomena with reality. However, if materialism involved an inscrutable existence underlying matter, like Tyndall's scientific materialism, then she would consider this kind of materialism to be pantheism. She wrote that 'Materialism in its transcendental sense may indeed be imagined to be Universal Existence without beginning or end, but then this form of materialism is in reality Pantheism' (276). More of her uses of modern sciences will be introduced in the next three chapters of this dissertation.

Reviews of her work were mixed. An advertisement in the *Academy* quoted several positive reviews. The *Westminster Review* claimed that '[t]he section on Vanini alone deserves to be called exceptionally original'; the *Spectator*, an independent review of politics, literature, theology, and art, considered that '[t]he interest is strong enough to

carry the reader pleasantly enough to the end of the volume'; and the Unitarian Organ, the *Inquirer*, commented that the work was '[i]nteresting and well written'.³⁵⁰ However there were many critical voices. In a review of Plumptre's second volume in the Evangelical Nonconformist journal, the *British Quarterly Review*, the reviewer stated: 'We confess we can suggest no reason why this book should have been published'.³⁵¹ The reviewer pointed out that '[t]he writer of this book has conceived a violent affection for what he calls Pantheism, and he therefore sets to work to write about it' (577-78), and '[h]e often extends the term very much further, so as apparently to include all in whom there has been a spirit of religiosity without any definite dogmatic theory. [...] Pantheism becomes simply the natural religious instinct' (578).³⁵² The reviewer criticised Plumptre's logic claiming that '[v]ery plainly we must not look for logic in this book' (578). In another review of the same journal reviewing Plumptre's other edition of the work, the reviewer also claimed that Plumptre's work was 'philosophically inexact and historically misleading'.³⁵³ The *Dublin University Magazine*, a short-lived literary and philosophic review journal, also pointed out that Plumptre was logically inconsistent or at fault in some places.³⁵⁴ The radical journal, the *Examiner*, stated their stance that '[w]e are very sorry to have to differ from so evidently enthusiastic and devout a Pantheist'.³⁵⁵ Besides criticising Plumptre's philosophical views of pantheism, the reviewer also pointed out that this work looked like a chunk of notes rather than an introductory book to the history of pantheism.

³⁵⁰ Anon, 'Advertisement', *Academy*, 359 (1879), 5.

³⁵¹ Anon, 'General Sketch of the History of pantheism', *British Quarterly Review*, 136 (1878), 577-78 (577).

³⁵² Plumptre's work was published anonymously first, thus the reviewer used 'he' to address her.

³⁵³ Anon, 'Book Review', *British Quarterly Review*, 142 (1880), 554-56.

³⁵⁴ Anon, 'Book Review', *Dublin University Magazine*, November 1878, 639-40.

³⁵⁵ Anon, 'General Sketch of the History of Pantheism', *Examiner*, 3717 (1879), 532-33 (p. 532).

2.9 Conclusion

Pantheism in Victorian Britain appears in the current historiography as a religious position that attracted those who were dissatisfied with Christianity or as a religious position that was inherently atheistic and anti-Christian. From examining the lives and pantheisms of eight advocates of pantheism, we learn that there were certainly some advocates of pantheism who became interested in pantheism because they were disappointed by Christianity, but there were also many advocates of pantheism who did not leave their Christian Churches and did not consider pantheism to be in conflict with their Christian beliefs. Also, panentheism, or higher pantheism, was not the only form of pantheism Christians could adopt in Victorian Britain, and the stricter form of pantheism, that fully identified God and the universe, could also be made suitable for Christians, as the examples of Hunt and Barratt show. The Christian thinkers who opposed the form of pantheism that fully identified God and the world were concerned about the implications of such a theory with moral problems about the potential losses of free will, of moral responsibility, and of the distinction between good and evil. However, these problems could be explained away if humans were seen as manifestations of God, meaning that God's free will was human's free will, and if the notions of good and evil were understood in terms of perfection and imperfection, or benefit and harm.

When comparing these eight figures, we can see that they focused on different aspects of pantheism. On the speculative side, Hunt and Plumptre treated pantheism as a rational and freethinking theology; Martineau and Poynting treated pantheism as the belief that God never left the universe, opposing deism; Hinton and Barratt treated pantheism as a religious position that saw the universe as a united life and consciousness; Bray treated pantheism as a theology for necessitarians; and Picton saw pantheism in the form of Spinozism and Biblical criticism. On the practical side, Hunt and Plumptre did not care to apply their views of pantheism in religious practice; Hinton, Picton, Martineau, Poynting, and Barratt proposed different reform schemes of religious practice; and Bray developed his personal practice of pantheism to inspire others. Their views of pantheism were very different as were their foci. Their different foci reflect their different goals in advocating pantheism. Hunt and Plumptre required

reason to be the highest standard in theology; Martineau and Poynting needed God to govern the world unceasingly; Hinton was enthusiastic in the view that everything was alive; Barratt was in favour of the evolutionary view of consciousness, morality, and religion; Bray sought a religious position that both maintained God and the philosophy of necessity; and Picton sought a religious position that would be forever in accordance with rationalism and science. The differences in their views and purposes demonstrate that they did not share a common scheme. Most of them were rather isolated and independent from each other. Besides Martineau and Poynting, there is yet no evidence to show that they had any personal contact.

The figures discussed in this chapter show that pantheism in Victorian Britain was not a coherent religious position. Advocates of pantheism could oppose each other in the key issues of whether God and the world were fully identical, whether there were supernatural existences or not, whether the world was determined or not, whether common-sense freewill existed or not, whether pantheism could be practiced or not, and whether Christian churches should be maintained or overthrown. They did, however, share some similarities. They believed in the existence of God although they held different views of God, they highly valued reason and science, they were troubled by the unstable state of faith in Victorian Britain, and they tried to find a position where religion and the progress of scientific knowledge would be reconciled while religion did not retreat from the intellectual arena. They were dissatisfied with various traditional Christian theologies as they found that these theologies were not philosophical enough to satisfy their intellectual needs; they were against the deistic solution as deism distanced God from the world to the extent of atheism; they did not accept materialism, since a dead universe was intellectually and emotionally unconvincing for them. Pantheism, the belief of an immanent God and a living universe in whatever sense, was their final answer. They found in pantheism a world where God was forever with nature and humans, natural powers and laws were not blind or mechanical but were intellectual and purposeful, science and religion were naturally reconciled since their objects were the same thing—nature and God were the same thing or largely identical, and religion, like science, no longer needed to be bound by infallible doctrines. Science was always an important element in their writings on pantheism and the next three chapters of this dissertation will focus on their uses of science.

3

Pantheistic Uses of the Science of Force

Physics in the Victorian era was remarkable for achievements of grand unifying theories and quantitative analyses. The theories of the correlation of forces, the conservation of force, and the conservation of energy were heated topics in the mid-Victorian era. Mathematical methods became widely used and fostered new disciplines, such as energy physics, thermodynamics, and electromagnetism. Advocates of pantheism were in favour of unifying theories of force, as these theories opened new avenues for pantheistic interpretations about the relationship between God and the world. In this chapter, I bring in five advocates of pantheism—Martineau, Poynting, Picton, Plumptre, and Bray—and analyse how they made use of scientific practitioners' concepts and theories of force. The popular physical theories among these pantheistic figures were the correlation theories of force of which physicist William Grove and physiologist William Carpenter (1813–1885) were famous advocates, the idea of the conservation of force which was often associated with physicist Michael Faraday, the matter-as-force theories of which Faraday was a famous advocate, and the idea of the unity of mind in nature proposed notably by German idealistic physicist Hans Christian Oersted. Martineau and Poynting made associations between force and will, and they turned unifying theories of force into supports for their view of the existence of a unifying will in nature. Picton and Plumptre also made use of unifying theories of force to support their view that reality was a united being, though different from the two Unitarians, they did not associate force with will. Bray went further than the others. He made the concept of force the fundamental concept of his pantheism, and he identified force with God. In the first part of this chapter, I introduce relevant scientific concepts and theories of force, and in the second part of the chapter, I analyse how each advocate of pantheism made use of these theories. The mathematical developments in physics, such as Newtonian mathematical mechanics and energy physics, were generally

ignored by advocates of pantheism. Thus, they are generally not discussed in this chapter.

3.1 Scientific Theories of Force

3.1.1 The Concept of Force

The concepts of force, the conversion of forces, the correlation of forces, and the conservation of force were core concepts of Victorian physics.³⁵⁶ The meaning of the scientific concept of force was never fully settled among Victorian scientific practitioners.³⁵⁷ There were generally two kinds of major treatments of the concept—a mathematical treatment and an intuitive understanding. In the mathematical context, ‘force’ was mostly treated as a vector representing the direction and quantity of an attraction or a repulsion acting on an object and responsible for its change of motion.³⁵⁸ The force acting upon an object could be measured by the mass of the object times its acceleration. It was usually represented by the formula: $F=ma$. This treatment of force can be traced back to Isaac Newton (1643–1727), whose *Principia* (1687) lay the mathematical foundation of classical physics. The ontological nature of force in the mathematical context was usually left open to debate, and it made no sense to discuss whether this kind of force was conserved or not.³⁵⁹ In the wider context, especially in popular conceptions, ‘force’ was generally treated in a more intuitive way as a kind of entity or abstraction of certain physical phenomena. Different from concrete solids, liquids, and gases that were usually called ‘matter’, forces were more subtle, ethereal,

³⁵⁶ Steven N. Shore has presented a general history of the concept of force in his *Forces in Physics—A Historical Perspective* (Westport: Greenwood, 2008).

³⁵⁷ Yehuda Elkana, *The Discovery of the Conservation of Energy* (London: Hutchinson Educational, 1974), p. 17.

³⁵⁸ For example, see the handbook for students of the London University: John C. Thresh, *Physics, Experimental and Mathematical* (London: W. Stewart, 1884).

³⁵⁹ Thomas L. Hankins, *Science and the Enlightenment* (Cambridge: Cambridge University Press, 1985), pp. 13–16.

and active things. The common forces were heat, light, electricity, magnetism, chemical affinity, gravity, motion, and inertia. Many popular scientific books, such as William Grove's *The Correlation of Physical Forces* (1846) and Michael Faraday's *On the Various Forces of Nature and Their Relations to Each Other* (1860), treated the term 'force' in this way. Contrary to the mathematical conception of force, the intuitive conception of force left much room for ontological speculations. The conversion of forces, the correlation of forces, and the conservation of force were discussed under this conception.

In the religious context, the second treatment of force was far more popular than the first one. While the mathematical conception of force was too abstract to be used in the religious context, the second, the more intuitive conception of force could inspire theological and philosophical discussions about the ontological state of the universe. The treatment of force as entity was also linked to an even broader human intuition. The Victorians could intuitively conceive that nature was composed by causative agents and inert materials.³⁶⁰ This dualistic view could be attributed to human's sense of mind and body.³⁶¹ By analogy, forces, as they were active agents, could be associated with mind, will, soul, and spirit. This possible association gave rise to many religious ideas, and many advocates of pantheism made use of this association as we shall see later.

Although advocates of pantheism were not concerned about the scientific enterprise of energy, they sometimes used the term 'energy' as a synonym of force, indicating some kind of power in nature. Energy physics was a very important development of Victorian physics. The term 'energy' was brought into the scientific context by Scottish engineering physicist William Thomson (1824–1907) around 1850, and the famous mathematical doctrine of the conservation of energy was coined by German physicist

³⁶⁰ Charles Coulston Gillispie, *The Edge of Objectivity* (Princeton: Princeton University Press, 1960), p. 400.

³⁶¹ Moritz Schlick, *Philosophy of Nature*, trans. by A. von Zeppelin (New York: Philosophical Library, 1949). Elkana cited this in Elkana, *Conservation of Energy*, p. 17.

Hermann von Helmholtz (1821–1894) in this period.³⁶² The concepts of energy and force were strictly different in a hard science context. The concept of energy can be traced back to the concept of *vis viva* (living force) of German philosopher Gottfried Wilhelm Leibniz (1646–1716).³⁶³ Leibniz's *vis viva* was defined as mass times squared velocity. The term 'energy' was defined as the capacity to do work. Leibniz's formula of *vis viva* was used as a measurement of a form of energy—kinetic energy ($E = mv^2$). A constant force acting on an object was said to do work on it. The work the force done could be measured by the force times the distance travelled by the object ($W = fs$). It could also be said that the object gained this amount of kinetic energy from the source that exerted the force upon the object. The quantity of the changed kinetic energy of the object could be made equal with the work of the force done on it by adding parameters ($fs = \frac{1}{2}mv_2^2 - \frac{1}{2}mv_1^2$). This equation can be interpreted as that the energy of the source of force is transferred to the object as its kinetic energy. The doctrine of the conservation of energy asserts the possibility of making equations between measurements. Both the concept of energy and the doctrine of the conservation of energy could be treated as purely mathematical without indicating any real entity. Thomson criticised those who tried to treat energy as having an absolute existence.³⁶⁴ However, the concept of energy had a great potential to be treated intuitively as some kind of universal entity. In the Victorian religious context, 'energy' was commonly treated as a synonym of Faraday and Grove's 'force', and 'the conservation of energy' was often treated as a synonym of 'the conservation of force'.

³⁶² See, for example, Crosbie Smith, *The Science of Energy—A Cultural History of Energy Physics in Victorian Britain* (London: The Athlone Press, 1998), pp. 1–2; and P. M. Harman, *Energy, Force and Matter* (Cambridge: Cambridge University Press, 1982), p. 41.

³⁶³ Brandon C. Look, 'Gottfried Wilhelm Leibniz', in *SEP* <<https://plato.stanford.edu/>> [accessed 8 August 2018].

³⁶⁴ Smith, *Science of Energy*, p.289.

3.1.2 The Correlation of Forces and the Conservation of Force

Thomas Kuhn estimates that the ideas of the conversion and the correlation of forces became central to nineteenth-century physics in the 1830s.³⁶⁵ If a force was observed to produce another one, physicists could claim that the former force was 'converted' to the latter force during the process. Some conversions of forces had been known for centuries and some were established by experimental physicists in former decades before the 1830s. It had been known for centuries that magnetism could produce motion when a magnet attracted iron, that motion could produce electricity through friction, that electricity could produce motion when a electrostatic charged object attracted things, that electricity could produce heat when lightening hit something, that electricity could produce light as lightening was visible, that heat could produce motion as steam engine was built upon this effect, that motion could produce heat through friction, and that chemical affinity could produce heat and light as combustion and many other chemical reactions showed. If two forces could mutually produce each other, then physicists could see them as 'correlated'. From these long-known conversions, motion and electricity, and motion and heat were correlates.

The correlation of electricity and chemical affinity was established after the discovery of the Galvanic or Voltaic current by Italian physicists Luigi Aloisio Galvani (1737–1798) and Alessandro Volta (1745–1827) in the 1790s and the discovery of electrolysis by English surgeon Anthony Carlisle (1768–1840) and chemist William Nicholson (1753–1815) in the early 1800s. Galvani and Volta discovered that a circuit of two different metals and a moist conductor could produce an electric current.³⁶⁶ Their discovery showed that chemical affinity could produce electricity. Volta invented the Voltaic pile, or the Voltaic battery. Carlisle and Nicholson soon used the Voltaic battery to decompose water and discovered electrolysis. Their discovery showed that electricity could also produce chemical affinity, and thus closed the circle of electricity and chemical affinity. The correlation of electricity and magnetism was established through

³⁶⁵ Thomas Kuhn, 'Energy Conservation as an Example of Simultaneous Discovery', in *The Essential Tension* (Chicago: The University of Chicago Press, 1977), pp. 66–104 (p. 75).

³⁶⁶ Hankins, *Science and the Enlightenment*, p. 72.

discoveries of electromagnetic phenomena. In 1820, Danish physicist Hans Christian Oersted demonstrated that magnetic effects could be produced by electric current, and he called this effect electromagnetism. In 1831, Michael Faraday discovered electromagnetic induction finding that a change of magnetism could produce an electric current. Their discoveries closed the circle of magnetism and electricity. The correlation of heat and electricity was established after several discoveries of thermoelectric effects. In 1822, Baltic German physicist Thomas Johann Seebeck (1770–1831) demonstrated that a heated bimetallic junction would produce an electric current.³⁶⁷ In 1834, French physicist Jean Charles Athanase Peltier (1785–1845) discovered that heat might be produced or absorbed when a current flowed through a bimetallic junction. Their discoveries showed that heat and electricity could be considered a correlate. In 1831, Macedonio Melloni (1798–1854) discovered radiant heat and considered it similar to light. His discovery implied that the correlation between light and heat could be established by identifying them as one same thing.

Kuhn points out that with this rapid increase in evidence, physicists began to actively apply the ideas of the correlation of forces in their research from 1830.³⁶⁸ Isolated discoveries were gathered together to form an idea of universal convertibility. The idea that all kinds of forces were convertible into each other was speculated by many physicists, notably William Grove and Michael Faraday.

The idea of the conservation of force constitutes one step further to the idea of the correlation of forces. The idea of the correlation of forces affirms that forces can be converted into each other, but it does not imply that forces are not destroyed partially or that new forces are not created during the conversion. The idea of the conservation of force is not inherent to the idea of the correlation of forces. Kuhn has argued that the principle of the equality of cause and effect, that a cause and its effect is equal in some vague sense, was often a belief among Victorian scientific practitioners; and that the idea of universal convertibility leads to the idea of universal conservation when this

³⁶⁷ Kuhn, 'Energy Conservation', p. 73.

³⁶⁸ *Ibid.*, p. 75.

principle is applied.³⁶⁹ Faraday was the name the Victorians usually came up with when mentioning the idea of the conservation of force.

3.1.2.1 William Grove and the Correlation of physical forces

William Grove was among the first physicists who advocated the idea of the universal correlation of forces. He claimed that the first public occasion where he promulgated the idea of the correlation of forces was his inaugural lecture, titled 'On the progress of physical science since the opening of the London Institution', delivered at the London Institution on 19 January 1842.³⁷⁰ Grove developed this idea more fully in a course of lectures at the London Institution in 1843. After that, he related this idea closely with his physical experiments and promoted it actively in many public lectures.³⁷¹ Grove's idea of the correlation of forces culminated in his book *The Correlation of Physical Forces*, published in 1846. It was the first 'popular exposition' of the idea of the correlation of forces in Britain.³⁷² The book was very influential. It went through five more editions published successively in 1850, 1855, 1862, 1867, and 1874. The central argument of this work remained the same throughout these editions, but Grove greatly updated and extended his evidence in every edition.

Grove's main argument was that 'the various affections of matter which constitute the main objects of experimental physics, viz., heat, light, electricity, magnetism, chemical affinity, and motion, are all correlative, or have a reciprocal dependence; [...] that either may produce or be convertible into, any of the others' (15–16). It is noticeable that Grove called physical forces 'affections of matter' in the main body of the book. The word 'affection' in his book meant 'a state, condition, or relation which

³⁶⁹ Ibid., p. 82.

³⁷⁰ W. R. Grove, *The Correlation of Physical Forces*, Fourth Edition (London: Longman, 1862), p. v. The numbers in the brackets after the quotations from Grove in this section are page numbers of this edition of the book.

³⁷¹ Iwan Rhys Morus, 'Grove, Sir William Robert (1811–1896)', in *ODNB* <<https://www.oxforddnb.com/>> [accessed 8 August 2018].

³⁷² Harman, *Energy*, p. 35.

is temporary or not essential to the object; a mode of being',³⁷³ so the phrase 'affections of matter' can be interpreted as states of matter, conditions of matter, or modes of matter. Generally, Grove used 'affections of matter' and 'physical forces' interchangeably. Grove acknowledged that the word 'force' was 'used in very different senses by different authors' (16). In a narrow sense, he defined force as 'that which produces or resists motion' (16), similar to the mathematical conception of force. However, he tended to use the term in a broader sense as 'an abstract or generalised expression' (18) of 'active principle' (16). Affections of matter were certainly active principles since they could produce each other. The difference between his uses of these terms was subtle. When using 'affections of matter', Grove highlighted the observable contents of things, and when using 'forces', Grove emphasised on the 'producer' (19) role of things.

Grove argued for the correlation of any two affections by experiments showing or implying that they directly or indirectly produced each other. If the decrease of an affection usually accompanied the increase of another affection, then the former affection was said to produce or to be converted into the latter. Grove's main objective was to prove that the above-mentioned affections of matter could produce each other. The ways affections produced each other were not limited to direct productions, and how exactly affections produced each other was not a major concern for Grove in this work. For example, in the fourth edition, Grove pointed out that 'Magnetism can [...] through the medium of electricity, produce *heat, light, and chemical affinity. Motion* it can directly produce under the above conditions' (193). Grove admitted that the processes of conversion were largely unknown, moreover, the natures of affections were mostly unknown. But he considered that his theory of the correlation of these six affections was well defended since there was much evidence showing their mutual productions. There were four other affections of matter he discussed shortly—catalysis, gravitation, inertia, and aggregation. He believed that they were correlated with other affections, but he had relatively less evidence to support their correlations.

³⁷³ See the entry for 'affection' in *OED* <<https://www.oed.com/>> [accessed 8 August 2018]. Grove's use of this term was used as an example of this meaning.

Grove's evidence included many classical phenomena and new scientific discoveries. For example, in the fourth edition, he mentioned that '*Light* also is readily produced by motion, either directly, as when accompanying the heat of friction, or mediately, by electricity resulting from motion' (41); that '[i]n the decompositions and compositions which the terminal points proceeding from the conductors of an electrical machine develop when immersed in different chemical media, we get the production of chemical affinity by electricity, of which motion is the initial source' (42); and that '[m]agnetism, as was proved by the important discovery of Faraday, will produce electricity, but with this peculiarity—that in itself it is static' (190). His evidential base grew larger and larger edition after edition as new scientific discoveries emerged year after year. In the final 1874 edition, he attached a 222-page-long list of experimental investigations to substantiate his thesis.

Grove also speculated on the possibility of the universal correlation of all physical phenomena. He considered that 'no physical phenomenon can stand alone: each is inevitably connected with anterior changes, and as inevitably productive of consequential changes, each with the other, and all with time and space. [...] and many existing phenomena hitherto believed distinct will be connected' (271). He extended his concept of physical forces to all physical phenomena. He implied that since forces were active principles that caused, and since all physical phenomena were causes of something, thus all physical phenomena could be considered active principles or forces as well. Grove was cautious about not making the broad claim of the universal correlation of all things, since he did not have enough empirical evidence to support this, and he wanted his thesis to be empirical. He made a careful claim that 'the probability is, that, if not all, the greater number of physical phenomena are correlative' (248). Grove stayed agnostic about the ultimate structure of matter. He wrote that 'probably man will never know the ultimate structure of matter or the minutiae of molecular actions; indeed it is scarcely conceivable that the mind can ever attain to this knowledge' (253).

3.1.2.2 Michael Faraday and the Conservation of Force

Faraday was a Sandemanian. He conceived the universe as a power created by God, and he considered physical forces as active forms of the power.³⁷⁴ All forces were substantially united in Faraday's philosophy, as they were manifestations of a single power. Thus, he maintained a theory of the conservation of force that was in its essence the idea of the conservation of matter: that nothing was created or destroyed during natural processes. As a famous physicist, Faraday advocated his theory of the conservation of force through many of his lectures and papers. For example, Faraday gave a Friday discourse, 'On the Conservation of Force', on 27 February 1857, in which he elaborated his theory. The discourse was printed in periodicals, such as the *Proceedings of the Royal Institution*, the *Philosophical Magazine*, and the *London, Edinburgh and Dublin Philosophical Magazine and Journal of Science*. It thus reached a large audience.

In this discourse, Faraday claimed that 'the progress of the strict science of modern times has tended more and more to produce the conviction that "force can neither be created nor destroyed," and to render daily more manifest the value of the knowledge of that truth in experimental research'.³⁷⁵ He argued that 'we know matter only by its force' (225), so, 'to admit [...] that force may be destructible or can altogether disappear, would be to admit that matter could be uncreated' (225). Faraday implied that if scientific practitioners agreed that matter was indestructible, then they must agree that force was indestructible. He also pointed out 'that no particular idea of force does not include *assent* to' the indestructibility of both matter and force (226). Thus, for the reason that the indestructibility of matter and of force mutually supported each other, he 'urge[d] that the conservation of force ought to be admitted as a physical principle in all our hypotheses, whether partial or general, regarding the actions of matter' (226). He then imagined that if the conservation of force was admitted as a principle of physics,

³⁷⁴ Geoffrey Cantor, *Michael Faraday: Sandemanian and Scientist* (Basingstoke: Macmillan, 1991), p. 176.

³⁷⁵ Michael Faraday, 'On the Conservation of Force', *Philosophical Magazine*, 13 (1857), 225–39 (p. 225).

then ‘no hypothesis should be admitted, nor any assertion of a fact credited, that denies the principle’ (227), and ‘[t]he case of a force simply removed or suspended, without a transferred exertion in some other direction’ should be considered ‘absolutely impossible’ (227).

Faraday reflected that audiences might consider his principle of the conservation of force a metaphysical doctrine rather than a scientific doctrine, and he argued that the principle of the conservation of force was scientific. He compared the idea of the conservation of force with the idea of time. He pointed out that both of them existed everywhere, and that ‘it is [...] not metaphysical to except an effect in *every* case [...] so in regard to the principle of the conservation of force, I do not think that to admit it and its consequences, whatever they may be, is to be metaphysical’ (226–27). Faraday’s words granted scientific prestige to the doctrine of the indestructibility of matter and of force.

3.1.2.3 William Carpenter and the Correlation of Vital, Mental, and Physical Forces

Grove’s theory of the correlation of forces was limited to physical phenomena. After his work on the correlation of physical forces was published, many scientific practitioners in biological disciplines soon saw the possibility of extending Grove’s argument to vital and mental phenomena and to formulate a broader correlation theory. The most famous advocate of such an extension was the physiologist and psychologist William Benjamin Carpenter. Carpenter first pointed out the possibility of extending Grove’s theory in a review of Italian physicist Carlo Matteucci’s *Lectures on the Physical Phenomena of Living Beings* (1848) in the medical periodical, the *British and Foreign Medico-Chirurgical Review*, in January 1848.³⁷⁶ He later gave a systematic expression of his idea in his 1850 paper ‘On the Mutual Relation of the Vital and Physical Forces’ published in the scientific journal, the *Philosophical Transactions*.

Carpenter was a Unitarian. In the preliminary remarks of the paper ‘On the Mutual relation of the Vital and Physical Forces’, Carpenter expressed his belief in the unity of

³⁷⁶ William B. Carpenter, ‘On the Mutual Relations of the Vital and Physical Forces’, *Philosophical Transactions*, 140 (1850), 727–57, (p. 727).

force: 'all *force* which does not emanate from the will of created sentient beings, directly and immediately proceeds from the Will of the Omnipotent and Omnipresent Creator' and these forces were 'so many *modi operandi* [methods of operation] of one and the same agency, the creative and sustaining will of the Deity' (730). He considered that scientific practitioners of his time studied the universe as 'the manifestations of certain forces; and each department of science takes cognizance of one or more of these' (729). He pointed out that the force that physiologists studied was called the vital force. He wrote that modern physiologists recognised that on the one hand 'many of the phenomena of living bodies may be placed in the same category with those of inanimate matter', and on the other hand, 'living bodies present a large class of phenomena which are altogether peculiar to them' (728). He then pointed out that the notion of 'vital agency' or vital force was thus used by physiologists to address the cause of these peculiar vital phenomena in order to separate them from chemical agencies and mechanical agencies. Carpenter noticed that Grove had mentioned that the correlation of physical forces could be applied to the organic world, but the forces Grove applied were physical forces—light, heat, electricity, magnetism, etc.,³⁷⁷ while 'the purely vital operations of growth, development, and reproduction are not even named by him [Grove]; and not the slightest hint is given by him of the existence of any such relation between the Vital and Physical forces' (730). Carpenter intended to establish the correlation of the various vital forces and the correlation of the vital and the physical forces in this paper. He followed Grove's methodology, asserting that if two forces were correlates, then they could mutually produce each other.³⁷⁸ In addition, Carpenter asserted that if the two forces were manifestations of a more fundamental force, then they were also correlates. In Carpenter's religious belief, all forces were obviously correlates, but like Grove, he did not cite his religious belief as a support and he aimed to present a scientific proof of his theory.

³⁷⁷ See W. Carpenter, 'Mutual Relations', p. 730.

³⁷⁸ *Ibid.*, p. 731.

Carpenter claimed that there was only one vital force which manifested in different forms when it ran through different '*material substrat[a]*'.³⁷⁹ He separated different forms of vital force into two categories. The first category was called the 'organizing forces' (747), including the 'forces of growth, multiplication, and transformation' (733). These forces were considered by Carpenter to be operating in both plants and animals. The second category was nerve and muscle forces, or 'Nerve Agency' (736), and they were exclusive to animals.

Carpenter considered that the correlation of nerve forces and physical forces was rather obvious. He used evidence to show the mutual productions between nerve forces and electricity, heat, light, motion, and chemical affinity. For example, in his argument for the correlation between nerve forces and electricity, he first pointed out that 'if an electric current be made to traverse the trunk of a motor nerve for a short distance only, it will produce contraction of the muscles which are supplied from its branches', and that 'in like manner, if the electric current be passed for a short distance only along a sensory nerve, it will excite in the sensorium the peculiar sensations ordinarily produced by impressions conveyed through that nerve' (742). He considered that these two observations showed that 'electricity excites nervous force through the instrumentality of the nervous structure' (744). He then exemplified the phenomenon of 'the Electric Fishes' (743) to show that 'nervous force excites electricity through the instrumentality of the electrical apparatus' (744). As nerve forces and electricity could mutually produce each other, Carpenter concluded that they were correlates. He argued for the correlation of nerve forces and heat, light, motion, and chemical affinity in the same manner. But magnetism was left out since he considered that there was no direct evidence.

Carpenter found it difficult to find evidence to support mutual productions between organizing forces and physical forces. He tried to establish the correlation between them by identifying them. He argued that 'these Organizing forces [...] are so completely dependent upon the continual agency of Heat (and in some cases of Light also), that they may be considered as the manifestations of the action of heat upon organized

³⁷⁹ In this paper, the term was first mentioned in *Ibid.*, p. 731.

fabrics' (747). He gave examples such as the 'rate of growth [of a plant] being in a precise inverse ratio to the amount of [solar light and heat] it receives' (748). He concluded from his many examples that '[h]eat is something more than a *stimulus* capable of arousing a dormant vital force; but, on the other hand, they by no means justify the assumption that heat and the "vital principle" are identical' (750). The correlations between organising forces and light and electricity were argued in the same manner, and magnetism was again left out.

Carpenter also linked his extended theory of the correlation of force to his religious belief. He wrote: 'starting with the abstract notion of Force, as emanating at once from the Divine Will, we might say that this force, operating through inorganic matter, manifests itself in electricity, magnetism, light, heat, chemical affinity, and mechanical motion'; 'when directed through organized structures, it effects the operations of growth, development, chemico-vital transformation, and the like'; and 'through the instrumentality of the structures thus generated nervous agency and muscular power' (752). Through these words Carpenter made the correlation theory consistent with his Unitarian belief.

For Carpenter, mental forces and vital forces were two different categories. Nerve forces were not identified with mind by Carpenter. The paper 'On the Mutual Relations of the Vital and Physical Forces' did not include discussions of whether mental forces and other forces were correlated, but Carpenter speculated on this issue in his *Principle of Human Physiology*. In the 1868 edition of the book, he devoted a section to the discussion of the 'Correlation of Physiological and Psychical action'.³⁸⁰ Carpenter held the dualism between force and matter. He viewed matter as passive substance and force as active agent. He put mind and force in the same category, and he stressed that mind was a form of agency similar to physical forces but was not identical to any of them. He considered that mind and nerve forces were correlates, and that through nerve forces as intermediaries, mind and other forces were also correlates. He wrote that '[t]he power of the Will can develop Nervous activity, and [...] Nerve-force can

³⁸⁰ William B. Carpenter, *Principle of Human Physiology* (London: John Churchill & Son, 1864), pp. 537–609.

develop Mental activity, [thus] there must be a *Correlation* between these two modes of dynamical agency' (542), and that '[t]his idea of Correlation of Forces will be found completely to harmonise with [...] [psychological and physiological] phenomena' (542–43).

3.1.3 Matter-as-Force Theories

There was a branch of thought in physics in the late-eighteenth and the early-nineteenth centuries in which matter was reduced to force or power. This idea was often labelled 'Boscovich's theory' or 'Boscovich's doctrine'. Roger Joseph Boscovich (1711–1787) was an eighteenth-century Ragusan Jesuit mathematician and natural philosopher. He was famous for his theory of point atomism, that nuclei were infinitely small points and the extension, solidity, and impenetrability of matter were properties of centrally-directed forces with point nuclei as centres but not properties of nuclei.³⁸¹ Thus, since the essential properties of matter—solidity and impenetrability—became the properties of force, it can be said that in Boscovich's theory, matter was reduced to force. Boscovich's point atomism was well received and spread widely in Britain, as he presented his theory as a fulfilment of the Newtonian dream of the unification of all forces.³⁸² Peter M. Harman points out that by the early nineteenth century, Boscovich's theory was 'broadly familiar to British natural philosophers' and 'clearly formed part of the implicit intellectual baggage of the period'.³⁸³ There were many developments of Boscovich's theory, such as Joseph Priestley's natural philosophy of power,³⁸⁴ Michael Faraday's matter-as-force theory, and William Thomson's vortex theory of atoms. The

³⁸¹ Salvo D'Agostino, 'Boscovich's Physical Theory of Space and Matter', in *R. J. Boscovich Vita E Attivita Scientifica His Life and Scientific Work*, ed. by Piers Bursill-Hall (Roma: Istituto Della Enciclopedia Italiana, 1993), pp. 41–48 (p. 43).

³⁸² Mordechai Feingold, 'A Jesuit among Protestants: Boscovich in England c. 1745–1820', in *Ibid.*, pp. 511–26 (pp. 513–16).

³⁸³ Peter M. Harman, 'Boscovich and British Natural Philosophy', in *Ibid.*, pp. 561–76 (p. 561).

³⁸⁴ Harman, 'Boscovich', p. 570.

idea of reducing matter to force was also introduced and discussed by famous scientific practitioners such as Thomas Young (1773–1829), Humphry Davy, William John Macquorn Rankine (1820–1872), and James Clerk Maxwell (1831–1879).³⁸⁵

Faraday's matter-as-force theory was a popular one among the Victorians. Faraday first elaborated his matter-as-force theory in a Friday evening discourse at the Royal Institution on 25 January 1844. The *Library Gazette: A Weekly Journal of Literature, Science, and Fine Arts* reported that Faraday's discourse 'attracted a very numerous audience'.³⁸⁶ His discourse was later published in the *Philosophical Magazine* with the title 'A Speculation touching Electric Conduction and Nature of Matter' and reached a larger audience.³⁸⁷ He also reiterated matter-as-force theory later in several papers such as 'Thoughts on Ray-Vibrations' (1846) and 'On the Conservation of force' (1857). As Faraday actively promoted the matter-as-force theory, he was widely recognised as a supporter of this theory, alongside Boscovich and Priestley.

Faraday's matter-as-force theory was proposed as an alternative to the common atomic theory of matter. In 'A Speculation touching Electric Conduction and Nature of Matter', Faraday pointed out that the prevalent theory of the atomic constitution of matter of his day involved the idea that matter was constituted of solid, hard, and impenetrable atoms, centrally directed forces, and empty space between atoms. Forces surrounding atoms gave atoms structural capabilities. The congregations of atoms formed different substances. Faraday was dissatisfied with this atomic theory of matter since he found it difficult to use it to explain the nature of electric conduction and insulation. He pointed out that in this atomic theory, atoms and space were two different entities. Space was understood as the only continuous part of matter since atoms were discrete. If space was the only continuous part of matter then paradoxically, 'space may be proved to be a non-conductor in non-conducting bodies, and a conductor

³⁸⁵ Ibid., pp. 562–570.

³⁸⁶ Anon, 'Royal Institution', *Library Gazette*, 1410 (1844), 60–61 (p. 60).

³⁸⁷ Michael Faraday, 'A Speculation Touching Electric Conduction and Nature of Matter', *Philosophical Magazine*, 24 (1844), 136–43.

in conducting bodies' (138). Faraday considered that this paradox meant that there was something wrong with the common atomic theory.

In order to explain the phenomena of conduction and non-conduction, Faraday abandoned the concept of solid, impenetrable and extended nuclei. The rejection of the concept of nuclei was presented in Boscovich's *Theoria Philosophiae Naturalis*. Faraday could not read Latin, but he may have become acquainted with Boscovich's theory through his former supervisor Humphry Davy or through reading Priestley's works.³⁸⁸ Although his theory differed from Boscovich's in several respects, Faraday called his rejection of nuclei 'Boscovich's theory'.³⁸⁹ 'Atoms', as redefined by Faraday, 'are mere centres of forces or powers, not particles of matter, in which powers themselves reside'.³⁹⁰ They were, according to him, only mathematical points surrounded by forces. There were thus no solid, impenetrable, and discrete particles of matter in Faraday's universe.³⁹¹ 'Matter will be *continuous* throughout'.³⁹² Faraday assumed that the whole universe was a continuous plenum of force. Conducting and non-conducting could be explained as different properties of different bulks of particles of matter, and there was no need to refer to empty space. Thus, the contradiction caused by the common notion of atoms disappeared. Faraday considered that his rejection of nuclei had a great advantage in explaining electrical phenomena and caused little to no trouble in other branches of science, such as chemistry, crystallography, and magnetism.

Matter-as-force theories presented a way to dismiss the dualism of matter and force. Priestley made use of Boscovich's theory to argue against the dualism of matter and

³⁸⁸ Cantor, *Faraday*, p. 184.

³⁸⁹ Harman, 'Boscovich', p. 567.

³⁹⁰ Faraday, 'A Speculation', p. 140.

³⁹¹ *Ibid.*, p. 141.

³⁹² *Ibid.*, p. 142.

spirit and to support his monistic view of the world.³⁹³ Faraday's theory also implied that the universe was a unity rather than was composed of discrete sections.

3.1.4 Hans Christian Oersted and the Unity of Mind in Nature

Hans Christian Oersted (1777–1851) was a German physicist who was greatly influenced by German idealistic philosophy and its pantheistic tendencies. His idea of the unity of mind in nature was known by many Victorians through the translation of his work *Ein Geist in der Natur (The Soul in Nature)*, published in London in 1852.³⁹⁴ Though his idea of the unity of mind in nature was largely speculative, he did try to use science to support this idea.

Oersted presented his idea loosely in this book. In the first chapter titled 'The Spiritual in the Nature', Oersted claimed, through the mouth of a fictional figure Alfred, that all material bodies in nature were 'changeable' and only spiritual existences were 'invariable' (6–7). In his theory, spiritual existences included laws and forces of nature. He claimed that '[t]he laws of nature are founded on Reason', since 'Naturalists have frequently deduced natural laws from a process of reasoning, and afterwards discovered them really existing in nature' (11). Since 'reason is manifested in nature', he claimed that 'the laws of Nature are the thoughts of Nature' and 'these thoughts of Nature are also thoughts of God' (20). He also claimed that all material bodies were combinations of fundamental forces, that 'their difference only depends upon the natural laws by which they are governed' (23). He considered that the effecting laws of nature in a body could be called its 'essential Thought' or its 'living idea'—'the idea realized by the forces of nature' (24), and that 'the essence of a thing is therefore its living Idea' (24). He believed that this conception of the universe implied that there was 'a unity of thought' (22). 'Man', he considered, 'is distinguished above all other

³⁹³ For example, see Joseph Priestley, *Disquisitions Relating to Matter and Spirit* (London: J. Johnson, 1777).

³⁹⁴ Hans Christian Oersted, *Soul in Nature*, trans. by Leonara and Joanna B. Horner (London: Henry G. Bohn, 1852).

creatures on earth by this; viz., that Reason, which all other animals unconsciously obey, in him is awakened into self-consciousness' (27). In this sense, man is 'a free agent' (27).

In the section titled, 'The Essential Unity of Intelligence throughout the Universe', of the fifth chapter, 'All Existence a Dominion of Reason', Oersted argued for 'the universality of the laws of nature' (95). He pointed out that scientific practitioners had proved that the same laws governing the earth governed other planets. Some practitioners extended these laws to the whole universe, but some were sceptical of this universal extension. Oersted intended to prove that 'the laws of nature hold good throughout the universe' (92). He proposed as a rule that if a law of nature was a law of reason, then it was a universal law. He believed that man as 'a product of Nature' (109) could be self-conscious of universal laws.³⁹⁵ By this rule, he turned many scientific theories into universal laws. For example, he argued that 'the first law of motion, namely, that every simple impulse must produce a rectilinear motion, [...] is a necessary law of reason'(93), since it was logically inconceivable that this law of motion was not true in any part of the universe. He also argued in this way for the universality of several laws of light, sound, chemical affinity, electricity, galvanism, magnetism, and heat. As Oersted regarded the laws of nature as the thoughts of nature in the first chapter of his book, it can be inferred that the universality of natural laws was also a proof of the unity of mind in nature.

3.2 Pantheistic Uses of Scientific Theories of Force

We have seen in the previous section that the concept of force had been central to physics since Newton. While 'force' in Newton's physics was defined mathematically with few metaphysical implications, the term was used in an intuitive way to denote various forms of power or subtle matter by Victorian scientific practitioners such as Grove, Faraday, and Carpenter. These scientific practitioners formulated unifying theories of force, and Faraday even advocated a unifying theory of matter and force. There were also German pantheistic physicists, such as Oersted, giving pantheistic

³⁹⁵ Ibid., p. 94.

interpretations of physical theories. Victorian advocates of pantheism made use of these theories to support their pantheistic doctrines, as we shall see in this section.

3.2.1 James Martineau and the Correlation of Forces and the Unity of Mind

Martineau's philosophical theism comprised a dualistic theory of passive matter and active causes. He considered that God's will was the cause of nature, and that the forces studied by physicists were manifestations of God's will. God was thus to a very large extent immanent in nature, and forces were manifestations of God. Martineau's view of force was considered pantheistic by the poet and essayist Roden Noel (1834–1894). Noel reflected: 'I do not quite see how theologians escape Pantheism after all, if they maintain with Mr. Martineau [...] that *Force is Will*', because if 'Force is Will, with the element of Thought left out by us, [...] Matter or Force then must be God'.³⁹⁶ As Martineau wished to reconcile science and religion, he drew on scientific practitioners' theories of force and made his own interpretations to support his pantheistic view of force.

In the essay 'Nature and God' (c. 1860), Martineau made use of Grove's theory of the correlation of physical forces and William Carpenter's extension of this theory into vital and mental phenomena. Martineau was criticising the recent popular view that 'the whole scientific and the whole religious mode of approaching and viewing the external world' were in conflict.³⁹⁷ He argued that religion and science approached the external world with different faculties of human consciousness, and therefore their interpretations of external phenomena were necessarily different, but this difference did not imply that one of them was inferior to the other. He claimed that religion proceeds 'on the data of our Voluntary and Moral faculties, carries a supernatural interpretation through the universe, and sees in nature the expression of affections and will like our own', while science proceeds 'on the data of our Perceptive and

³⁹⁶ Roden Noel, 'On Causality in Will and Motion', *Contemporary Review*, 23 (1873), 380–406 (p.402).

³⁹⁷ Martineau, 'Nature and God', p. 147.

Generalizing faculties, discovers uniformities of phenomena, and accepts the conception of necessary law not only as the key to Nature, but as exhaustive and ultimate' (150–51). Martineau considered that religion and science were not in conflict as long as they did not trespass on the other's sphere.³⁹⁸ When Martineau was trying to find an 'intermediate conception' to aid the mutual understanding between science and religion, he found 'the idea of *Force*' which he considered 'more than physical and less than theological' (154). From books he listed in the beginning of his essay, it can be inferred that Martineau read Grove's second edition of *The Correlation of Physical Forces* (1850), Carpenter's essay 'On the mutual Relations of the Vital and Physical Forces' (1850), and the fifth edition of Carpenter's *Principles of Human Physiology* (1855).

Martineau defined 'force' by quoting Grove's definition, claiming that 'the word denotes "that active principle inseparable from matter which induces its various changes"' (154).³⁹⁹ He made two inferences from Grove's and Carpenter's theories on force. One was that 'force' was 'a physical postulate indispensable to the interpretation of nature, yet not physically known' (155); and the other was that 'the plurality of forces is an illusion' and 'in reality, and behind the variegated veil of heterogeneous phenomena, there is but one force, the solitary fountain of the whole infinitude of change' (157). Martineau argued that since the physical composition of force was not known, it was a metaphysical construction rather than an absolute existence. He speculated that the idea of force was invented to assist us in our understanding of phenomena, and that behind this concept was the 'primitive intuition' (158) of will in nature. Martineau quoted Carpenter's view that 'our consciousness of force is really as direct as is that of our own mental states' and 'force must be regarded as the direct expression or manifestation of that Mental state which we call Will' (158) as a support for his theory.⁴⁰⁰ In addition, Martineau argued that physicists' experimental confirmations of the correlation of forces strengthened his belief of the unity of will in

³⁹⁸ Ibid., p. 151.

³⁹⁹ Quoted from the second edition of Grove's *Correlation of Physical Forces*.

⁴⁰⁰ Quoted from W. Carpenter, *Physiology*, p. 585.

nature since the unity of forces implied the unity of causes, and as he identified cause and will, the unity of causes was the unity of will. For Martineau, the unity of will in nature meant that there was a singular person, a God, whose mind possessed the united will. He thus claimed that the conclusion could be made from contemporary physical theory of force that 'all Force is of one type; and that type is Mind' (159). He implied that the correlation theories of forces supported his higher pantheistic view that God's mind was the direct cause of all phenomena.

Martineau was aware of Boscovich's theory when he wrote 'Nature and God'. He noticed that Thomas Elford Poynting's solution for the disunity between matter and force was like that of Boscovich's, though he considered this solution weak and did not say much about it.⁴⁰¹ However, when he wrote *A Study of Religion* (1888) many years later, he seemed to incline towards Boscovich's monism of matter and force.⁴⁰²

When denying the existence of multiple self-existing beings, Martineau usually made it clear that he denied only that there were plural self-existing causes. In other words, he held that God, a living will and cause of the phenomena of the world, was the only cause of the world. In order not to fully identify God with the universe, he also needed something non-causal and co-existed with God. He had considered that there was a primitive matter being a non-causal self-existing being different from God, and that God exerted his will upon this matter. Matter-as-force theory reduced matter to force, and in Martineau's theology, force was not a self-existing thing but a manifestation of God's will, thus, it can be inferred that if Martineau incorporated matter-as-force theory into his theology, then his primitive matter would no longer be a self-existing thing but an aspect of God. However, in *A Study of Religion*, Martineau welcomed such a speculation. He considered that the solidity of matter could be conceived as a property of force similarly to what 'Boscovich and Faraday' presented in their theories,⁴⁰³ and that if matter was dissolved in this way, then he could take space as a self-existing being separated from God and attribute everything to God except space. Space in his

⁴⁰¹ Martineau, 'Nature and God', p. 166.

⁴⁰² Confirmed in J. Carpenter, *Martineau*, p. 577.

⁴⁰³ James Martineau, *A Study of Religion*, 2 vols (Oxford: Clarendon Press, 1888), I, p. 406.

definition was ‘the eternal condition of a universe’ (407). He saw that ‘[t]he ontological simplicity of this hypothesis, which recommended it to Boscovich and Faraday, gives it undoubtedly a great advantage’ (406). Martineau also argued that the matter-as-force idea coupled with his view of force could easily be made consistent with ‘the popular doctrine of *creation out of nothing*’ (407). He reasoned that space was usually conceived by ordinary people as nothing, and if there were only God and space, then everything would seem to appear from nothingness. Martineau evaluated his speculation that ‘its metaphysical neatness [...] strongly recommend it to acceptance’ (408).

Oersted had talked about the unity of mind in nature, which was similar to Martineau’s view of the unity of will in nature. Martineau had read Oersted’s book *The Soul in Nature*. He reviewed the English translation of *The Soul in Nature* when it was published in 1852, and he made some connections to his theology. Martineau interpreted Oersted as saying ‘that throughout all worlds are beings fundamentally similar, in their rational faculties, both to each other and to the eternal living reason of God’.⁴⁰⁴ He commented that this idea ‘has received, for the first time we suppose, a careful and systematic treatment on scientific grounds’.⁴⁰⁵ He introduced Oersted’s work as the first systematic exposition of God’s immanent and unifying will by a prominent scientific practitioner. He welcomed Oersted’s speculation on the universality of laws, and on the idea that all of them were the thought of God.⁴⁰⁶ However, he was dissatisfied with Oersted’s view of freewill. He considered that Oersted’s psychology was ‘not founded on reflective self-knowledge, but a mere application of physical doctrine to the mind’, and that it resulted in the inference that will was determined by physical doctrines and consequently was not free.⁴⁰⁷

So far, we have seen that Martineau drew on theories of the scientific practitioners Grove, Carpenter, and Oersted to support his pantheistic view that God’s will was the

⁴⁰⁴ James Martineau, ‘Hans Christian Oersted’, in *Essays, Reviews, and Addresses*, 3 vols (London: Longman, Green and Co., 1891), III, pp. 83–116 (p. 87).

⁴⁰⁵ *Ibid.*, p. 87.

⁴⁰⁶ *Ibid.*, pp. 95–96.

⁴⁰⁷ *Ibid.*, p. 98.

direct and only cause of all natural phenomena, and that he also considered Faraday and Boscovich's matter-as-force theories helpful. Martineau believed that religion was a legitimate way of producing knowledge about nature. He also used his synthesis of his philosophical theism and the science of force to support his belief that nature would be better understood if it was studied from both the religious side and the scientific side. As Ralph Waller points out, this synthesis was used by Martineau during his debate with John Tyndall, against Tyndall's claims that the assumption of God was not needed in explaining natural processes, and that religion should relinquish the intellectual fields concerning the physical universe.⁴⁰⁸ The science of force was used by Martineau in support of his philosophical theism, and also as a weapon, when adjusted by his theology, against materialism and atheism.

3.2.2 Thomas Elford Poynting and the Ideas of Matter-as-Force and Force-as-Mind

Poynting was a student of Martineau when he studied for the Unitarian ministry at Manchester College, Manchester. Influenced by Martineau, he also treated force as a manifestation of God's mind. However, he differed from Martineau in his view of matter. As early as 1860, Poynting had already adopted a form of monism in which he reduced matter to force. (Martineau at the time held a dualism of matter and force, and he criticised Poynting's monism in his essay 'Nature and God'.) The idea of matter as force and the idea of force as mind were the two pillars of Poynting's religious philosophy. By using these two ideas, he formulated a united universe and considered it God. When he made his arguments, he cited many scientific practitioners' theories of force and interpreted them in his own way. His use of the science of force is evident in his essay 'Materialism, an Unscientific Habit of Thought' (1874).

Poynting's main argument in this essay was that materialistic atheism was 'not the result of science', and that physical philosophers brought us 'to the conclusion, not that

⁴⁰⁸ Martineau and Tyndall's debates are analysed in Waller, doctoral dissertation, pp. 86–104.

matter excludes spirit, but rather that it may fitly be regarded as spirit'.⁴⁰⁹ He claimed that 'the [physicists'] final analysis of matter resolves it into force—force, subtle, mysterious in itself, invisible, as the gravitation which surrounds and holds us' (228), and that this view of matter 'brings us to the conclusion that this force, like the force in our being, is pervaded and directed by an all-controlling Mind' (228). He implied that the existence of a universal mind in nature was implied by the current physical theories of matter and force. He thus claimed that materialistic atheism was 'an unscientific habit of thought' (228) and was not supported by current science. This paper can be separated into two parts. In the first part, Poynting presented his matter-as-force theory, and in the second part, he presented his force-as-mind theory and formulated his idea of universal unity.

In the first part of this paper, Poynting proposed a matter-as-force theory in which gravitation was the ultimate force. He claimed that:

Each ultimate molecule of matter is nothing but a point at which meet opposite lines of gravitation force that converge upon it from all infinity. The force, by the very laws of convergence, increases in intensity—through concentration—inversely as the square of the distance. [...] This attractive force, so rapidly and enormously increasing the nearer we get to the centre, is surely sufficient to explain all the phenomena of cohesion. The incalculable resistance which any two molecules must encounter when they strike against each other, centre to centre, is also sufficient to account for all phenomena of repulsion. (230)

Not only did he reduce atoms to mathematical points, but he also reduced all types of force to gravitational force or attractive force. He drew on the scientific authority of Newton, Boscovich, Priestley, and Faraday to support his theory. He attributed the origin of his notion of matter to Boscovich's point atomism. He wrote that '[t]his conception of matter is only a modification of a view first propounded in his "Theoria

⁴⁰⁹ Poynting, 'Materialism', p. 227.

Philosophiae Naturalis” by Father Boscovich’ (230–31). Poynting was a teacher of Latin, so he was able to read Boscovich’s *Theoria Philosophiae Naturalis*. He quoted Boscovich’s words in Latin in footnotes.⁴¹⁰ He wrote that ‘I cannot help believing that Boscovich’s thought, carried out with necessary modifications, is destined some day to revolutionize many portions of material science, and still more to revolutionize the whole form of theology’ (232).

Priestley was the next figure Poynting talked about. He portrayed Priestley as the philosopher who spread Boscovich’s atomism in England and who combined Boscovich’s atomism with theology. He wrote that ‘[t]he fundamental principle of Boscovich was set forth in English by Dr. Priestley in his “Disquisitions relating to Matter and Spirit,” and his “History of Discoveries relating to Vision,” &c. In the “Disquisitions,” he thus expresses it: “Suppose that the Divine Being, when he created matter, only fixed certain centres of various attractions and repulsions extending indefinitely in all directions. [...] All effects [...] may be resolved into attraction or repulsion.” [...] “On this hypothesis, everything is the Divine power.”’ (232). ‘Thus,’ Poynting claimed, ‘Priestley in effect said, “All matter is spirit”’ (233).

Poynting then talked about Faraday. He treated Faraday as a contemporary advocate of Boscovich’s atomism. He considered that Faraday’s Friday lecture on matter-as-force theory ‘set forth Boscovich’s fundamental principle’ (233). Faraday’s refutation of nuclei was cited by Poynting. He also claimed that the reduction of all types of force to gravitational force was expressed in Faraday’s lecture. The following words from Faraday were quoted by Poynting as a proof: “The view now stated of the constitution of matter would seem to involve necessarily the conclusion that matter” (i.e. the force which is matter) “fills all space, at least all space to which gravitation extends, including the sun and the solar system: for gravitation is a property of matter dependent on a certain force, and it is this force that constitutes the matter”’ (234). Faraday did not claim that gravitational force was the fundamental force of which all other types of force were forms, and the force that constituted matter in this quotation was not a specified force, though Poynting interpreted this force as gravitational force. Poynting

⁴¹⁰ Ibid., p. 231.

enthusiastically claimed that ‘This is the exact doctrine that I wish to demonstrate more fully, viz. that IT IS THE FORCE OF GRAVITATION, the force, i.e., on which gravitation depends—THAT CONSTITUTES MATTER’ (234).

Poynting argued that he could explain all phenomena by attractive force only without solid nuclei or repulsive force. The fundamental existences of the physical universe in his theory were attractive forces. Atoms were the meeting points of attractive forces. The strength of attraction was proportional to the density of attractive force. Poynting considered that when an attractive force (which can be imagined as a vector) crossed the centre of an atom, it became a repulsive force for that atom, therefore, he considered that there was no need to assume repulsive force as a fundamental force. He also considered that the density of repulsive force in the centres of atoms was infinitely high, thus atoms would not penetrate each other. The impenetrability and solidity of nuclei were thus reduced by Poynting to effects of force. He used everyday examples of gravitational attraction as well as views from Newton and physicist Balfour Stewart (1828–1887) to support his claim that attractive forces were everywhere. He wrote that ‘Newton tells us [in *Principia*] that there is a gravity towards all bodies’ (237). He quoted from Stewart’s textbook *Conservation of Energy* (1872): “‘Every particle of the universe attracts every other particle with a force depending jointly upon the mass” (say rather the amount of force) “of the attracting and of the attracted particle, and varying inversely as the square of the distance between the two”” (238).⁴¹¹

Poynting made an even stronger claim that ‘the common notion of matter and molecules violates at every point [of] Newton’s great law’, that ‘Nature does nothing in vain, and it is in vain to do by more what might be done by fewer causes’ (242–43). Poynting argued that if attractive forces could explain everything, to postulate the notion of solid nuclei and the notion of repulsive force was to assume ‘Nature doing by *more* what might be done by *one*’ (243). This, he considered, violated Newton’s principle of simplicity.

⁴¹¹ See Balfour Stewart, *The Conservation of Energy: Being an Elementary Treatise on Energy and Its Laws*, Second Edition (London: Henry S. King & Co., 1874), p. 49.

After reducing everything in nature, except space, to attractive force, Poynting proceeded to argue that positing an intelligent being was necessary in order to explain the operation of the all-pervading attractive force. This argument was developed in the second part of his essay in which he brought in his theology. He drew on the scientific authority of Clerk Maxwell, Thomas Huxley, and John Tyndall to support this view. He cited Maxwell and wrote that ‘as Prof. Clerk-Maxwell observes, [...] [i]t looks as if the all-pervading force were intelligent or directed by intelligence’ (244). He cited Huxley and Tyndall and wrote: ‘I accept the doctrine of Mr. Huxley, that “all vital action” is probably “the result of the molecular forces of the protoplasm which displays it.” I agree with Dr. Tyndall’s statement, “that the human mind itself—motion, intellect, will, and all their phenomena—were once latent” in atoms of the primeval nebula. [...] That in the force which gathers round each force-centre and makes the molecule, *there is not only force, there is life*’ (245). Poynting then concluded: ‘[a]s the force comes out of life—is a manifestation of life, the life of God—is it not likely that He who makes in every molecule of force a provision of force for the future evolutions of force, would make there also a provision of life for the future evolutions of life?’ (245).

Huxley’s and Tyndall’s words were usually used to support materialism and atheism, since they seemed to deprive God of creative power and give it to matter, as if God was no longer needed. Poynting was against this interpretation of science. His solution was to reduce everything to active force so that there was nothing inactive or dead in the universe, to see activeness as a sign of life so that the whole universe was alive, and to treat the living universe as God himself rather than as something self-existing without God. In this way, he could appropriate the concept of living matter used by materialistic scientific practitioners to support his view that the universe was a life, the life of God. He dismissed the view that materialistic atheism was the necessary result of science and showed that pantheism could be inferred from science.

Poynting also argued that the force-as-mind idea was scientific. He quoted the explanation of the intuition of the concept of force from astronomer John Herschel (1792–1871): “It [the concept of force] is,” said Sir John Herschel, “our own immediate consciousness of effort when we exert force to put matter in motion, or to oppose and neutralize force, which gives us this internal conviction of power and causation, so far

as it refers to the material world” (246).⁴¹² Poynting reasoned that ‘[w]e are conscious of force in our own being, which we will call mind-force, meaning simply force wielded, directed by mind. In the universe we see force too—the world-force. It is like the mind-force in producing effects, in overcoming or resisting opposing force’ (246). He implied that, by analogy, if the force of our body was mind or was directed by mind, then the force of the world was mind or was directed by mind as well. He considered that ‘[t]he great world-force looks exactly like a great mind-force. It indicates a Mind as living in it, wielding it’ (246). Poynting saw his argument as ‘a perfectly scientific argument’ (246). He claimed that it was scientific to make inferences about the properties of large scale things from observations of small scale things, like Newton concluded the universality of gravitation from his observation of a few objects on earth, like Darwin established the theory of evolution from his observations on modified plants and animals on a small scale, and like Gustav Kirchoff (1824–1887) and Robert Bunsen (1811–1899) explained spectroscopic phenomena in the sun from their observations of little flames in their laboratory.⁴¹³ So he claimed that his inference of the existence of a world-mind from the observation of the human mind was scientific.

We have seen that Poynting drew on many scientific practitioners—Newton, Boscovich, Priestley, Faraday, Huxley, Tyndall, Darwin, Maxwell, John Herschel, Balfour Stewart, Gustav Kirchoff, and Robert Bunsen—to support his monistic vision of matter and force, his idea of a universal mind, and ultimately his pantheistic view that the universe was an aspect of God. He was deeply troubled by the pervasive view that science necessarily led to materialism or atheism. He managed to counter it through a synthesis of pantheism and the science of force.

⁴¹² See John Herschel, *Outlines of Astronomy*, Fourth Edition (Philadelphia: Blanchard & Lea, 1857), p. 233.

⁴¹³ Poynting, ‘Materialism’, p. 247.

3.2.3 Constance Plumptre and James Allanson Picton and Conservation Theories

Picton and Plumptre defined pantheism in a similar way. They saw pantheism as a belief in a unified, infinite, eternal, and inscrutable reality of which all phenomena were manifestations. The theories of the correlation of forces and the conservation of force were theories that united a wide range of physical phenomena. They used these unifying theories to support the existence of a united reality.

Plumptre in her *General Sketch of the History of Pantheism* (1878–79) mentioned several times the theory of the correlation of forces, the theory of the conservation of force, and the theory of the conservation of energy. She did not rigorously separate them but rather she treated them as the same theory and used them interchangeably. Energy was treated by her as a synonym of force rather than as a mathematical quantity. For example, she wrote that '[t]he doctrine of the Conservation of Energy (for Force is as indestructible as Matter) asserts that no power can make its appearance in nature without an equivalent expenditure of some other power'.⁴¹⁴ Plumptre did not learn these theories from *Grove's Correlation of Physical Forces*, since she was uncertain about the publication date of Grove's work. She wrote that this theory was written by 'Mr. Justice Grove [...] some fifteen or twenty years ago',⁴¹⁵ while Grove's work was firstly published thirty-two years ago, and the last edition was published four years ago at the time when Plumptre's work was published. This implies that Plumptre did not read Grove's work. Nor did she mention Faraday. The source in which she learned these theories was John Stuart Mill's *A System of Logic, Ratiocinative and Inductive*.

John Stuart Mill was a leading empiricist philosopher in nineteenth-century Britain. His work *A System of Logic* was first published in 1843 and went through nine editions before Plumptre's work was published. His work was very influential as well as

⁴¹⁴ Plumptre, *General*, II, p. 268.

⁴¹⁵ Plumptre, *General*, I, p. 204.

controversial.⁴¹⁶ Plumptre quoted Mill's interpretation of the conservation theories from the ninth edition of this work which was published in 1875.⁴¹⁷ In her quotation, Mill claimed that 'the sciences of physical nature have made a great advance in generalisation through the doctrine known as the Conservation or Persistence of Force'.⁴¹⁸ He pointed out that 'the establishment of this comprehensive law has led to a change in the language in [...] the scientific world', and that before the establishment of this laws, the unlikeness of phenomena 'had caused them [these phenomena] to be referred to so many distinct forces. Now that they are known to be convertible into one another without loss, they are spoken of as all of them results of one and the same force, manifesting itself in different modes'.⁴¹⁹ Mill also made a rather personal interpretation, claiming that 'the Conservation of Force is really the Conservation of Motion, that in various interchanges between the forms of force, it is always motion that is transformed into motion'.⁴²⁰ He supported his claim by citing some examples of the correlations between heat, light, and motion.

Plumptre wrote that 'Motion [...] is the first principle' of the physical universe in Mill's theory, and that '[t]he whole phenomena of the entire universe [...] owe their origin to it [Motion]; for heat, light, etc., are but forms of motion' (211). She considered that Mill's concept of motion was in the same category as ancient Greek philosophers' first principles, such as Thales's water, Heraclitus's fire, Xenophanes's God, Parmenides's Being, Pythagoras's The One, and Anaxagoras's Intelligence.⁴²¹ She saw that Mill's theory proved that '[t]he Eleatics [...] were right in saying, All comes from One. All does come from One, and the outward manifestation that One presents is Motion' (211).

⁴¹⁶ Jose Harris, 'Mill, John Stuart (1806–1873)', in *ODNB* <<https://www.oxforddnb.com/>> [accessed 8 August 2018].

⁴¹⁷ Plumptre, *General*, I, p. 204; John Stuart Mill, *A System of Logic*, Ninth edition, 2 vols (London: George Routledge & Sons Ltd, 1875).

⁴¹⁸ Plumptre, *General*, I, p. 204, J. Mill, *A System of Logic*, I, p. 402.

⁴¹⁹ Plumptre, *General*, I, p. 205.

⁴²⁰ *Ibid.*, p. 207.

⁴²¹ *Ibid.*, pp. 211–12.

These ancient philosophers were introduced by Plumptre as pantheists, and she introduced Mill's theories in her chapter on Greek pantheists. She implied that current physical philosophers proved the ancient pantheistic doctrine that the world was originated from a single principle, and that physical philosophers' concept of force in the doctrine of the conservation of force was identical with pantheists' first principles. Plumptre claimed that 'Pantheism [...] would gladly welcome this new theory of the Correlation of Forces as a proof of the correctness of her own theory' (212). She also claimed that if a pantheist followed Mill's phraseology, then 'God would not merely be conceived to be the Cause of Motion, but [...] would be necessarily identical with Motion' (212).

Besides using the doctrine of the conservation of force to support the pantheistic doctrine of a united reality, Plumptre also used this doctrine to support her anti-creationism, that there was no creation from nothing. She wrote that 'Light runs into Heat, Heat into Electricity, Electricity into Magnetism, Magnetism into Mechanical Force; and, Protean-like, Mechanical Force changes back into Light and Heat. There is conversion, but no creation. [...] One power changes into another; transformation and metamorphosis seem to be the order of the heavens as much as of earth'.⁴²² She claimed that 'the acceptance of this doctrine [of the conservation of force] deals the final death-blow to the ancient notion of Creation, as ordinarily understood'.⁴²³ She thus implied that physicists' doctrine of the conservation of force supported the pantheistic doctrine of transformation while it falsified creationism.

Picton's use of the science of force was less obvious than Plumptre's, but it is worth a mention. He made several claims that the modern physical concept of energy, in the sense of force, and its conservation were consistent with pantheism. In his *Mystery of Matter*, he interpreted 'the "correlation of forces"' as meaning that '[t]he eternity and the changeless sufficiency of the one inscrutable Energy, which manifests itself in ten

⁴²² Plumptre, *General*, II, pp.286–87.

⁴²³ *Ibid.*, p. 282.

thousand forms'.⁴²⁴ In his later book *Pantheism: its story and significance*, Picton wrote: 'the matter or energy of which we think we consist, was in existence, every atom of it, and every element of force, before we were born, and will survive our apparent death. And the same thing, at least on the Pantheistic view, is true of every other mode of apparently separate or finite existence'.⁴²⁵

From Plumptre and Picton, we see that the subtle difference between the concepts of force and energy, or the difference between the theory of the correlation of forces, the theory of the conservation of force, and the theory of the conservation of energy might not have mattered to religious people in Victorian Britain. These two advocates of pantheism mostly borrowed from these physical theories the idea that there existed something mysterious and universal that united all things in the world.

3.2.4 Charles Bray and His Theory of Force-as-God

While Martineau, Poynting, Picton, and Plumptre used the science of force to support some of their views, Bray used the concept of force as the very foundation of his pantheism. He treated force as God, while others did not. Bray claimed that there was only one reality of which all phenomena were manifestations. He identified this reality with the 'Substance' of Spinoza, the 'Being' of Hegel, the 'Noumenon' of Kant, and the 'Force' of physical philosophers.⁴²⁶ These terms were synonymous for him, and he tended to use 'Force' rather than the other terms since he intended to build his theory upon contemporary physics. The term 'force' in Bray's definition denoted active principle, cause of action, or source of action.⁴²⁷ He knew that 'force' was used by many

⁴²⁴ Picton, *Mystery*, p. 156.

⁴²⁵ James Allanson Picton, *Pantheism: Its Story and Significance* (London: A. Constable & Co., 1905), p. 12.

⁴²⁶ Charles Bray, 'Arguments', in *On Force, Its Mental and Moral Correlates* (London: Longmans, Green, Reader, and Dyer, 1866).

⁴²⁷ Bray, *Phases*, pp. 225 and 231. He wrote: 'Force is everywhere, and the active cause of everything'.

physicists as an abstraction of things, but he was more willingly to treat it as a fundamental entity. He claimed that 'Modern discovery' had recognised 'force as an entity' and recognised the 'indestructibility and persistence' of force.⁴²⁸ He implied that his treatment of force as a fundamental entity was supported by modern physicists' doctrine of the conservation of force. The fundamental reality was considered a great 'Force' by Bray, and phenomena were called by him 'forces', 'forms of Force', or 'modes of Force'.

Bray adopted the idea of matter as force to reduce matter to force so that force could be the only entity of the universe. He proposed to abandon the concept of atom, and he claimed that this abandonment was supported by prominent physical philosophers. He wrote that the 'highest physical philosophers' of his time had 'abolished the atom and put a centre of force in its place', and 'what we call matter is now said to be force'.⁴²⁹ Bray often cited Thomas Huxley as a representative of the 'highest physical philosophers'. When arguing that matter should be viewed as force, he often quoted Huxley's words that '[e]very form is force visible; a form of rest is a balance of forces; a form undergoing change is the predominance of one over others'.⁴³⁰ The source of this quotation is unclear. The earliest document I find in which Huxley spoke of something similar was Huxley's speech in the 1866 meeting of the British Association for the Advancement of Science. He said that 'every form is force visible'.⁴³¹ Huxley was discussing biology especially morphology and physiology, so the 'form' he was referring to was likely a form of life rather than any form of existence. Since Bray's *On Force* was also published in 1866, it is uncertain whether Bray knew this speech before he finished the book. Nevertheless, Bray interpreted Huxley's view as claiming that all phenomena

⁴²⁸ Ibid., p. 231.

⁴²⁹ Ibid., p. 248.

⁴³⁰ Bray, 'Argument'; Charles Bray, 'Physics and Metaphysics', *Anthropological Review*, 7 (1869), 392-413 (p. 399); Bray, *Phases*, p. 254.

⁴³¹ Leonard Huxley, *Life and Letters of Thomas Huxley*, 3 vols (Cambridge: Cambridge University Press, 2012), I, P. 400.

were forces. In Bray's paper 'Physics and Metaphysics', he reasoned with another quotation from Huxley. He wrote: 'Science now reduces all things to "the attraction, repulsion, motions, and co-ordination of the ultimate particles of matter;" but these ultimate particles of matter—molecules and atoms, are unknown quantities [...] they are creatures of the imagination, and as pure assumption as the spirit of the spiritualists'.⁴³² He implied that because atoms were hypothetical and because only forces were responsible for our sensations, thus there was no need to assume matter, and therefore, it was intelligible to assume force as the only fundamental existence of the world.

Bray formulated a systematic view of force. In his view, forces could be classified into two categories: 'concentrated'⁴³³ forces and 'operant' forces.⁴³⁴ The forces that composed particles and massive structures, or matter in an ordinary sense, were concentrated forces; and the forces that ran through these structures were operant forces. The properties of matter were determined by both kinds of forces. Old things ceased to exist, and new things appeared, when the Force passed from old forms into new forms. Cause and Effect was this sequence of the Force. Everything died eventually, but the Force was indestructible and persistent. Bray also claimed that the past was 'irrevocable', and he pointed out that he borrowed this term from Grove.⁴³⁵

Mind was regarded by Bray as a form of force. As an empiricist and amateur phrenologist, he held that 'our consciousness is all that is *known* to us, and all else is only more or less probable interference',⁴³⁶ and that '[c]onsciousness is supposed to be a general term denoting states of mind, but mind has no existence in itself, but consists of these "states", or stream, or succession of thoughts and feelings [i.e. propensity,

⁴³² Bray, 'Physics and Metaphysics', p. 399. It is unclear again where this quotation from Huxley comes from. In John Masson, *Lucretius: Epicurean and Poet* (London: John Murray, 1907), p. 82, it is confirmed that this sentence was said by Huxley.

⁴³³ Bray, 'Arguments'.

⁴³⁴ Bray, *Phases*, p. 229.

⁴³⁵ Bray, 'Arguments'.

⁴³⁶ *Ibid.*

sentiment, sensation, ideas, perception, conception, memory, imagination, and judgement]'.⁴³⁷ These states of mind, or, in other words, mental phenomena, were considered mental forces by Bray. Bray claimed that mental forces and physical forces were correlated. In his autobiography, he pointed out that he came up with the idea of the correlation of mental and physical forces when he read Grove's *Correlation of Physical Forces*. He wrote that 'I was indebted [...] to Mr. G. Grove', and that 'I could not see why correlation could stop at the physical forces, and why it should not be extended to mental force'.⁴³⁸ William Carpenter's influence on Bray seems to have been indirect. Bray mentioned in his autobiography that 'he was indebted [...] much to James Hinton in his "Physiological Riddles," published in the *Cornhill Magazine*'.⁴³⁹ In the series of papers 'Physiological Riddles', Hinton discussed the union of consciousness and living body. To support his views, Hinton incorporated William Carpenter's doctrine of the correlation of the physical and vital forces and Thomas Carlyle's view that life was a mode of operation of physical forces—magnetism, electricity, chemical affinity, etc.⁴⁴⁰ Bray did not discuss what he learnt from Hinton's paper, though Hinton's papers seems to strengthen Bray's view that vital and physical phenomena could be explained by correlated forces.

Body, especially brain, was considered by Bray the structural base of mental phenomena. Different parts of the brain were responsible for different mental functions. There was a part of brain responsible for ego or self-identity, a part responsible for the characteristic and direction of volition, and a part responsible for 'the world of our likes and antipathies—called the Moral world'.⁴⁴¹ In this sense, he claimed that mental forces were also physical forces and that there was no boundary

⁴³⁷ Ibid.

⁴³⁸ Bray, *Phases*, p. 97.

⁴³⁹ Ibid., p. 98.

⁴⁴⁰ James Hinton, 'Physiological Riddles', *Cornhill Magazine*, 2 (1860), 167–75 (p. 167); James Hinton, 'Physiological Riddles', *Cornhill Magazine*, 2 (1860), 421–31 (pp. 421 and 426).

⁴⁴¹ Bray, 'Arguments'.

between the mental and the physical, the soul and the body, and the spiritual and the material. To conceive the world as spiritual or as material made no essential difference for Bray, therefore, he also called the world ‘a great spiritual organism’.⁴⁴² Bray also used empiricist reasoning to sustain the dissolution of the gaps between matter, force, and mind. He wrote: ‘We know only our own consciousness, and “other things” all resolve themselves into forces which are transformed into mind, and are therefore directly akin. Thus all is mind, or if we prefer to say, force is material, why then, all is matter’.⁴⁴³

‘God’, in Bray’s definition, ‘is all, “the ever-present power—that presents itself to us as force—a power that does everything and assumes all forms”’.⁴⁴⁴ He denied the transcendence of God, and in this sense he considered himself an atheist.⁴⁴⁵ For him, God was the world, the universe, and the totality of everything, but ‘God’ was not simply another term to address the world. Bray saw the world as a great person, while all forces were its body, and the collective of all forces manifested its intelligence. He felt that there was a ‘Supreme Intelligence’⁴⁴⁶ of the world like there was an intelligence in every human. Bray treated laws, orders, and unity as manifestations of intelligence, therefore, he envisioned the laws, orders, and unity present in the universe and the general progressive trend of the universe as a sign that there was a great intelligence taking care of the universe, unifying things, and directing things with the purpose of making the universe better. As the term ‘God’ was commonly used to address a superior being in traditional Christianity, so Bray claimed that ‘[a]s Force is intelligent and One, it would be more properly called Being—possessing personality; and that Being we have called God’.⁴⁴⁷ The Supreme Intelligence was the intelligence of God, but as there was

⁴⁴² Bray, *Phases*, p. 225.

⁴⁴³ *Ibid.*, p. 229.

⁴⁴⁴ *Ibid.*, p. 224.

⁴⁴⁵ *Ibid.*, p. 200.

⁴⁴⁶ *Ibid.*, p. 226.

⁴⁴⁷ *Ibid.*, p. 102.

no boundary between the mental and the physical in Bray's view, so the Supreme Intelligence was not something separated from the body of God, but was a function of the body of God, like the human mind was a function of the human body. Bray was a determinist holding that everything was determined and no ordinary sense of free will existed.⁴⁴⁸ The Supreme Intelligence was no exception and it was also determined by its body.

After he reached the unification of mental and physical forces, that the physical and the mental were only different in terminology, he stressed further that physicists should take into account his proposed identification of the mental and the physical. He wrote that 'on the recognition of this great truth, that causation is as constant, and that law reigns as much in the realm of mind as of matter, our future progress in this department [physical science] must depend'.⁴⁴⁹

Bray labelled his idea 'the deification of nature'. He quoted words of Tyndall, Huxley, John Robert Seeley (1834–1895) who was the author of *Ecco Homo* (1866), Lucretius and James Hinton and claimed that deifying nature was inevitable in current science. He wrote:

Professor Tyndall tells us that "Matter contains the promise and potency of every form of terrestrial life." "By supposing the present material world," says Huxley, "to contain the principle of its order within itself, we really assert it to be God; and the sooner we arrive at that Divine Being, so much the better. [...] The author of "Ecce Homo" says that if men have ceased to believe in anything beyond Nature, the best thing for them to do, if they must have a God, is to deify Nature. Lucretius affirms "That Nature is seen to do all things spontaneously of herself, without the meddling of the gods."⁴⁵⁰

⁴⁴⁸ Ibid., p. 272.

⁴⁴⁹ Bray, 'Physics and Metaphysics', p. 412.

⁴⁵⁰ Bray, *Phases*, pp. 223–24.

Bray knew that deifying nature was a pantheistic action as he wrote that ‘[a]s James Hinton says—“Now we say “individuals and God in them,” here after we shall say “God and in this form””; and here James Hinton passes from Theism to Pantheism’.⁴⁵¹

Bray’s view on force, God, and the universe was considered pantheistic by others. A reviewer of the Evangelical Nonconformist periodical, the *British Quarterly Review*, called Bray’s philosophy a ‘new pantheism’.⁴⁵² Bray himself also implied that many of his friends wondered whether he was a pantheist, but he was hesitant to admit that he was, since he considered that ‘no Pantheist’ would accept the Supreme Intelligence he characterised.⁴⁵³ The reason why Bray wrote that no pantheist would accept his ideas of the Supreme Intelligence might be because the pantheistic thinkers he knew well—Thomas Carlyle, Ralph Waldo Emerson, William Wordsworth, Alfred Tennyson, James Allanson Picton, and James Hinton—did not subscribe to his image of God and of the world. Bray’s works were unpopular as he said that he never made a penny from writing,⁴⁵⁴ so it could be inferred that in his life time there might be no followers of his ideas who identified themselves as pantheists. Therefore, it might be because of the lack of approval from other pantheists on his philosophy that Bray concluded that he was not ‘a Pantheist according to its usual acceptance’.⁴⁵⁵

We have seen with Bray that it was possible to build a pantheistic theology upon physicists’ theories of force. A pantheistic conception of God could be inferred from the unity and the activeness of force. Bray made this inference straightforward. He actively claimed that the science of force was leading people to believe in an immanent God and a deified nature. In addition, as Bray claimed that he came up with his pantheistic philosophy when reading scientific practitioners’ books on force, he also implied that reading scientific books on force could lead people to accept pantheism.

⁴⁵¹ Ibid., p. 199–200.

⁴⁵² Anon, ‘On Force, its Mental and Moral Correlates’, *British Quarterly Review*, 45 (1867), 289–90 (p. 290).

⁴⁵³ Bray, *phases*, p. 227.

⁴⁵⁴ Ibid., p. 90.

⁴⁵⁵ Ibid., p. 227.

3.3 Conclusion

The term 'force', as it was used by Victorian scientific practitioners, could foster a sense that there was a unifying power in nature, or that there was only one power that ran nature. As we saw in Grove's, Carpenter's, and Faraday's scientific writings, they often talked about force not as a mathematical vector, but as something real, either as an abstraction of phenomena or as an entity. While they often restricted force to heat, light, electricity, magnetism, motion, inertia, gravity, and chemical affinity, they also implied that the term 'force' could be applied to anything physical, vital, or even mental. They often used scientific examples of the correlation of forces to support some limited unities in nature, though these examples and their conclusions could be easily used to support the idea of the universal unity of everything. Moreover, many scientific practitioners already believed in the idea of the universal unity before they proposed unifying theories. As we have seen, Faraday as a Sandemanian believed that the whole physical universe was a unified power created by God, and Carpenter as a Unitarian believed that natural forces were manifestations of the singular will of God. Oersted as a German natural philosopher was greatly influenced by German pantheistic philosophies. He believed that nature was a united mind, which could be called God.

The science of force in the Victorian era welcomed religious interpretations as many theories of force included ontological speculations, and as many scientific practitioners also gave their own interpretations to support their religious beliefs. Faraday and Carpenter made interpretations to support their dissenting beliefs. Other famous examples include Anglican scientific practitioner William Whewell's support of the doctrines of the Church of England in his Bridgewater Treatise *On Astronomy and General Physics* (1833), and Scottish physicists Balfour Stewart and Peter Tait's support of Presbyterian doctrines in their book *The Unseen Universe* (1875). It is well-known by historians that the science of force could be used by Victorian scientific practitioners to support the traditional theistic image of God. What is currently less well-known is that some Victorian scientific practitioners also used the science of force to support pantheistic images of God.

Bray and Hinton were scientific practitioners in a broader sense, although they were not physicists. Bray practiced phrenology and Hinton was a surgeon. While it is not discussed in this chapter in detail, Hinton did make use of the correlation and conservation theories of force to support his view of a living universe in his *Life in Nature* and some periodical papers such as the 'Physiological Riddles', which was mentioned in the section about Bray. These will be further discussed in the section dedicated to him in the fourth chapter of this dissertation. Bray and Hinton showed that their readings and speculations on the science of force helped them formulate their pantheistic beliefs, and that in return, when they argued for their pantheistic ideas, they used the science of force as an important support. What they had in common was that they inferred the universal unity of everything from the limited empirical evidence of the correlations of forces, they took the activeness of force as a sign of life or intelligence, and they saw such a living and intelligent universe as God.

Outside the scientific circle, there were also religious people who made use of the science of force in support of pantheism as we have seen in the cases of Martineau, Poynting, Picton, and Plumptre. Contrary to Bray, the science of force was less of an influence on their pantheistic ideas. Scientific theories of force served as evidence for some of their doctrines, rather than something inherent to their philosophies. Martineau used the concept of force and its correlation to reconcile science and religion while maintaining the intellectual authority of religion in the study of the physical world. Poynting used matter-as-force theories to support his monism and to counter materialistic and atheistic interpretations of science. Both already held that the universe was in some sense a manifestation of God's will, and they believed that the unity of forces proposed by scientific practitioners could make their view more convincing. Picton seldom talked about the science of force. He and Plumptre used conservation theories to support their view of a united reality which could be called God. The influence of German pantheism and natural philosophy is seen in Martineau. His view of force as a manifestation of God's will was echoed in Oersted's idea of the unity of mind in nature, which Martineau pointed out.

Most scientific sources of these advocates of pantheism belonged to the popular science category rather than to the hard science category. One might be tempted to

assume that German natural philosophy would have been more influential, but most advocates of pantheism did not pay much attention to German idealists' pantheistic interpretations of the science of force. Grove's *Correlation of Physical Forces* was the most popular source. Faraday's lectures and Carpenter's papers on correlation and conservation theories were also influential. Huxley as a famous scientific populariser was sometimes mentioned as a source of physical knowledge, though he was a biologist rather than a physicist. Besides these scientific practitioners' works, advocates of pantheism could also acquire knowledge about the science of force from popular philosophical writings, such as John Stuart Mill's *A System of Logic*. Most of the famous names in the history of physics, such as William Thomson and William Macquorn Rankine, were not mentioned.

4

Pantheistic Uses of the Science of Matter

One of the major developments of nineteenth-century theories of matter was chemical atomism, in which matter was assumed to be composed of heterogeneous atoms, or elements, that carried different properties and could be distinguished quantitatively by relative weight. First developed in the work of English chemist John Dalton (1766–1844) in the early 1800s, chemical atomism soon became very popular among chemists. It brought chemistry to the level of other precise sciences, such as mechanics and astronomy, and it fostered many new branches of science, such as organic chemistry and spectrum analysis. Three advocates of pantheism—James Hinton, James Allanson Picton, and Constance Plumptre—are studied in this chapter to demonstrate how scientific theories of matter could be used in support of pantheism. Scientific practitioners made many inferences from chemical atomism. Among them, two are particularly relevant to this chapter: first, the concept of living matter in which matter actively organised itself rather than being passively run by active agents; and secondly, the idea of the uniformity of matter according to which all realms of the world—the organic, the inorganic, the heaven, or the earth—shared the same atomic base. Hinton used the idea of living matter to support his pantheistic view that nature was alive; Picton used the implication of the uniformity of matter to support his monistic view of the world; and Plumptre used the idea of the uniformity of matter to argue for the uncreatedness of nature against creationism, and for the unity of man and the world. Scientific popularisers John Tyndall, Thomas Huxley, and John William Draper were their sources of chemical knowledge. Spectrum analysis, which was often introduced in popular organs, was also used as an evidence to support the unity of the universe.

In the first section of the chapter, I introduce the developments of chemical atomism and spectrum analysis, as well as Tyndall's, Huxley's, and Draper's interpretations. The second section of the chapter begins with a discussion of accusations of pantheism made against Tyndall. In her article 'John Tyndall: Pantheist', Ruth Barton studies

Tyndall's personal writings and concludes that Tyndall was a pantheist, though she seldom mentions Tyndall's contemporaries' views. I give a brief account of what Tyndall's contemporaries said about his pantheistic tendencies and demonstrate that Tyndall's claims could be viewed as supports for pantheism even by non-advocates of pantheism. After the section on Tyndall, there are three sub-sections detailing the uses of these theories of matter by the three advocates of pantheism.

4.1 Scientific Theories of Matter

4.1.1 The New Atomism as the Consensus Matter Theory

John Dalton introduced a new atomism for quantitative chemical analysis in his three-volume work *A New System of Chemical Philosophy* (1808, 1810, 1827). He defined atoms as heterogeneous minima of simple and compounded substances. There were as many different atoms as there were different substances. Dalton's atomic system was new in the sense that it merged two branches of former theories of matter—the atomic theory of matter and the elemental theory of matter.

The atomic theory of matter can be traced back to the ancient Greek philosophers Leucippus, Democritus, and Epicurus (341–270 BCE) and the Roman Epicurean poet Lucretius (died mid to late 50s BCE).⁴⁵⁶ They proposed that the world was composed of atoms, by which they meant indivisible tiny particles, and empty space between atoms. The atomic theory of matter was not favoured by physicists and chemists for many centuries until the fifteenth and sixteenth centuries. Scientific practitioners such as Francis Bacon (1561–1626), Galileo Galilei (1564–1642), and Johann Baptist Van Helmont (1579–1644) rediscovered Pre-Socratic atomic theories and incorporated

⁴⁵⁶David Konstan, 'Epicurus', in *SEP* <<https://plato.stanford.edu/>> [accessed 20 August 2018]; David Sedley, 'Lucretius', in *SEP* <<https://plato.stanford.edu/>> [accessed 20 August 2018]; Patricia Curd, 'Presocratic Philosophy', in *SEP* <<https://plato.stanford.edu/>> [accessed 20 August 2018].

them into their theories of matter.⁴⁵⁷ In the seventeenth century, systematic atomic theories were formulated by many philosophers, notably French philosopher Pierre Gassendi (1592–1655) and English mechanical philosopher Robert Boyle (1627–1691).⁴⁵⁸ Newton inherited Boyle’s atomism and improved it by adding mechanics and new properties to characterise atoms, such as attractive and repulsive forces, mass, and inertia.⁴⁵⁹ It was one of the Newtonians’ dreams to quantify chemistry with the measurement of chemical forces, and to make chemistry a predictive science like mechanics.⁴⁶⁰ Atoms were homogeneous particles for most of these atomic philosophers. They considered that homogeneous atoms were able to form complex structures that demonstrated different chemical phenomena.

Chemical practitioners, such as physicians, pharmacists, iatrochemists, alchemists, metallurgists, brewers, dyers, and tanners, usually found the atomic theory of matter too speculative to be used in practice, and they instead favoured the elemental theory of matter.⁴⁶¹ The elemental theory of matter can be traced back to the ancient Greek four-element system, in which matter was understood as a mixture of four elements—air, fire, earth, and water.⁴⁶² This four-element system was central to many ancient and Medieval philosophers’ views of matter. Aristotle founded his physics upon this system, and Paracelsus (1493–1541), the founder of iatrochemistry, also adopted this system. Many seventeenth and eighteenth century chemists also worked with similar elemental systems, such as that of German Cameralist Johann Becher (1635–1682), who proposed a system with three elements—‘mercurious earth’, ‘fatty earth’ and ‘vitreous earth’,

⁴⁵⁷ William H. Brock, *The Fontana History of Chemistry* (London: Fontana Press, 1992), p. 56; Jürgen Klein, ‘Francis Bacon’, in *SEP* <<https://plato.stanford.edu/>> [accessed 20 August 2018].

⁴⁵⁸ Alan Chalmers, ‘Atomism from the 17th to the 20th Century’, in *SEP* <<https://plato.stanford.edu/>> [accessed 20 August 2018].

⁴⁵⁹ Chalmers, ‘Atomism’.

⁴⁶⁰ Arnold Thackray, *Atoms and Powers—An Essay on Newtonian Matter-Theory and the Development of Chemistry* (Cambridge: Harvard University Press, 1970), p. 5.

⁴⁶¹ Brock, *History of Chemistry*, p. xviii.

⁴⁶² See Aristotle’s *On Generation and Corruption*.

and German chemist Georg Ernst Stahl (1659–1734), who renamed ‘fatty earth’ as ‘phlogiston’ in 1718 and added water as the fourth element of matter in this system.⁴⁶³

There existed a more pragmatic form of the elemental theory of matter among chemical practitioners. Isolatable substances, such as ‘gold, silver, iron, mercury, tin, copper [...] lead [...] brimstone [sulphur] [...] [and] charcoal [carbon]’, were treated as simple substances since ancient time.⁴⁶⁴ Fire was often used as an analytical method to decide whether a substance was decomposable (or not simple) or not. Chemical practitioners could directly observe, manipulate, and study these substances and their mutual reactions. However, chemical practitioners often used different names and definitions to describe substances, and this caused difficulties in the communication of chemical knowledge for a long time. A universal systematic nomenclature was finally proposed by French chemists Louis-Bernard Guyton (1737–1816), Antoine Lavoisier (1743–1794), and their colleagues in the late eighteenth century.⁴⁶⁵ In this nomenclature, substances were classified into two general categories: ‘substances not decomposed’, or elements, and compounded substances. Before, a substance might have had many names in different chemical texts, but in this nomenclature, a substance was assigned a unique chemical name which indicated its chemical constitutions.⁴⁶⁶ Elements included oxygen, hydrogen, sulphur, mercury, gold, copper, iron, lead, silver, tin, zinc, antimony, nickel, charcoal, etc.⁴⁶⁷ Compounded substances had names such as ‘sulphuric acid’, ‘red oxyd [oxide] of iron’ and ‘white oxyd of tin’.⁴⁶⁸ By the end of the eighteenth century, this nomenclature had become the standard chemical language among chemical practitioners across Europe. Its position was strengthened by

⁴⁶³ Brock, *History of Chemistry*, p. 80–81.

⁴⁶⁴ *Ibid.*, p. 9.

⁴⁶⁵ *Ibid.*, p. 116.

⁴⁶⁶ Louis Bernard Guyton, *Method of Chymical Nomenclature* (London: Kearsley, 1788), pp. 73–74.

⁴⁶⁷ Guyton, *Nomenclature*, p. 73.

⁴⁶⁸ Brock, *History of Chemistry*, p. 116.

influential textbooks such as Lavoisier's *Traité élémentaire de chimie* (1789), which was translated into English by Scottish writer Robert Kerr (1757–1813) in 1790.⁴⁶⁹

Dalton merged these two traditions of theories of matter by making 'atom' and 'element' synonymous. In his theory, atoms were no longer homogeneous but heterogenous, and each atom represented an element or a compound. The groundbreaking part of his atomism was the assumption that different atoms had different atomic weights. Exact atomic weights were not measurable in the nineteenth century, but relative atomic weights were. Dalton proposed a stoichiometry in his *New System* to calculate relative atomic weights, and this method turned out to be very successful. Chemical elements and chemical reactions could be measured and represented quantitatively by relative weights. As Arnold Thackray points out, Dalton's work soon changed the focus of chemists from chemical mechanism to chemical measurement.⁴⁷⁰

The philosophical ground of the new atomism was unstable, though this did not trouble most chemists as they could measure relative weights of chemicals without considering what ultimate particles were nor whether there were forces between them. Historically, the atomic approach was usually more speculative and metaphysical than the elemental approach. The term 'atom' usually implied something fundamental, while 'element' usually meant something simple and did not necessarily carry the notion of something fundamental. Dalton united these two approaches, ascribing the metaphysical status of the atom to the notion of element. He claimed that elements, or atoms, were 'the ultimate particles'⁴⁷¹ of matter and pictured them as solid billiard balls. However, this view was questioned by many chemists as it was very speculative. Chemists, such as Jöns Jacob Berzelius (1779–1848), William Ostwald (1824–1903), and

⁴⁶⁹ Ibid., p. 119; Antoine-Laurent Lavoisier, *Elements of Chemistry in a New Systematic Order Containing All the Modern Discoveries*, trans. by Robert Kerr (Edinburgh: Printed for William Creech, 1790).

⁴⁷⁰ Thackray, *Atoms*, p. 276.

⁴⁷¹ John Dalton, *A New System*, Part I (Manchester: R. Bickerstaff, 1808), p. 143.

Pierre Duhem (1861–1916), could make use of the stoichiometry without committing to Dalton's philosophy of atom.⁴⁷²

By 1860, the new atomism became the standard theory of matter in chemistry.⁴⁷³ Chemicals were represented by combinations of heterogeneous billiard-ball atoms or elements, and each of them had a set relative weight. The new atomism gave rise to many fields of science. For example, as Alan Chalmers summarises, organic chemistry had progressed significantly since the 1830s due to the application of chemical formulae; the structures of organic compounds were proposed in the vision of this atomism; the statistical kinetic theory of gas, in which the behaviour of gas was explained by the motion and collision of molecules, was developed by Maxwell from 1859; and atomic explanations were extended and succeeded in not only these two fields but also in 'the effect of solutes on solutions, osmotic pressure, crystallography and optical rotation, properties of thin films, spectra and so on'.⁴⁷⁴ Although there still existed many rival systems and despite the fact that there was no consensus on the ultimate structure of matter among scientific practitioners, the new atomism was the theory that provided the widest range of generalisation during this period. Hence, this new atomism was generally accepted by scientific practitioners in the second half of the nineteenth century as the best theory of matter.⁴⁷⁵

This consensus among scientific practitioners was communicated to the public through various kinds of organs—textbooks, popular science books, lectures, periodicals, pamphlets, newspapers, etc. Chemical textbooks after 1860, such as industrial writer Charles Haughton Gill's *Chemistry for Schools* (1869) and chemist and astronomer William Allen Miller's *Introduction to the Study of Inorganic Chemistry* (1878), were mostly written in elemental and atomic terms. Tables of elements were given in these textbooks including symbols and relative atomic weights of elements,

⁴⁷² Chalmers, 'Atomism'.

⁴⁷³ Ibid.

⁴⁷⁴ Ibid.

⁴⁷⁵ Ibid.

and chemical reactions were explained by chemical formulae.⁴⁷⁶ Scientific practitioners would seldom leave out the terms ‘atom’ and ‘element’ when they mentioned theories of matter in their scientific discourses. For example, Tyndall gave an evening lecture in Manchester in 1874 on crystals, and he explained the phenomena of crystallisation in full atomic terms, such as ‘atomic architect’, ‘play of invisible particles’, and ‘atoms is [...] added to atoms’.⁴⁷⁷ Newspapers such as the daily national newspaper, *The Times*, reported chemists’ accounts of the new atomism. For example, in a report of the British Association for the Advancement of Science Meeting in September 1883, the chemist and president John Hall Gladstone’s address on the history of elemental theories was reported, and terms such as ‘hydrogen’, ‘elementary science’, and ‘atomic weights of the elements’ were introduced.⁴⁷⁸ Until the end of the nineteenth century, newly discovered elements, such as argon, were reported widely by science-related periodicals and newspapers.⁴⁷⁹ Through these medias, the new atomism appeared to the public as the most scientific and intellectually authoritative way to view matter.

4.1.2 Spectrum Analysis and the Uniformity of the Heaven and the Earth

Spectrum analysis was a newly emerged branch of science in the 1860s in which the spectra of terrestrial and heavenly bodies were used to identify their chemical

⁴⁷⁶ See William Allen Miller, *Introduction to the Study of Inorganic Chemistry* (London: Longmans, Green, & Co., 1878), p. 5–6; and C. Haughton Gill, *Chemistry for Schools—An Introduction to the Practical Study of Chemistry* (London: James Walton, 1869), p. 2–3.

⁴⁷⁷ John Tyndall, ‘Crystals and Molecular Force’, in *Fragments of Science*, Fifth Edition (London: Longmans, Green, and Co., 1876), pp. 564–82 (p. 574).

⁴⁷⁸ Anon, ‘The British Association’, *The Times*, 21 September 1883, 4.

⁴⁷⁹ For example, Anon, ‘Argon: A New Constitution of the Atmosphere’, *Edinburgh Review*, 182 (1895), 404–17; Anon, ‘Argon: The Newly Discovered Constituent of the Atmosphere’, *Academy*, 1188 (1895), 130.

elements.⁴⁸⁰ The study of spectra had been carried out long before the 1860s. The phenomenon in which a rainbow light was generated by a prism was known by the Romans.⁴⁸¹ The publication of Newton's *Opticks* in 1704 marked the beginning of modern spectroscopy. In the 1800s, German physicist Joseph Fraunhofer (1787–1826) found that there were a large number of thin black lines in the solar spectrum as well as in other stars' spectra, and he recorded these black lines in great detail. These lines were called the Fraunhofer lines. In the first half of the nineteenth century, physicists, such as John Herschel (1792–1871) and William Talbot (1800–1870), also studied the spectra of the coloured flames produced by the burning of salts. The spectra of salts were not rainbow-like but were composed of several thin bright lines and thick black lines between them. Some British physicists, such as George Gabriel Stokes (1819–1903) and Balfour Stewart, found that some salts' bright lights seemed to be able to fit in the black lines of the solar spectrum, but they considered this to be a coincidence.⁴⁸² In the 1860s, German physicists Robert Bunsen (1811–1899) and Gustav Robert Kirchhoff (1824–1887) began to systematically study the spectra of flames produced by burning chemical elements. Kirchhoff found that a vapour of an element absorbed from white light the rays that it emitted when it was burned. This striking discovery allowed them to assume that the dark lines in the spectrum of sun light indicated that corresponding elements existed in the sun and absorbed corresponding rays. With this assumption, it was possible to analyse the chemical constitution of a terrestrial or heavenly body by comparing its spectrum with known elements' spectra.

Many popular accounts of spectrum analysis appeared in the 1860s and the 1870s in Britain, such as British chemist Henry E. Roscoe's *Spectrum Analysis—Six Lectures* (1870) and German school principal Heinrich Schellen's textbook *Spectrum Analysis in Its*

⁴⁸⁰ Ian D. Rae, 'Spectrum Analysis: The Priority Claims of Stokes and Kirchhoff', *Ambix*, 44 (1997), 131–44 (p. 131).

⁴⁸¹ John Brand, *Lines of Light: The Sources of Dispersive Spectroscopy, 1800–1930* (Philadelphia: Gordon and Breach Publishers, 1995), p. 57.

⁴⁸² Rae, 'Spectrum Analysis', p. 134.

Application, which was translated into English in 1872.⁴⁸³ The elemental constitutions of many celestial bodies were presented. For example, Schellen wrote that in the sun, ‘iron, sodium, potassium, calcium, magnesium, manganese, chromium, nickel, and hydrogen’ were strongly considered to exist, that ‘zinc, barium, copper, cobalt, and gold’ might exist, and that ‘silver, mercury, antimony, arsenic, tin, lead, cadmium, strontium, [...] lithium, [...] silicon and oxygen’ did not exist.⁴⁸⁴ It was known that the moon and planets did not emit light but reflected sunlight. Their spectra were mostly the same as the solar spectrum and any differences would indicate the substances that absorbed rays in their surfaces. For example, Schellen also wrote that the spectra of ‘Venus, Mars, Jupiter, and Saturn’ indicated that their atmosphere contained ‘aqueous vapour’, and that the spectrum of Neptune seemed to suggest that it contained ‘carbon’.⁴⁸⁵ Stars were known to be suns that emitted light. Sodium and Magnesium were assumed to exist in most stars, while hydrogen, ‘bismuth, antimony, tellurium, and mercury’ were assumed to exist in some stars.⁴⁸⁶

Such spectroscopic writings demonstrated to the public that scientific practitioners had found terrestrial elements in the heavens. They implied that the heavens were not absolutely different from the earth. Moreover, from this, it could easily be inferred that the whole universe shared a material base or an elemental structure with things on the earth.

4.1.3 Divergent Interpretations of the New Atomism

Chemical atomism and the elemental structure of matter was widely accepted by British scientific practitioners in the second half of the nineteenth century, however, when it comes to the philosophical and theological implications of chemical atomism, they had

⁴⁸³ Henry E. Roscoe, *Spectrum Analysis—Six Lectures* (London: Macmillan & Co., 1870); Heinrich Schellen, *Spectrum Analysis in Its Application*, trans. by Jane and Caroline Lassell (London: Longmans, 1872).

⁴⁸⁴ Schellen, *Spectrum Analysis*, p. 247.

⁴⁸⁵ *Ibid.*, pp. 482 and 487.

⁴⁸⁶ *Ibid.*, pp. 492–93.

many different views. Many British physicists and chemists proposed their interpretations in line with their own religious convictions. While chemistry was not used as commonly as mechanics, astronomy, geology, and biology by British natural theologians in support of natural theology, some of them did incorporate chemical knowledge into their natural theology. A famous example was Anglican physician and chemist William Prout's Bridgewater Treatise: *Chemistry, Meteorology, and the Function of Digestion—Considered with Reference to Natural Theology* (1834). The series of books, *The Bridgewater Treatises*, was composed of eight treatises written by seven leading scientific practitioners and a layman. The purpose of these treatises was to demonstrate 'the Power, Wisdom, and Goodness of God as manifested in the Creation', which was the core doctrine of natural theology.⁴⁸⁷ Prout portrayed God as the 'Supreme Chemist' who created the world and gave purpose to things, and he considered that chemists worked as collaborators of the Supreme Chemist and helped Him 'complete or perfect creation'.⁴⁸⁸ In the treatise, he introduced the contemporary corpuscular and elemental theory of matter, physical forces, the constitution of the earth, the attribution of elements, heat and light on the earth, the adaptations of life, the organisations of organic bodies, and modes of nutrition such as digestion. In due courses, he reminded readers that these 'wonderful and extraordinary arrangements [...] display the wisdom and power of the great Creator'.⁴⁸⁹

Orthodox interpretations of matter theory can also be found among Scottish Presbyterian scientific practitioners. For example, the Presbyterian physicists Balfour Stewart (1828–1887) and P. G. Tait (1831–1901) wrote the book *The Unseen Universe* (1875), aiming to counter 'the materialistic statements now-a-days freely made (often

⁴⁸⁷ See the 'Notice' in William Prout's treatise *Chemistry, Meteorology, and the Function of Digestion* (London: William Pickering, 1834).

⁴⁸⁸ See Richard Ahrens, 'William Prout (1785–1850) A Biography Sketch', *Journal of Nutrition*, 107 (1977), 17–22 (p. 21); and Brooke and Cantor, *Reconstructing Nature*, p. 333.

⁴⁸⁹ Prout, *Chemistry*, p. 85.

professedly in the name of science)'.⁴⁹⁰ They proposed that there was an unseen universe alongside the visible universe, and they reconciled their belief and scientific theories by using this assumption. The existence of the unseen universe allowed the existence of the things 'absolutely immaterial and spiritual' (201). Thus, the existence of God, the interference of God upon the visible universe, the soul of man, the special position of man in nature, etc. could be made intelligible and compatible with contemporary physical and chemical theories. They also argued against ancient Greek and Roman atomic theories in which atoms were homogeneous, solid, and impenetrable particles. They called them 'the very false ideas' (130). They considered that this model of atoms would reduce 'the order of the universe to pure chance' and thus resulted in materialism. They rather supported William Thomson's vortex atomism. Thomson was influenced by Faraday's matter-as-force theory and pictured atoms as ether vortexes. Atoms in this sense were not divisible, they formed a continuum. Stewart and Tait claimed that 'the act by which the atom was produced must necessarily [...] have been an act of creation in time, that is to say, an act impressed upon the universe from without' (155). They considered that this dynamic model of atoms strongly suggested the existence of the unseen universe and the existence of 'the Great First Cause' who set ether to rotate.⁴⁹¹ Their belief in the existence of the supernatural thus could be maintained under the new atomism.

The three scientific practitioners—Tyndall, Huxley, and Draper—that will be mainly discussed in the following sub-sections were rather unorthodox and radical scientific practitioners. In this chapter, I demonstrate that their interpretations supported radical theological positions—materialism, atheism, and also pantheism. The following three sub-sections introduce their relevant interpretations that were used by advocates of pantheism.

⁴⁹⁰ B. Stewart and P. G. Tait, 'Preface to the First Edition', in *The Unseen Universe*, Sixth Edition (London: Macmillan and Co., 1876), pp. xi–xii (p. xi). Also see P. M. Heimann, 'The Unseen Universe: Physics and the Philosophy of Nature in Victorian Britain', *BJHS*, 6 (1972), 73–79 (p. 79).

⁴⁹¹ Stewart and Tait, *Unseen Universe*, p. 172.

4.1.3.1 John Tyndall and the Uncreatedness of the Organic World and the Structural Power of Matter

Tyndall used chemical knowledge to support his assumptions about the uncreatedness of the organic world and the structural power of matter, or the living power of matter. These two assumptions were often perceived as radically opposed to orthodox Christianity since they potentially denied the divine origin of life, the divine influence in nature, and consequentially the existence of God. Tyndall often advocated that organic nature was uncreated in the sense that its matter and forces were fundamentally the same as those of inorganic nature. He was against the vitalism held by Christians, such as Prout and Coleridge, who posited the existence of a special vital force in the organic world but not in the inorganic world. Molecular behaviour was one of Tyndall's main research topics.⁴⁹² In support of his arguments, Tyndall often illustrated the circulation of molecules between human body, animal, vegetable, and the inorganic environment.

His arguments appeared as early as in an anti-vitalism essay published in 1864. The essay was collected in the *Fragments of Science* under the title 'Vitality'.⁴⁹³ Tyndall defined vitality or vital force as 'a special agent' responsible for 'the origin, growth, and energies of living things' (459). He considered that 'all the energy which we derive from plants and animals is drawn from the sun' (459), rather than from any supernatural sources. He pointed out that this idea had existed for many years, but that it was more poetical than scientific as no one had been able to provide a mechanical theory to explain the detailed mechanism (459-60). He intended to use the current atomism to formulate a mechanism. He considered that the energy came from the sun 'lifted [the oxygen] from the carbon and the hydrogen' (462). Potential energy was restored in 'the forcible separation of the atoms of compound substances' (461). Why was potential energy generated in such a way? In another article, 'The Constitution of Nature', Tyndall explained that '[w]herever two atoms capable of uniting together by their mutual

⁴⁹² Ursula Deyoung, *A Vision of Modern Science* (USA: Palgrave Macmillan, 2011), p. 28.

⁴⁹³ John Tyndall, 'Vitality', *Fragments of Science*, Fifth Edition, pp. 459–65.

attractions exist separately, they form a store of potential energy'.⁴⁹⁴ Tyndall considered that this energy could turn into motion and heat through reunions of oxygen, carbon, and hydrogen in chemical reactions in organisms. Tyndall also considered that the energy transmission from plants to animals and eventually to human bodies occurred through the circulation of molecules. When 'we eat the vegetable, and we breathe the oxygen of the air' (462), energy was transferred from our environment to our bodies. An atomic mechanism of the origin, storage, and conversion of vital force was thus formulated. As molecules and forces circulated between the organic and the inorganic worlds, Tyndall argued for the uncreatedness of the organic world. He wrote: 'the matter of the animal body is that of inorganic nature. There is no substance in the animal tissues which is not primarily derived from the rocks, the water, and the air' (462). Thus, Tyndall argued that no new atoms were created when organisms were formed, and no atoms were destroyed when organisms died; that molecules circulated between different kinds of bodies; and that the circulation of atoms and molecules was responsible for the transmission of energy between the two worlds.

Tyndall repeated this view in his famous Belfast Address in 1874, and this time he strongly implied that the uncreatedness of the vegetable world was a generalisation that had been accepted by contemporary scientific practitioners. Near the end of the address, when Tyndall introduced the current grand scientific generalisations, he mentioned that '[t]he vegetable world, though drawing almost all its nutriment from invisible sources, was proved incompetent to generate anew either matter or force. [...] The activity of each animal as a whole was proved to be the transferred activity of its molecules'.⁴⁹⁵ Tyndall gave the address as the president of the British Association for the Advance of Science. The address was expected to be a summary of scientific progress in Britain in the previous year.⁴⁹⁶ In his speech, Tyndall did not present the

⁴⁹⁴ John Tyndall, 'The Constitution of Nature', *Fragments of Science*, Fifth Edition, pp. 3–26 (p. 23).

⁴⁹⁵ John Tyndall, *Address Delivered Before the British Association Assembled at Belfast, With Additions* (London: Longmans, Green, and Co., 1874), p. 46.

⁴⁹⁶ Deyoung, *A Vision*, p. 112.

views of his opponents and instead gave the impression that his view was the consensus. It can be imagined that for those who held similar views with Tyndall, this address was a good resource.

Tyndall also advocated a view of matter in which matter possessed immense power that allowed it to form organic and inorganic structures without any external help. He called this power structural power, constructive power, or formative power. He also considered that the assumption of the structural power of matter was the fundamental feature that separated his so-called 'scientific materialism' from brute materialism. He used the formative mechanisms of chemical compounds established by chemists as examples. Tyndall's scientific materialism turned out to be highly offensive to many Christians since it had the potential to deny the divine origin of life given that living structures were organised by matter itself without any divine interference.⁴⁹⁷

Tyndall's scientific materialism comprised four main doctrines: he believed that matter was not passive but instead possessed immense structural power which allowed it to form both inorganic and organic structures without the help of an external intelligence; that matter was ultimately mysterious, so no one should arbitrarily limit its potential; that the connection between matter and consciousness was also mysterious; and that matter should be studied under the contemporary atomism without the interference of theology. This materialism appeared in the essay 'Vitality', and Tyndall described the essay as a succinct version of the scientific materialism he expressed in his Belfast Address.⁴⁹⁸ As Tyndall considered that organic matter was derived from inorganic matter, he suggested that the structural power of matter was responsible for the formation of organics. He wrote: 'Structural forces are certainly in the mass whether or not those forces reach to the extent of forming a plant or an animal. [...] In an amorphous drop of water lie latent all the marvels of crystalline force; and who will set limits to the possible play of molecules in a cooling planet? If these statements startle, it is because matter has been defined and maligned by philosophers and theologians,

⁴⁹⁷ Ibid., p. 100.

⁴⁹⁸ Tyndall, 'Vitality', p. 465.

who were equally unaware that it is, at bottom, essentially mystical and transcendental'.⁴⁹⁹

Tyndall elaborated his scientific materialism three years later in an address delivered before the mathematical and physical section of the British Association in Norwich on 19 August 1868.⁵⁰⁰ The address was included in *Fragments of Science* since its first edition under the title 'Scientific Materialism'. In the fifth edition, when Tyndall included the 1874 Belfast Address in *Fragments of Science*, he designated this 1868 address as a suitable 'supplement' of the 1874 Belfast Address.⁵⁰¹ In 'Scientific Materialism', he gave many examples of minerals, vegetables, and animals to demonstrate the 'constructive power' (413) of matter, such as the formations of crystals, the growth of a grain of corn, and animal heat and motion. Based on these examples, Tyndall claimed that the structural power of matter alone could explain 'the formation of a crystal, a plant, or an animal' (418). He also claimed that 'many scientific thinkers more or less distinctly believe' in this (418).

It is important to note that Tyndall did not apply this view to consciousness. He did not consider that consciousness could be reduced to the molecular condition of the brain. Tyndall claimed that the profound scientific thinkers of his day would also agree that 'for every fact of consciousness [...], a definite molecular condition, of motion or structure, is set up in the brain' (419), and that the change of molecular conditions in the brain would affect consciousness. 'But,' he said, 'the passage from the physics of the brain to the corresponding facts of consciousness is unthinkable' (420). How consciousness perceived, translated, and in return controlled the molecular condition in the brain was a problem Tyndall did not think could be answered. He did not consider consciousness and the molecular condition of the brain to be identical. Tyndall thus rejected the 'materialist' position that molecular motions could explain everything

⁴⁹⁹ Tyndall, 'Vitality', p. 464.

⁵⁰⁰ John Tyndall, *Fragments of Science*, First Edition (London: Longmans, Green, and Co., 1871), p. 107.

⁵⁰¹ John Tyndall, 'Scientific Materialism', in *Fragments of Science*, Fifth Edition, pp. 409–22 (p. 422).

(420–21). He claimed that ‘the problem of the connection of body and soul is as insoluble, in its modern form, as it was in the pre-scientific ages’ (421).

Tyndall advocated his scientific materialism again in the 1874 Belfast Address, though he gave fewer examples of the structural power of matter than he did in his previous lecture ‘scientific materialism’. Tyndall tried to persuade audiences that ‘any form of life can be developed out of matter’ (524). He pointed out that chemists were ‘intimately acquainted with the structural power of matter, as evidenced in the phenomena of crystallisation’ (525). They had found the mechanical mechanisms of the formation of many substances that ‘were some time ago regarded as the sole products of vitality’ (525). Tyndall reasoned that this trend of discovery could justify the belief that all organisms’ mechanical mechanisms of formation could be discovered, so it was proper to believe that matter had the potency to form life. Whether consciousness was formed by matter was again claimed by Tyndall as an ‘unanswerable’ question (504).

Tyndall’s three articles—‘Vitality’, ‘Scientific Materialism’, and the 1874 Belfast Address became very useful scientific sources for those who supported materialism, who were against creationism, and who denied the divine influence upon natural processes. Many reviewers labelled Tyndall a leading materialist, though Tyndall himself avoided the title of materialist and was more in favour of the title of agnostic.⁵⁰² He did not build a systematic philosophy and left many questions unanswered, such as the relation between the spiritual and the material.

4.1.3.2 Thomas Huxley and the Physical Basis of Life

Huxley was keen on marketing his view of the universe, which he called ‘New Nature’. His ‘New Nature’ was a self-contained and self-evolving system.⁵⁰³ It was in opposition with the old static and divine-interfered nature in traditional Christian theology. His

⁵⁰² Bernard Lightman, ‘Scientists as Materialists in the Periodical Press: Tyndall’s Belfast Address’, in *Science Serialized*, ed. by Geoffrey Cantor and Sally Shuttleworth (Cambridge: Mass., 2004), 199–238.

⁵⁰³ Adrian Desmond, *Huxley Evolution’s High Priest* (London: Michael Joseph, 1997), p. 7.

view was somewhat radical, but he was more cautious than Tyndall and was willing to reconcile Christian theology with science. Huxley did believe in some Christian doctrines, such as the immortality of soul, though he seldom expressed them in the public.⁵⁰⁴ He preferred to call his position 'agnosticism', a term he coined, which meant that he did not subscribe to any metaphysical views of God.⁵⁰⁵ Huxley, like Tyndall, held that matter possessed the power to form life, and he also believed that all organic matter had the same basic structure. These views were expressed in his famous public lecture, 'The Physical Basis of Life', delivered in Edinburgh on 8 November 1868.⁵⁰⁶ The lecture was collected in his book *Lay Sermons* (1870).

In the beginning of the lecture, Huxley introduced that 'protoplasm' was the scientific name of 'the physical basis of life' (132). By using this phrase, he intended to convey his idea that 'there is some one kind of matter which is common to all living beings, and that their endless diversities are bound together by a physical, as well as an ideal, unity' (132–33). Huxley pointed out that 'under a sufficiently high microscopic power', physiologists and biologists had seen that human tissues as well as vegetables were composed by 'innumerable multitude of little, circular, discoidal bodies, or corpuscles' (139). These 'corpuscles' were 'of essentially similar structure' (139). Using this evidence, Huxley considered that 'so far as form is concerned, plants and animals are not separable' and 'all living forms are fundamentally of one character' (141–42). He called these corpuscles protoplasm, the physical basis of life, 'living matter' (142), or 'the matter of life' (148).

Huxley then argued that 'the properties of protoplasm result from the nature and disposition of its molecules' rather than from 'vitality' (151). He considered that protoplasm was 'always dying', resolving to 'its mineral and lifeless constitutions', though it would come alive again from lifeless matter (145). He pointed out that chemists' analyses of organics showed that 'all the forms of protoplasm which have yet

⁵⁰⁴ Paul White, *Thomas Huxley* (Cambridge: Cambridge University Press, 2003), p. 103.

⁵⁰⁵ Desmond, *Huxley*, p. 8.

⁵⁰⁶ Thomas Huxley, 'On the Physical Basis of Life', in *Lay Sermons* (London: Macmillan, 1870), pp. 132–61.

been examined contain the four elements, carbon, hydrogen, oxygen, and nitrogen, in very complex union' (143). These four elements were 'all lifeless bodies', and 'in certain proportions and under certain conditions', they gave rise to 'carbonic acid, water, and ammonia' (149). These compounds were also lifeless, but 'when they are brought together, under certain conditions they give rise to the still more complex body, protoplasm, and this protoplasm exhibits the phenomena of life' (149). Huxley saw 'no break in this series of steps in molecular complication', and he considered it fit 'to speak of the various powers and activities of these substances as the properties of the matter of which they are composed' (149).

Huxley understood that it was unconventional at that time to treat the phenomena of life in the same way as the properties of matter. He tried to render this idea intelligible by comparing water and protoplasm. He pointed out that 'when hydrogen and oxygen are mixed in a certain proportion, and an electric spark is passed through then, they disappear, and a quantity of water, equal in weight to the sum of their weights, appears in their place' (149). In explaining this phenomenon, scientific practitioners did 'not assume that a something called "aquosity" entered into and took possession of the oxide of hydrogen [...], and then guided the aqueous particles to their places' (149). They rather believed that this phenomenon was a 'result from the properties of the component elements of the water' (150). Huxley then pointed out that the formation of protoplasm was like that of water. 'When carbonic acid, water, and ammonia disappear, and in their place, under the influence of pre-existing living protoplasm, an equivalent weight of the matter of life makes its appearance' (150). It was common to assume that vitality came into function during the formation of protoplasm, but Huxley contested that it made no sense to assume vitality while at the same time abandoning aquosity. He argued: 'If scientific language is to possess a definite and constant signification whenever it is employed', (151) then '[i]f the phenomena exhibited by water are its properties, so are those presented by protoplasm, living or dead, its properties' (151). Huxley considered it a logical conclusion that 'all vital action may [...] be said to be the result of the molecular forces of the protoplasm which displays it' (152).

Unlike Tyndall, Huxley did not hesitate to put forth the claim that mental phenomena could also be explained as molecular properties. He said that 'it must be true, in the same sense and to the same extent, that the thoughts to which I am not giving utterance, and your thoughts regarding them, are the expression of molecular changes in that matter of life which is the source of our other vital phenomena' (152). This attitude was also expressed in other lectures. For example, in a lecture on Descartes's 'Discourse Touching the Method of Using One's Reason Rightly and of Seeking Scientific Truth', Huxley introduced Descartes' mechanical philosophy in which animals and human bodies were viewed as machines. He added that 'thought is as much a function of matter as motion is'.⁵⁰⁷

The common cellular structure of organic substances introduced by Huxley in his public sermon could be striking for many Victorians. The life forms that in appearances had no any significant similarity, such as a plant and a human body, now were said to be fundamentally the same thing. This sermon was a great source for those who needed to find scientific support for the uniformity of living things and the uniformity of the organic and the inorganic.

4.1.3.3 John William Draper and the Indestructibility of Matter

Physicists and chemists in the nineteenth century often assumed matter to be indestructible within the course of nature, as we have seen with Faraday in the previous chapter. From the second half of the eighteenth century, weight was increasingly accepted as a form of measurement for the quantity of matter, and the conservation of mass was increasingly accepted as an axiom.⁵⁰⁸ Gravimetric analysis had been one of chemical practitioners' major concerns since the late eighteenth century. The weight of an element was often assumed to be conserved during a chemical reaction.⁵⁰⁹ It was a common belief among chemists that matter was not created or destroyed if its weight

⁵⁰⁷ T. Huxley, *Lay Sermons*, p. 371.

⁵⁰⁸ Alan J. Rocke, *Chemical Atomism in the Nineteenth Century—From Dalton to Cannizzaro* (Columbus: Ohio State University Press, 1984), p. 5.

⁵⁰⁹ Chalmers, 'Atomism'.

did not change. Chemists' assumption of the conservation of mass during chemical reactions strengthened the doctrine of the indestructibility of matter.

The belief in the indestructibility of matter was also a traditional doctrine of atomism, expressed in the indestructibility of atoms. It was mentioned or implied in the philosophies of pre-Victorian atomic philosophers, among whom Democritus, Epicurus, and Lucretius were often mentioned in Victorian publications.⁵¹⁰ The indestructibility of atoms was also expressed by many Victorian physicists and chemists within the context of the new atomism. Empirically proving the indestructibility of atoms was not possible as atoms were not observable in the nineteenth century. Scientific writers used indirect evidence to render this view intelligible and convincing for general readers. One favourite strategy was to portray that atoms circulated between bodies without being destroyed or created. The writer and chemist John William Draper (1811–1882) gave such an example in his *History of the Intellectual Development of Europe* (1863).

In *History of the Intellectual Development of Europe*, Draper gave a short history of chemistry from ancient times to the present.⁵¹¹ He claimed that 'the idea of the destruction and creation of matter' was 'disposed' in modern chemistry, and that 'the indestructibility of matter', or 'the imperishability of substance', was one of the fundamental assumptions of current chemistry.⁵¹² The 'constituent parts', or 'atom[s]', were indestructible, and they were not the aspects of things that might 'change through decompositions and recombinations' (602).

Draper then used the example of the circulation of a particle of water in nature to demonstrate the continuity of atoms despite changes in form. In this example, the trip of the particle of water began in the sea. It then evaporated into the air. Its motion was

⁵¹⁰ Tyndall mentioned in one of his public discourses that 'You have probably heard of late of certain disturbers of the public peace named Democritus, Epicurus, and Lucretius'. See John Tyndall, 'Crystals and Molecular Force, 1874', in *Fragments of Science*, Fifth Edition, pp. 564–82 (p. 568).

⁵¹¹ John William Draper, *History of the Intellectual Development of Europe*, Fifth Edition (New York: Harper and Brothers, 1875), p. 595.

⁵¹² Draper, *Intellectual Development*, p. 602.

invisible. It then might become a particle of a cloud and drop onto the earth as a particle of a rain-drop. It might then become a particle in a fountain, enter the root of a plant, and become a particle of the plant. It might move to a leaf of the plant and be decomposed into oxygen and hydrogen by sunlight. Its constituent oxygen and hydrogen might then become parts of organic compounds of the leaf. An animal might eat the leaf and take in these elements of the particle of water into its body. These elements might then be combined into a particle of water again through chemical reactions within the animal's body and excreted through breath or even tears. It might eventually become a particle in the sea again. Draper claimed that for the particle of water, 'whatever the course through which it has passed, whatever mutations it has undergone, whatever the force it has submitted to, its elementary constituents endure. Not only have they not been annihilated, they have not even been changed' (602). In other words, the atoms that composed this particle of water were indestructible since no matter how they circulated, they did not change.

4.2 Pantheistic Uses of Scientific Theories of Matter

In the first part of this chapter, I have introduced the new atomism, the development of spectrum analysis, and Tyndall's, Huxley's, and Draper's interpretations of these developments in the theory of matter. In this second part, I first give a brief account of how Tyndall's contemporaries viewed his seemingly pantheistic theory of living matter. I then give three accounts of the uses of theories of matter in support of pantheism by Hinton, Picton, and Plumptre.

4.2.1 Accusations of Pantheism Made Against John Tyndall

Tyndall was accused of pantheism by some of his contemporaries after he delivered the 1874 Belfast Address because of his claim that matter was creative. The following is the key sentence that caused him to be accused of pantheism:

By an intellectual necessity I cross the boundary of the experimental evidence, and discern in that Matter which we, in our ignorance of its latent powers, and notwithstanding our professed reverence for its Creator, have hitherto covered with opprobrium, the promise and potency of all terrestrial Life.⁵¹³

Tyndall claimed that the powers that derived life were properties of matter rather than properties of other agencies. Thus, he did not call matter a dead substance, but instead envisioned it as a living thing. John Masson (?–1927), a Scottish Classicist who is mentioned by Barton, pointed out: ‘To him [Lucretius], matter is living. Like Tyndall, he is willing to believe that every clod of earth, every lump of stone on the street, is tingling and throbbing with life, – and potency of life. This is pantheism’.⁵¹⁴ He also reasoned that ‘[i]f matter is not created, and as Professor Tyndall also implies, a God exists, it does not seem possible to evade the conclusion that matter is eternal, and God identical with matter’ (366), and this was pantheism. Masson considered that ‘[t]he opinions expressed in the address are not inconsistent with the existence of a Creator’ (366), however, Robert Buchanan (1841–1901), an anti-religious poet and novelist, considered that Tyndall’s theory of living matter was not compatible with the concept of a supernatural Creator. Buchannan commented that Tyndall’s ‘theory of organic matter is destructive to any sort of Deism; indeed, so far as we see, it leaves no room whether for even the higher Pantheism, though it is full of that lower Pantheism which sees in every clod and stone the potency of universal life’.⁵¹⁵

Other commentators expressed similar suspicions. An anonymous writer of a report of the Belfast Meeting published in the *Wesleyan-Methodist Magazine* wrote that Tyndall’s promotion of the idea of living matter might be a ‘distinct announcement of

⁵¹³ John Tyndall, *Address*, p. 55.

⁵¹⁴ John Masson, ‘The Atomic Theory of Lucretius’, *British Quarterly Review*, 124 (1875), 335–77 (p. 371); Barton, ‘John Tyndall’, p. 116.

⁵¹⁵ Robert Buchanan, ‘Lucretius and Modern Materialism’, *New Quarterly Magazine*, 6 (1876), 1–30 (p. 30).

the broadest materialism, if not a downright materialistic pantheism'.⁵¹⁶ James McCosh (1811–1894), a Calvinist philosopher and president of the College of New Jersey who is also mentioned by Barton, commented that Tyndall 'is obliged, however, to admit a "formative power, as Fichte would call it, this structural energy ready to come into play and build the ultimate particles of matter into definite shapes"', and that 'this might seem to make him [Tyndall], like Fichte, a pantheist'.⁵¹⁷ However, Barton does not mention that McCosh quickly refuted this and regarded Tyndall as a man with no religious conviction. He wrote that Tyndall 'is not inclined to become fixed down to any religious creed' (45), and that Tyndall 'retains nothing of pantheism but its sentimentality' (45). John William Dawson (1820–1899), a Protestant geologist, considered that Tyndall's theory drove him to take up the 'ground which is actually that of the pantheists, whose doctrines he would no doubt altogether repudiate', and that Tyndall's position 'thus obliges him to oscillate between materialism and pantheism, and to present a strange aspect of inconsistency'.⁵¹⁸

As we see, these commentators considered that the concept of living matter was pantheistic, but many of them did not consider Tyndall to be a pantheist. The case of the Belfast Address has been introduced here to show that the concept of living matter itself could be considered a pantheistic doctrine by many Victorians, and those who advocated this concept could be associated with pantheism.

4.2.2 James Hinton and a Living Nature

Tyndall publicly rejected vital forces and attributed vital powers to matter as early as 1865 when his essay 'Vitality' was published. Hinton, also a scientific practitioner, had

⁵¹⁶ Anon, 'The British Association for the Advancement of Science: Notes of the Meeting Held in Belfast, August, 1874', in *Wesleyan-Methodist Magazine*, 20 (1874), 929–35 (p. 931).

⁵¹⁷ James McCosh, *Ideas in Nature Overlooked by Dr. Tyndall* (New York: Robert Carter, 1875), p. 45; Barton, 'John Tyndall', p. 116.

⁵¹⁸ John William Dawson, *Nature and the Bible* (New York: Robert Carter and Brothers: 1875), p. 196.

declared similar views earlier and more religiously than Tyndall. His *Men and His Dwelling Place* (1859) was based on the doctrine that nature was alive and there was no dead matter. In his later book *Life in Nature* (1862), he aimed to use science to support his doctrine. Tyndall once told Hinton: 'you have the physical mind'.⁵¹⁹ Hinton's uses of the science of matter were mainly presented in his book *Life in Nature* (1862). He was among the first generation in Victorian Britain who inferred a substantial unity between the organic and the inorganic worlds from chemical atomism. Like Tyndall, Hinton first interpreted chemical atomism as supporting the view that the organic world was composed of the same matter and forces as the inorganic world. In this view, nature was seen as a continuum. Hinton went further than Tyndall and inferred from this view his pantheistic idea that inorganic nature was also alive and that the whole of nature was 'a conscious existence' manifesting 'a Higher Intelligence'.⁵²⁰

Hinton began his argument with the claim that vital forces were not new forces but the forces that ran the inorganic world. He mentioned Grove's *Correlation of Physical Forces* and Carpenter's 'Correlation of the Physical and the Vital Forces' (1850) as supporting his argument.⁵²¹ He wrote that '[w]e do not require, for organic life, to assume any new or special power; the common and all-pervading powers of nature are enough' (145). He conceived life as 'a process, or a mode of operation, of the same powers which we recognize under other names, as magnetism, electricity, or chemical affinity' (140). He also credited this idea to Coleridge who expressed this view of life in *Hints towards the Formation of a more Comprehensive Theory of Life* (1848).⁵²² From this anti-vitalism position, Hinton brought out his pantheistic view: 'If it be proved that the forces and laws of the inorganic world constitute all that is to be found of physical

⁵¹⁹ Ellis, *Hinton*, p. xii.

⁵²⁰ Hinton, *Life*, pp. 200 and 153. The numbers in the brackets after quotations from Hinton in this section are page numbers of this book.

⁵²¹ *Ibid.*, pp. 26 and 27.

⁵²² Samuel Taylor Coleridge, *Hints towards the Formation of a more Comprehensive Theory of Life* (London: John Churchill, 1848).

power or principle in organic life, then does not the conclusion follow that the apparently inorganic world is truly living too?'.⁵²³ Hinton considered that the question, 'How can the living be derived from that which is not living?' (146), was not solved by the doctrine of the correlation of forces. In order to solve this problem, he sought help from the new atomism. He claimed that '[n]ature is universally living is a position that has often been maintained; but evidence of its truth could not be given until various physiological problems had been at least approximately solved' (146). He also considered that it was the contemporary science based on the new atomism that solved 'various physiological problems'.

As a surgeon who was familiar with physiology, Hinton separated vital phenomena into two categories: function and nutrition. He made the definitions that '[t]he actions of a living body are called its "functions"' (4), and that the growth and decay of a living body is called its nutrition. Both were reduced to chemical changes, and the concept of external vital force was rejected. He wrote that '[t]he vital force is not the agent in the functions; they are effects of the chemical force' (33) and that nutrition 'is always dependent on Chemical Change' (vi). In his discussion of functions, Hinton gave human anatomical examples. He attached two pictures of hand nerves drawn separately by Swiss anatomist Albert von Kölliker (1817–1905) and German anatomist Rudolf Wagner (1805–1864), and introduced the consensus among anatomists that '[t]he nerve force originates in a particular chemical change' and that nerve force was suspected to be 'like the galvanic'.⁵²⁴ He also attached pictures of muscle fibres from English anatomist William Bowman (1816–1892) and pointed out that 'chemical action is one of the best known sources of motor force, and one of the most frequently employed'.⁵²⁵ He considered it suitable to see these functions as 'result[s] from chemical changes within it [the body]' (38).

In his discussion of nutrition, Hinton pointed out that the body was nourished by surrounding inorganic substances, and that there did not seem to be any new elements

⁵²³ Hinton, *Life*, p. 146.

⁵²⁴ *Ibid.*, pp. 23 and 24.

⁵²⁵ *Ibid.*, pp. 27–29.

appearing in organic substances. The most difficult part for Hinton was to explain how inorganic substances were organised into organic substances without using the concept of external vital force. He claimed that it was 'the mode in which its [a body's] elements are arranged' (41) that was responsible for the processes of organisation. He demonstrated this with the example of an egg albumen. Hinton pointed out that according to the current chemical knowledge, the albumen 'consists mainly of three gases (hydrogen, oxygen, and nitrogen), and one solid (carbon), with small quantities of other bodies, of which the chief are sulphur, phosphorus, and lime' (40). When '[e]xposed to air, albumen decays; the carbon unites with oxygen and forms water, and with nitrogen to form ammonia. Similarly, the sulphur and phosphorus select some other ingredients of the albumen, or of the atmosphere, to unite with them into simpler compounds' (40–41). The album would become an organic substance when the process was complete, and muscles and nerves would appear. Hinton considered that this process demonstrated that the idea that inorganic substances could become organic substances and ultimately formed functional parts of the body through chemical changes was intelligible.

From these discussions, Hinton proposed the hypothesis: 'That which constitutes matter living, in the ordinary sense, is a certain arrangement of its elements' (146). He pointed out that a common understanding at the time he wrote the book was that 'the organic world is distinguished at once by a special eminence over the rest of nature, and by a special mystery' (196). He argued that with his hypothesis, the organic world did not have a special eminence over the inorganic world, and thus 'Life presents to us no mystery' (197). He suggested: 'we must, in the present state of our knowledge, consider the living body, like all other material substances, to consist of "atoms"—minute particles, beyond which we cannot conceive division to be carried. These atoms, by their arrangement, constitute the organic matter' (146–47).

Hinton then inferred his pantheistic view that nature was alive from this hypothesis. He noticed that atoms when 'separately considered, are not organic', in other words, 'are not themselves living' (146–47). He claimed: 'The ultimate atoms of which a living body is composed are not individually possessors of life; the life is in their mutual connection' (147). Hinton considered that everything, including our bodies and

heavenly 'orbs', was 'atoms [...] in an organization of a corresponding magnitude', thus that it was intelligible to make an analogy between 'the stellar groups' and 'the forms and processes of the organic world' (149). He cited the Prussian geographer Alexander von Humboldt's (1769–1859) metaphor in *Cosmos: A Survey of the General Physical History of the Universe* (1845), according to which 'motion in every point of the vault of heaven' was the same as motion of vegetable 'in the germinating, leaf-pushing, flower-unfolding' (150–51). Hinton claimed that based on this understanding of the foundation of matter, it was intelligible to conceive a substantial and structural uniformity of nature, and that in such a view, there was no break between life and non-life. He suggested readers to consider 'Life infinite and boundless' (151–52). The universe was in this sense alive and pantheistic.

Hinton also claimed that 'our hearts' called us to see life as universal, and that the universal life in return guaranteed this sympathy.⁵²⁶ He viewed nature as 'a conscious existence' (200) manifesting 'a Higher Intelligence' (153). He considered that nature presented us 'riddles' in order to 'sport' us, that '[t]he study of Nature, revealing to us, though faintly, yet truly, traces of the laws and methods of the Highest and Universal Worker', and that 'this study has its worthy end, only when it raises us to act like Him' (154). Hinton here used rhetoric that was often seen in orthodox natural theology. Francis Bacon's similar views of God and of the meaning in studying nature were cited. In its outfit, Hinton's view looked like an orthodox natural theological view, however, it was pantheistic at its core. It was a habit of Hinton to use orthodox Christian rhetoric, as E. M. O. Ellis, Havelock Ellis's wife, pointed out: 'Hinton, in his philosophy, was always seeking to put new wine into old bottles. He wanted to use the symbolism of the Bible as the theological mind uses it, while courageously building on these beautiful symbols an entirely new meaning'.⁵²⁷

Though Hinton inferred from the new atomism a united and living nature, he kept stressing that the atomism was no more than a hypothesis. He used it to make the concept of living nature intelligible and in line with contemporary science. However, he

⁵²⁶ Ibid., p. 152.

⁵²⁷ Ellis, *Hinton*, pp. xxiii–xxiv.

considered atoms dead and that a thoroughly living nature should not have a dead foundation. Hinton claimed: 'Life on this view is not explained; it is denied. It is true that it is made universal, but in that very universality the thing itself is lost' (156). Hinton did not blame science but attributed this paradoxical situation to a false interpretation of science. He referred to his separation of phenomenon and noumenon mentioned in *Man and His Dwelling Place*. He claimed that science dealt with the phenomenal world but not the real world. In Hinton's view, it was by our defective perception that we perceived the phenomenal world as fundamentally dead, but the real world was fully alive as our religious feelings told us. Thus, Hinton claimed that only when humans falsely conceived science as a study of the real world, would they have the conclusions that the real world was dead and science was against religious feelings about the world. He believed that if people conceived scientific study in his way, then science and religion would be reconciled: religious feelings showed us the real world and science studied its defective manifestations in our perception. He exclaimed: 'It is a living world which we thus perceive under the appearance of passive forces; of chemistry and mechanism. [...] Life is universal: it only seems to be mechanical' (160). 'Life, of which the seeming life in the organic world, the seeming deadness in the inorganic, alike are the appearance' (161), and 'we have hearts and souls to know it by' (162).

With the case of Hinton, we have seen that the new atomism could constitute a double-edged sword for advocates of pantheism. Hinton used an idea implied by the new atomism, that all things were united in the sense that they shared the same material base, to dismiss the gap between living and dead things, as well as between man and nature. By dismissing these gaps, he argued for his pantheistic doctrine that dead things were in fact alive, that there was nothing dead in nature, and that nature was thoroughly alive. However, he also knew that chemists normally did not consider atoms to be alive, and that if the fundamental part of the world was dead, then his pantheistic idea of a living nature was threatened. In order to solve this problem, he claimed that the new atomism was not the ultimate theory of matter.

4.2.3 James Allanson Picton and the Mystery of Matter

Picton, like Hinton, used the term 'life' to address the universe and God. Phrases like 'Eternal Life' and 'Universal Life' were frequently used by Picton in his writings.⁵²⁸ However, unlike Hinton, Picton did not make the concept of life significant in his pantheism, and the dualism of life and death was not Picton's major concern. Picton's reasons for using 'life' to address the universe and God were that it was emotionally 'impossible to believe [...] the idea of a Universe dead and cold at the heart', and that 'spontaneity', which was normally attributed to life, 'must necessarily be attributed to the source and substance of all things'.⁵²⁹ Thus, rather than to refer to the universe, or to God, as a dead being, he chose to call it a life. His major concern was to prove the unity of the world and the unknowability of its reality. As a reminder, the basic doctrine of Picton's pantheism was that material and spiritual phenomena were all manifestations of a mysterious and united reality, which could be called God. Picton used the science of matter to support his monistic view of the world as well as two properties of reality—unity and unknowability. These uses of science can be found mainly in his books *The Mystery of Matter* (1873) and *The Religion of the Universe* (1904). Picton's first work on pantheism was written roughly 10 years after Hinton's. He therefore benefited from a wider choice of scientific ideas to support his views. Indeed, over the course of these 10 years, Tyndall and Huxley had become famous among the general public and had formulated several radical views that Picton could use.

Picton was against the common dualism of material and spiritual substances. In his pantheism, there was only one substance of which all things were manifestations. He claimed that modern science was proving that his monistic view of substance was much more reasonable than the dualism of matter and spirit:

in modern times science and philosophy combine to make impossible that old sword-and-sheath, or shell-and-kernel theory of the world, by which men once

⁵²⁸ For example, see Picton, *Mystery*, pp. 61–62.

⁵²⁹ Picton, *Mystery*, pp. 108 and 112. The numbers in the brackets after quotations from Picton in this section are page numbers of this book.

expressed the unfathomable contrast of “within and without.” The intimacy of relationship which scientific research establishes between soul and body is such, that one feels relationship to be hardly the word to express what looks much more like identity. And when once this is realised, it becomes impossible henceforward to find satisfaction in the ordinary dualistic notion of two ultimate substances fundamentally and essentially distinct. (12)

Huxley’s lecture ‘The Physical Basis of Life’ was used by Picton to support his views. Picton wrote: ‘he [Huxley] told us that all organisations [...] are all composed mainly of one sort of matter which in all cases, even those at the extremity of the scale, is almost identical in composition. And the one other fact on which he insisted was, that every living action [...] is accompanied by, and in a sense finds an equivalent expression in, a definite waste or disintegration of material tissue’ (14). Picton pointed out that it seemed certain (at the time) that mental activities would always accompany ‘molecular agitation, producing definite chemical results’ (14) in the brain, and that ‘thought and love and indignation and fear, which in one direction find their expression in majestic eloquence, should in another direction find their expression in the production of carbonic acid urea and water’ (15). By presenting these notions, he claimed that ‘[s]uch a union as this between soul and body seemed logically to amount to identity’ (15). He quoted Huxley’s words: ‘sooner or later we shall arrive at a mechanical expression of consciousness, just as we have arrived at a mechanical equivalent of heat’.⁵³⁰

Picton did not view the mechanical explanation of material and mental phenomena as ultimately true. The part of Huxley’s theory that Picton regarded as most valuable was the idea of the unity of the mental and the material. Picton wrote: ‘it matters not whether the theories referred to are true or not. They assert, at any rate, that unity of the world, which in some form or other must ultimately be accepted; and at which, in any form, believers in two substances must stumble’ (19–20). Picton also saw Huxley’s theory as an example of a pantheistic awakening of his time through science. He claimed that ‘the discoveries of modern science have given so grand an awakening’ to

⁵³⁰ Picton, *Mystery*, p. 16; T. Huxley, *Lay Sermons*, p. 372.

the ‘sense of a comprehensive unity’, and that ‘[w]hoever then contributes a side light, a shade of thought, a suggestive word on the mystery of matter, is doing what he can to hasten that day when “God shall be all in all”’ (20). As C. B. Upton pointed out in his review of Picton’s work, Picton treated Huxley as a ‘chief intellectual pioneer’ of his pantheism.⁵³¹

Chemical atomism was specially discussed by Picton. He tried to reconcile atomism with his view of reality. He saw atomism as a useful theory providing ‘a cause, out of which we can rationally educe the effect’ (36), but not as a truth about ultimate reality. Picton did not believe that knowledge of reality in itself beyond empirical experience was possible. He thus considered that ultimate truth was not attainable through the empirical sciences, and therefore did not treat atomism as a representation of the truth. Picton noted that atomic materialism, which asserted that atoms were the ultimate reality of the world, was in conflict with his position, and he was worried about the pervading view that scientific atomism entailed atomic materialism. He argued against this view: ‘physical philosophers propose to reduce all our perceptions, and everything else about us, to a system of molecular mechanics. [...] The method ought to be materialistic [...] for that is only another name for precise observation and accurate inference. But [...] to accuse molecular mechanics of a materialistic tendency is about as reasonable as it would have been to accuse the first aeronaut who ventured to explore the clouds, of a voyage into outer darkness’ (32–33). In other words, such an accusation was absurd for Picton.

A pessimistic induction was put forth by Picton to further convince readers not to treat atoms as ultimate beings.⁵³² He pointed out that scientific practitioners’ theories of matter had changed over time, that former theories were usually falsified by later theories, and that contemporary theories might also end up being contradicted. He first

⁵³¹ C. B. Upton, ‘Christian Pantheism’, *Theological Review*, 10 (1873), 575–98 (p. 581).

⁵³² The phrase ‘pessimistic induction’ is used in philosophical discussions concerning scientific realism. See Anjan Chakravartty, ‘Scientific Realism’, in *SEP* <<https://plato.stanford.edu/>> [accessed 20 August 2018].

gave the example of Descartes's theory of matter, in which: 'matter and space are inseparable' and the universe composed 'of continuous and infinitely extended matter' (45). He then pointed out that in modern atomism, which was '[t]he more favoured doctrine in modern times', 'matter is ultimately constituted of minute indivisible particles, which are separated one from another by spaces'.⁵³³ He also noted that some modern scientific practitioners such as 'Faraday' suggested that atoms were 'capable of wholly interpenetrating one another, and [...] thus producing an entirely new mode of force, or, in common language, a new substance'.⁵³⁴ With these examples, Picton claimed that 'its [physical research] history has been to a large extent a process of correction, ever approximating to, but, in the nature of the case, incapable of attaining absolute truth' (38).

Modern science was viewed by Picton as an attempt to find the ultimate unity of the world. Chemical atomism was one of these attempts, and Picton considered that it helped people to better know and to better worship the mysterious reality of the world. Picton claimed that 'surely there is [...] a larger joy in the feeling of a fresh approximation towards the inconceivable because infinity unity, which constitutes the maze of worlds a universe' (101).⁵³⁵ Thus, although ultimate reality was not attained by physical science, Picton still considered that the practice of finding unity 'exercised over our souls is the inmost secret of the joy we feel in all our largest contemplations of the world' (103), and that '[s]ubstance may be unsearchable; and the divine universe is unspeakable; but the indefeasible certainty of their reality is our nearest intellectual approach to the One Eternal who draws us for ever with a resistless attraction to worship' (103).

The case of Picton shows that scientific practitioners' mechanical explanations of mental phenomena could be used to support monistic view of mind and matter against dualistic views. The atomic theory of matter allowed Picton to insist on the idea of the unity of reality. But he also noticed that atomic materialism, in which the foundation of

⁵³³ Picton, *Mystery*, pp. 46–47.

⁵³⁴ *Ibid.*, p. 50.

⁵³⁵ *Ibid.*, p. 101.

the world was not united but composed of discrete parts, could be inferred from chemical atomism, and that this went against his pantheism as God could hardly be described as a discrete reality. He addressed this problem by arguing that the current atomic theory of matter was not the definitive theory of matter, and that the ultimate nature of matter was unknowable.

4.2.4 Constance Plumptre and Anti-Creationism and the Unity of Man and the Universe

Plumptre's ontological view of the world was similar to Picton's. She also viewed the world as the manifestation of a mysterious and united reality. Plumptre used theories of matter mainly to support two doctrines within her vision of pantheism. The first was a doctrine of anti-creationism according to which nothing was created from nothing, there were only transformations, and the universe was eternal. The second was a doctrine of the unity of humans and the universe. These two doctrines were also held by Picton, but Plumptre used different scientific materials to support them. Plumptre developed her vision of science and pantheism mainly in the second volume of her *General Sketches of the History of Pantheism* (1879), which was published about six years after Picton's *Mystery of Matter*. Several new sources such as Tyndall's 1874 Belfast Address and more works on spectrum analysis had become available during these years.

The doctrine of the indestructibility of matter implied in chemical atomism was used by Plumptre to support her anti-creationism. For Plumptre, pantheism was different from monotheism in its denial of 'the dualistic doctrine of a personal extra-mundane God on the one hand, and a perishable universe on the other'.⁵³⁶ The universe in her view contained only transformations and was eternal rather than perishable. Plumptre pointed out that the view of matter as indestructible was a 'thing under the sun' (269) (which meant a doctrine that was widely talked about and accepted) in the late 1870s.

⁵³⁶ Plumptre, *General*, II, p. 280. The numbers in the brackets after quotations from Plumptre in this section are page numbers of this volume.

She interpreted the doctrine of ‘the indestructibility of Matter’ as asserting that ‘[m]atter decomposes and recombines. As it was in the beginning, so it is now’ (269). Using atomic terminologies, she wrote: ‘Every atom of the universe continues to exist, and must exist as in the beginning’ (269). She thus claimed that this doctrine implied that ‘there has been no creation, only a transformation’ (269). Draper’s description of the circulation of a particle of water in *The Intellectual Development of Europe* was used by Plumtre as an example how matter changed appearance without changing its essence. She quoted a large paragraph from Draper’s book and treated it as a part of her reasoning. In the end of the quotation, Draper wrote: ‘Not only have they [the elements of a particle of water] not been annihilated, they have not even been changed; and in a period of time, long or short, they find their way as water back again to the sea from whence they came’ (270–71).

Plumtre also pictured a phoenix-like universe in line with the doctrine of the indestructibility of matter and Laplace’s nebular hypothesis. She imaged that ‘the whole [universe] [...] originated from a nebulous condition, so it is destined to return into a similar nebulous condition, to be built again, perchance, [...] into fresh forms of Suns and Planets and Satellites’ (293). Spectrum analysis was used by Plumtre to illustrate that it was proper to imagine stars as suns and planets as earths. She pointed out that ‘[s]pectrum analysis has shown that certain of the stars contain substances identical with those contained in our Sun as well as in our own little earth’ (289). She used the known elements of Sirius, Vega, Pollux, and Aldebaran as examples. Plumtre imagined that all beings in the universe were in ‘endless revolutions of birth and decay’ (295), and that the totality of substance of the universe did not change but only became different forms.

Tyndall’s words in the 1874 Belfast Address on the uncreatedness of organic matter and on the structural power of matter were also quoted by Plumtre to support her view that there was no creation but only transformations. Plumtre wrote: ‘As Professor Tyndall says:—“The vegetable world, though drawing almost all its nutriment from invisible sources, was proved incompetent to generate anew either matter or force. [...] The animal world was proved to be equally uncreative. [...] The activity of each animal as a whole was proved to be the transferred activity of its molecules”’ (269).

She inferred that ‘Changes, and the accompanying transformations of forces, are everywhere in progress. [...] But all these so-wonderful changes are but changes of form alone, and not of substance’ (269).

The unity of human beings and the universe was considered by Plumptre an essential and exclusive doctrine of Pantheism. She quoted the Anglican clergymen Henry Liddon’s (1829–1890) description of pantheism from *Some Elements of Religion* (1872): ‘the great attraction and strength of Pantheism lies in the satisfaction which it professes to offer to one very deep and legitimate aspiration; it endeavours to assure man of his real union with the source of his own and the universal life. It is this profound idea, this most fascinating allurements, that can alone explain the empire’ (277). She considered this description to be ‘well said’ (277). Plumptre claimed that ‘[s]cience is at last beginning to prove to us beyond the possibility of contradiction the identity of man with all other forms of existence whether organic or inorganic’ (278). She used Tyndall’s view of the uncreatedness of the organic world and the concept of protoplasm, probably taken from Huxley’s lecture, to support the unity of human beings and the universe.

In her reasoning for the unity of man and God, Plumptre first claimed that it was a ‘proved fact’ (296) that organic matter was of inorganic nature, that there was no organic substance that was not derived from the inorganic world. She quoted Tyndall’s words on the circulation of molecules between vegetables, animals, humans, and the inorganic world in the essay ‘Vitality’. She wrote: “‘We eat the vegetable,” as Professor Tyndall tells us, “and we breathe the oxygen of the air; and in our bodies the oxygen, which had been lifted from the carbon and the hydrogen by the action of the sun, again falls towards them, producing animal heat and developing animal form”” (297). Plumptre pointed out that there was no new atom created in the process of life, so ‘as Professor Tyndall has lucidly expressed it, “The animal world is, so to say, a distillation through the vegetable world from inorganic nature”” (297). She also quoted Tyndall’s words in the introduction of the *Fragments of Science*: “‘All three worlds” (the inorganic, the vegetable and animal) says Dr. Tyndall, “constitute a unity, in which I picture life as immanent everywhere”” (301).⁵³⁷

⁵³⁷ Tyndall, *Fragments of Science*, Fifth Edition, p. 351.

Plumptre then introduced the concept of Protoplasm, though she did not mention her sources. She introduced this concept roughly in the same way as Huxley did in the lecture 'The Physical Basis of Life'. She claimed that Protoplasm was found to be 'the formal basis of all life', and that 'Protoplasm, being, as it is, a combination [...] of four elements carbon, hydrogen, oxygen, and nitrogen, demonstrates to us that without the inorganic world the organic world could not have been what it is. [...] And as the organic world arises from the inorganic, in like manner, must it return into the inorganic' (298). Plumptre pointed out that all organisms would eventually die and resolve into the minerals, and that these lifeless constituents would 'at some subsequent period to be built up again into fresh forms of vegetable, animal, or man' (298). Plumptre considered these verified the ancient hypotheses of 'Transmigration and Metamorphosis' (298) in oriental and Greek pantheistic philosophies. By using Tyndall's and Huxley's evidence that all existences in nature were united in substance, she concluded that human beings as existences in nature were united with everything else in substance.

Plumptre treated the relationship between mind and matter in a similar way as Tyndall. She held as certain that 'Matter influences Mind, as Mind, in its turn, re-acts upon Matter' (298), and she believed that the scientific knowledge of their mutual influences was possible. But like Tyndall, she considered their ultimate relation 'incompressible' (298). She claimed: 'All Matter and all Mind are but two outer aspects of the one comprehensive Reality which underlies as it includes all external phenomena' (299).

Plumptre noted that her view could be seen as similar to materialism. She quoted Tyndall again and stressed in the same way as he did that she was 'no materialist in the ordinary sense of that word' (299). She claimed that she did not believe 'that a mere mechanical self-arrangement of perishable matter is sufficient to account for the origin of the universe' (299). She believed that fundamental reality was incomprehensible, and that 'there is a Unity which runs through Nature, displaying itself alike in mineral, plant, and animal, connecting the organic world with the inorganic' (299). Tyndall viewed matter as ultimately mysterious, and Plumptre quoted Tyndall's words from the Introduction of *Fragments of Science*: "'When I attempt to give the power which I see manifested in the Universe an objective form," says Professor Tyndall, "personal or

otherwise, it slips away from me, declining all intellectual manipulation. I dare not, save poetically, use the pronoun "He," regarding it; I dare not call it a "Mind;" I refuse to call it even a "Cause." Its mystery overshadows me; but it remains a mystery" (312).⁵³⁸ Plumptre interpreted this as a 'description of God' which had 'more real religion, more reverent humanity' than any other 'anthropomorphic concept' of God (313).

In the case of Plumptre, we see that she used the idea of the indestructibility of matter, the idea of the uncreatedness of the organic world, and the structural power of matter to argue against creationism and supernatural interference, and to support her pantheistic images of God, the world, and man. Plumptre did not reduce mind to matter but saw them as two aspects of a united and mysterious reality. It can be inferred that humans were united with the universe in both mind and body in her pantheism, though she only used the science of matter to prove that man was united with the universe in body. She was also concerned about materialism and distanced herself from it, as it implied a cold and dead world which could hardly be called God.

4.3 Conclusion

The idea of the uniformity of the universe could be easily inferred from nineteenth-century chemical atomism. All kinds of substances were represented by billiard-ball elements and their compounds, and chemists were discussing confidently and quantitatively about reactions of elements and compounds. All substances seemed to share the same elemental base, even when they looked very different. Many scientific practitioners, among whom Hinton, Tyndall, and Huxley I have introduced in this chapter, inferred a united view of the universe from chemical atomism. They used chemical knowledge to argue that the realms that were commonly conceived as essentially different, such as the organic and the inorganic, vegetable and animal, and animal and man, were essentially the same in the sense that they shared the same substantial base and the same set of laws. Huxley also introduced the public to the cellular micro-structure of organisms and claimed that all organisms shared the same

⁵³⁸ Ibid., p. 336.

structural base. Applications of spectrum analysis demonstrated that some elements on earth could also be found in celestial bodies. These discoveries strongly implied that celestial bodies shared the same elemental base and even the same laws with beings on earth.

The all-round uniformity of the universe implied by chemical atomism could be used to support almost all religious positions. Orthodox scientific practitioners such as William Prout and P. G. Tait could interpret uniformity as a sign of the intelligent work of God. Deistic or materialistic scientific practitioners such as Tyndall and Huxley could interpret uniformity as a sign that nature was a closed system, that there was no supernatural interference. Advocates of pantheism favoured those materialistic interpretations more, and they added their own interpretations to make uniformity a sign of the existence of the pantheistic God. As we have seen, after arguing for the uniformity of nature through chemical, physiological, and anatomical knowledge, Hinton claimed that the uniformity of nature meant that there was no demarcation between life and death, thus, nature could be seen as thoroughly alive, and the living universe as a great life could be called God. Picton and Plumtre argued that the unity of nature had always been a core idea of pantheism while it had not in Christian monotheism, as there were many demarcations in Christian mythology, such as body and soul, man and its environment, and living spirit and dead matter. They cited Tyndall's and Huxley's views of the uniformity of nature and made the claim that scientific practitioners were increasingly supporting the doctrines of unity in pantheism against those discrete views in Christian monotheism.

It should be noted that chemical atomism could be problematic for advocates of pantheism. On the one hand, the unity of nature chemical atomism naturally supported was unity in the sense of uniformity, or of a shared material and structural base, but not in the sense of indivisibility. Atoms were pictured as discrete billiard balls, and thus, they did not form a continuum. The discrete atomic model of matter could be a potential threat to the doctrine of unity of pantheism because the model implied that the ultimate reality of the universe might be composed of numerous discrete substances rather than a single continuous substance. On the other hand, chemical atoms, although they were already seen as far more active than Newtonian

homogeneous atoms, could still be considered by the Victorians as dead machines, and thus chemical atoms could fall into the old materialism, in which there was no spirit in the universe, but only dead matter following soulless mechanisms. Such a dead universe could hardly be treated as a God. Advocates of pantheism noticed these problems, and their common stratagem was to treat chemical atomism as a mere hypothesis. They argued that chemical atomism was useful in the sense that it cultivated the idea of the unity of nature by showing that nature could be viewed as having only one material basis with no essential divisions, and they denied that atoms were ultimate particles or that chemical atomism was the final theory of matter.

The indestructibility of matter was often an unspoken belief of Victorian chemists. This idea was strengthened by the assumption that the weight of an element did not change during chemical processes. This idea was compatible with various religious positions. As I have shown in the previous chapter, Faraday, a Sandemanian, believed in this idea. Advocates of pantheism, such as Plumptre, could use this idea to argue against creationism and supernaturalism, claiming that since nothing was created or destroyed, then there was no creation *ex nihilo* and that there were no miracles. Christian monotheists, however, could still believe that it was God who had created such a closed system from nothing in the beginning, and that God could still create or destroy matter.

The idea of the structural power of matter was advocated by some radical scientific practitioners notably Hinton, Tyndall, and Huxley. They presented this idea as following naturally from chemical and physical studies of matter. As they pointed out, assumptions of active agents in nature that controlled matter were not necessary, even in the realm of life. The properties of matter themselves would possibly explain the formations of all kinds of substances, inorganic or organic. Hinton inferred from this idea that nature was thoroughly alive or active. Tyndall was accused of pantheism because he proposed in his Belfast Address the pantheist Giordano Bruno's vision of living matter. Plumptre made use of this idea to give creative power to nature, and to argue against the existence of any supernatural power. The idea of the structural power of matter could easily be associated with pantheism in Victorian Britain, as historic and

contemporary supporters of pantheism advocated it, using it against the Christian doctrines of creation and of divine interference in nature.

The scientific sources for advocates of pantheism were again mainly popular sources. Popular scientific writings and lectures of radical scientific practitioners such as Tyndall, Huxley, and Draper were particularly useful. It can be inferred that advocates of pantheism also acquired chemical knowledge from reports of chemical discoveries from various popular organs—newspapers, periodicals, pamphlets, lectures, etc. Advocates of pantheism besides Hinton, who was himself a scientific practitioner, did not use hard science sources. As far as I read, all of them did not mention famous names from the history of chemistry, such as Dalton and Berzelius.

5

Pantheistic Uses of the Science of Evolution

Evolution was one of the major topics of science and public debate in the second half of the nineteenth century in Britain. The term ‘evolution’ was used to indicate development, natural change, organic transmutation, and usually, though not necessarily, progress. The idea of evolution was applied by many Victorian scientific practitioners and philosophers to almost all realms of the world—the cosmos, the earth, the inorganic environment, the organic world, the human body, human mentality, human society, and human morality. The phrase ‘the science of evolution’ in this chapter is used loosely, denoting the developmental theories of scientific practitioners and evolutionary philosophers, rather than only denoting formally scientific evolutionary theories, such as Charles Darwin’s theory of natural selection. The evolutionary view of the world was widely accepted in Britain by the 1870s. Many Victorians tended to believe that most things in the world came into being through long-term natural changes rather than through God’s direct creation. The old static worldview, in which the world was what it was at the time God created it, was thoroughly abandoned. Inspired by the great advances in technology and living conditions, many Victorians also believed that the world was progressing, or changing towards better states. Their evolutionary views of the world were thus often progressive, asserting that progress was a law of evolution.

Victorian advocates of pantheism usually found the idea of evolution, the idea of progress, scientific theories of evolution, and radical evolutionary philosophies very useful in supporting their pantheistic ideas. In this chapter, I bring in four advocates—Hunt, Picton, Plumtre, and Barratt—to demonstrate various pantheistic uses of the science of evolution. As we shall see, Hunt considered that the theory of evolution proved that there was an immanent deity in nature who made and exerted such a unifying plan. Picton claimed that he had built his pantheism upon the philosophy of the most famous evolutionary philosopher Herbert Spencer, and he applied the theory

of evolution in support of his pantheistic ethics, his idea of universal consciousness, and his view of pantheism as the final evolution of religion. Plumtre used the nebular hypothesis, which was a common component of the evolutionary worldview, to argue against the Christian doctrine of the supernatural creation of the universe, and she also used German Darwinian and monist Ernst Haeckel's interpretation of the theory of evolution to support her monism. She saw Spencer as one of the greatest philosophers who envisaged pantheism as the final evolution of religion. Finally, Barratt formulated an evolutionary ethics. He used the theory of evolution to support his view of universal consciousness and his view that pantheism was the next step of religious evolution.

This chapter begins with an introduction of the general background of the ideas of evolution and progress and of the evolutionary theories that interested advocates of pantheism. The two most cited evolutionary philosophers among advocates of pantheism—Spencer and Haeckel—are introduced separately. I then discuss the famous Cambridge geologist Adam Sedgwick's criticism of *Vestiges of the Natural History of Creation* (1844) for the problem of pantheism, and I also discuss the accusations of pantheism made against Spencer by his reviewers. These two cases show how evolutionary theory itself and evolutionary philosophers could be seen as pantheistic by non-advocates of and even critics of pantheism. After introducing these backgrounds, I give accounts of the uses of evolutionary theories and philosophies by the four advocates of pantheism separately.

5.1 The Science and Philosophy of Evolution

Advocates of pantheism were interested in the general ideas of evolution and progress, and in several theories of evolution concerning the nebular origin of the universe, the geological history of the earth, the transmutation of species, and the natural origins of ethics and religion. The idea of evolution was gradually applied to almost all intellectual fields in the late nineteenth century, though not all theories of evolution interested advocates of pantheism. For example, they seldom talked about technical details, such as the mechanism of species variation and the branching tree of life, and they also seldom talked about the applications of the ideas of evolution and progress in other

fields such as politics, economics, art, and literature. Thus, this section focuses more on the above mentioned evolutionary ideas and theories that interested advocates of pantheism. The first part is an overarching introduction of the general background of relevant ideas and theories, the second and the third parts are introductions of Spencer's and Haeckel's evolutionary philosophies, and the fourth and the fifth parts are accounts of Sedgwick's criticism of pantheism and of the accusations of pantheism made against Spencer.

5.1.1 The General Background

The idea of evolution in the nineteenth century was intertwined with the idea of progress. Both ideas were central to the evolutionary worldview at the time. Evolutionary biologists such as the central figure Charles Darwin and his so-called bulldog Thomas Huxley usually used the concept of evolution to denote natural and successive processes and used the concept of progress to denote improving processes. From their viewpoints, evolution was not necessarily progressive while progress was not necessarily natural or successive. By contrast, these two terms were used almost as synonyms in the public and by many evolutionary philosophers, notably Herbert Spencer.

Progress was an important theme of European philosophy in the eighteenth and the nineteenth centuries. Many thinkers, such as Immanuel Kant (1724–1804), David Hume (1711–1776), Adam Smith (1723–1790), G. W. F. Hegel (1770–1831), Auguste Comte, John Stuart Mill, Karl Marx (1818–1883), and Herbert Spencer, were inspired by the intellectual advancements of the Enlightenment and wrote on progress.⁵³⁹ Some of them, including Kant, Comte, Mill, and Spencer, expressed their belief in the progress of humanity, claiming that humanity improved throughout history and would keep improving in the future. The fast advancements and applications of technology, such as the railway and telegraph in Victorian Britain, also enhanced people's belief in progress.

⁵³⁹ Margaret Meek Lange, 'Progress', in *SEP* <<https://plato.stanford.edu/>> [accessed 12 August 2018].

It was easy for the Victorians to see signs of progress in daily life. The concept of progress gave rise to many philosophical controversies. As Margaret Meek Lange summarises, progressive philosophers often disagreed about the definition of progress, the cause of progress, and the evidence of progress.⁵⁴⁰ Yet many thinkers including most pantheistic figures in this chapter did not speculate deep into the philosophical problems of the concept of progress. They usually used 'progress' to denote improvement in a common-sense manner.

The term 'evolution' was brought into wider usage by Spencer in the 1850s.⁵⁴¹ In this decade, many progressive thinkers gathered around the radical *Westminster Review*, promoting naturalistic philosophy and advocating progress as a law of nature. The term 'evolution' was redefined by Herbert Spencer in this decade to denote a naturalistic, successive, and progressive process. Before the second half of the nineteenth century, the term 'evolution' was mostly used in scientific contexts to describe the development of embryos.⁵⁴² Embryological development was a progressive process from simple to complex and from homogeneous to heterogeneous. Herbert Spencer proposed in his 1857 essay 'Progress: Its Laws and Cause': 'the development of a seed into a tree, or an ovum into an animal, constitute an advance from homogeneity of structure to heterogeneity of structure. [...] Now, we propose in the first place to show, that this law of organic progress is the law of all progress. Whether it be in the development of the Earth, in the development of Life upon its surface, in the development of Society, of Government, of Manufactures, of Commerce, of Language, Literature, Science, Art, this same evolution of the simple into the complex, through a process of continuous differentiation, holds throughout'.⁵⁴³ Spencer proposed to apply 'evolution' to all

⁵⁴⁰ Lange, 'Progress'.

⁵⁴¹ See Peter J. Bowler's account of the idea of evolution in his *Evolution: The History of an Idea* (Berkeley: University of California Press, 1984), p. 8.

⁵⁴² Phillip Sloan, 'The Concept of Evolution to 1872', in *SEP* <<https://plato.stanford.edu/>> [accessed 12 August 2018].

⁵⁴³ Herbert Spencer, 'Progress: Its Laws and Cause', *Westminster Review*, 67 (1857), 445–85 (p. 446).

natural and human developments. He also claimed in this essay that progress was an eternal status of nature including human constitutions. Nature, including man, was progressing towards more advanced states. Spencer gave a moral assertion that the more advanced a thing was the more beneficial it was for man.⁵⁴⁴ The term 'evolution', when first introduced into the wider context, thus possessed a strong sense of progress.

Darwin did not use the term 'evolution' to denote his developmental theory of species in his famous *On the Origin of Species* (1859). It was not until his 1871 publication, *The Descent of Man*, that he started to use the term.⁵⁴⁵ He rather used the terms 'modification' and 'change' to denote species transmutation.⁵⁴⁶ Differently from Spencer, Darwin did not consider the transmutation of species progressive.⁵⁴⁷ The mechanism of species transmutation he proposed—natural selection on random variations—did not guarantee that the developmental process of species was progressive. Variation was random with no progressive purpose, and nature did not always preserve more complex organisms. A natural disaster could wipe out complex organisms while leaving only single-cell organisms alive. Nevertheless, as the term 'evolution' was widely associated with 'progress', when the Victorians mentioned 'evolution', they usually also meant 'progress', and Darwin was treated as a high-priest of the 'cult of progress'.⁵⁴⁸

The acceptance and application of the idea of evolution arrived at different times in different scientific disciplines. In the beginning of the Victorian era, the developmental view of the cosmos and the earth was already widely accepted by British Christian

⁵⁴⁴ Bowler, *Evolution*, p. 8.

⁵⁴⁵ Sloan, 'Evolution'.

⁵⁴⁶ For example, see Charles Darwin, *On the Origin of Species* (London: John Murray, 1859), p. 8.

⁵⁴⁷ James A. Secord, *Victorian Sensation* (Chicago: The University of Chicago Press, 2000), pp. 507–10; Michael W. Taylor, *The Philosophy of Herbert Spencer* (London: Continuum International Publishing Group, 2007), p. 74.

⁵⁴⁸ Martin Fichman, *Evolutionary Theory and Victorian Culture* (New York: Humanity Books, 2002), p. 10.

geologists and astronomers. Scientific practitioners accepted that the current forms of the cosmos and the earth were not what they were like when God created the universe. There were two general theories of development that were popularly used by early Victorian thinkers—the nebular hypothesis and the geological history of the earth, and both theories were also popularly used by later thinkers in their evolutionary syntheses, such as the writer and publisher Robert Chambers (1802–1871) in his sensational book *Vestiges of the Natural History of Creation* (1844) and Spencer in his *First Principles of a New System of Philosophy* (1862).

The phrase ‘nebular hypothesis’ was coined by Anglican polymath William Whewell (1794–1866) in his Bridgewater treatise *On Astronomy and General Physics* (1833).⁵⁴⁹ He used this phrase to describe a theory of the origin of the solar system that combined the theory of the origin of planets of French astronomer Pierre-Simon Laplace (1749–1827) with the theory of the origin of stars of German-born English astronomer William Herschel (1738–1822). Laplace’s theory was developed in his book *Exposition of the System of the World* (1796) and his five-volume work *Celestial Mechanics* published between 1798 and 1827.⁵⁵⁰ He excluded the assumption of God and based his theory on Newton’s laws of physics. Laplace speculated that the sun had an extended hot atmosphere in primitive time, that it rotated and condensed into several rings, and that these rings condensed into planets and their satellites. Herschel developed his theory in his papers ‘On Nebulous Stars, Properly So Called’ (1791) and ‘Astronomical Observations Relating to the Construction of the Heaven’ (1811).⁵⁵¹ Herschel observed

⁵⁴⁹ Secord, *Sensation*, p. 57; William Whewell, *Astronomy and General Physics* (London: William Pickering, 1833), p. xiv.

⁵⁵⁰ Stephen G. Brush, *A History of Modern Planetary Physics—Nebulous Earth—The origin of the Solar System and the Core of the Earth* (Cambridge: Cambridge University Press, 1996), p. 20. Also see Gerald James Whitrow, ‘Pierre-Simon, marquis de Laplace’, in *Encyclopaedia Britannica* <<https://www.britannica.com>> [accessed 12 August 2018].

⁵⁵¹ William Herschel, ‘On Nebulous Stars’, *Philosophical Transaction*, 81 (1791), 71–88; William Herschel, ‘Astronomical Observations Relating to the Construction of the Heaven’, *Philosophical Transaction*, 101 (1811), 269–345.

nebulae and stars within them with the aid of his telescopes. He proposed that stars might have originated from condensations that happened within nebulae, and he implied that our sun was once in a nebulous state.⁵⁵² Whewell considered that these theories could be combined to offer a cosmic history, in which our sun and our whole system were once a cloud of matter which, under the effects of the laws of nature, gradually rotated, condensed, and cooled into the current state.⁵⁵³ As Simon Schaffer points out, the hypothesis became important among Victorian thinkers through works of the economist and astronomer John Pringle Nichol (1804–1859), and became widely known in the public through Robert Chambers' *Vestiges* (1844).⁵⁵⁴

The changing view of the earth was widely accepted in Christendom since ancient time. The Bible recorded that God created the earth through several steps and several days. Geological strata demonstrated that there were large changes of terrain in the history of the earth. It was common among Christian thinkers to explain large changes of terrain by catastrophes casted by God. This catastrophism was adopted by seventeenth-and-eighteenth-century mechanical philosophers René Descartes (1596–1650), Thomas Burnet (1635–1715), and William Whiston (1667–1752), as well as by early-nineteenth-century geologists such as Georges Cuvier (1769–1832) and Adam Sedgwick.⁵⁵⁵ There was also a uniformitarian tradition among European thinkers who explained terrestrial changes with natural mechanisms, such as volcano, earthquake, and erosion, rather than supernatural catastrophes. James Hutton (1726–1797), John Playfair (1748–1819), and Charles Lyell (1797–1875) were famous eighteenth-century

⁵⁵² Michael Hoskin, 'Herschel, William (1738–1822)', in *ODNB* <<https://www.oxforddnb.com/>> [accessed 12 August 2018].

⁵⁵³ Whewell, *Astronomy*, pp. 181–87.

⁵⁵⁴ Simon Schaffer, 'The Nebular Hypothesis and the Science of Progress' in *History, Humanity and Evolution*, ed. by James R. Moore (Cambridge: Cambridge University Press, 1989), pp. 131–64 (p. 134).

⁵⁵⁵ Bowler, *Evolution*, pp. 31–32

and early-nineteenth-century advocates of uniformitarianism in Britain.⁵⁵⁶ The geological time preceding humankind was usually extended beyond a few days to thousands of years or to a million years.⁵⁵⁷ We can see a somewhat standard expression of the developmental view of the earth in the 1830s in William Buckland's Bridgewater treatise *Geology and Mineralogy Considered with Reference to Natural Theology* (1836). As Jonathan Topham points out, the Bridgewater treatises written by prominent scientific practitioners and clergymen bore the purpose of providing safe science for society.⁵⁵⁸ Buckland claimed: 'Geology has already proved by physical evidence, that the surface of the globe has not existed in its actual state for eternity, but has advanced through a series of creative operations, succeeding one another at long and definite intervals of time'.⁵⁵⁹

While the changing view of the cosmos and the earth was widely accepted in the 1830s, the changing view of life was not accepted by most British biologists. Species were generally believed to be fixed and were seen as never having changed after their creation by God. Palaeontologists, such as William Buckland (1784–1856) and Adam Sedgwick, were fully aware of the appearance and disappearance of species shown in fossil records, and they claimed that God successively created and destroyed species at the beginning and the end of each geological era.⁵⁶⁰

The developmental view of life was proposed rather speculatively in the early nineteenth centuries by French naturalists Jean-Baptiste Lamarck (1744–1829) and

⁵⁵⁶ Mott T. Greene, *Geology in the Nineteenth Century* (Ithaca: Cornell University Press, 1982), pp. 19–45.

⁵⁵⁷ Dennis R. Dean, *James Hutton and the History of Geology* (Ithaca: Cornell University Press, 1992), p. 275.

⁵⁵⁸ Jonathan Topham, 'Science and Popular Education in the 1830s: The Role of the *Bridgewater Treatises*', *BJHS*, 25 (1992), 397–430.

⁵⁵⁹ William Buckland, *Geology and Mineralogy*, Second Edition, 2 vols (London: William Pickering, 1837), I, pp. 10–11.

⁵⁶⁰ Edward Larson, *Evolution: The Remarkable History of a Scientific Theory* (New York: The Modern Library, 2004), pp. 34–37.

Étienne Geoffroy Saint-Hilaire (1772–1844). Lamarck invented the term ‘*transformisme*’ (transformism) to denote theories of species transmutation in the scientific literature.⁵⁶¹ He also gave a thoroughly naturalistic account of the origin of species based on species transmutation in *Philosophie Zoologique* (1809). In France, transformism was also defended by Geoffroy Saint-Hilaire. However, it encountered a formidable opponent in Cuvier, who dominated the French scientific community. The Lamarckian theory of species transmutation was marginalised in France due to a lack of sufficient scientific evidence to counter Cuvier’s authority.

In Britain, the idea was also marginalised, but was not totally disregarded. As Darwin discussed at the start of the fourth edition of *On the Origin of Species* (1866), several people had discussed the idea of species transmutation in Britain over the preceding decades, such as Spencer, Huxley, and Joseph Dalton Hooker (1817–1911).⁵⁶² Theories of species transmutation were also discussed among working-class radicals from the 1840s.⁵⁶³ Chambers’ *Vestiges* introduced the idea of species transmutation to a wider public in Britain in 1844. The idea that humans were descended from animals was very striking for the Victorians at that time. The book was not scientifically robust, and it was soon dismissed as a popular science work by scientific practitioners, including Darwin and Huxley.⁵⁶⁴

No scientific work was considered by scientific practitioners to contain enough evidence to sustain the idea of species transmutation until Darwin’s *Origin of Species* was published in November 1859. Darwin gave detailed evidence concerning domestic and natural animals to support the variation of species and the modification of species through selective inheritance of variations. He proposed the theory he named ‘Natural Selection’ as ‘the main but not exclusive means of modification’.⁵⁶⁵ In Darwin’s theory,

⁵⁶¹ Sloan, ‘Evolution’.

⁵⁶² Darwin gave an historical sketch of the idea of species transformation in Charles Darwin, *On the Origin of Species*, Fourth Edition (London: John Murray, 1866), pp. xiii–xxi.

⁵⁶³ Secord, *Sensation*, pp. 300–2.

⁵⁶⁴ Secord, *Sensation*, pp. 434, 500, and 505.

⁵⁶⁵ Darwin, *Origin* (1859), p. 6.

the environment of a species offered limited resources, and consequently individuals of the species needed to compete for resources in order to survive and reproduce; random variations in characters between individuals caused different degrees of adaptation; the individuals that had a higher degree of adaptation would have a higher chance to reproduce and pass on their characters; in the long run, the species would be modified with characters that granted a higher degree of adaptation. Darwin intended to make this book strictly technical. He avoided discussing religious issues and cosmic stories until the last sentence of the book, where he suggested that life had begun with one or a few created life forms, and that the rest of life forms had evolved from them according to laws of nature.⁵⁶⁶

Origin of Species gave rise to a wide debate about the general idea of evolution, the idea of species transmutation, the theory of descent, and the origin of man, although the mechanism of evolution—natural selection—received little attention.⁵⁶⁷ Darwin's theory was soon identified with the term 'evolution' even though he did not use the term in this way.⁵⁶⁸ Darwin excluded progress from his theory, but people soon linked his theory with evolutionary philosophies like Spencer's. Many conservative theologians criticised the implications of the idea of species transmutation and the theory of descent for human origins. They feared that this view of life would threaten the Christian belief in the existence of soul and consequently threaten Christian morality.⁵⁶⁹ The book was generally well received among scientific practitioners, except some Christian scientific practitioners like Sedgwick, William Whewell, and St. George Mivart (1827–1900).⁵⁷⁰ As Secord points out, the book became a rallying point that assembled a group of new-generation scientific practitioners to support evolution in

⁵⁶⁶ Ibid., p. 490.

⁵⁶⁷ Bowler, *Evolution*, p. 178; also see Alvar Ellegård, *Darwin and the General Reader* (Chicago: University of Chicago Press, 1958).

⁵⁶⁸ Sloan, 'Evolution'.

⁵⁶⁹ Bowler, *Evolution*, p. 178.

⁵⁷⁰ Secord, *Sensation*, p. 511.

the public within a few months, such as Huxley, Tyndall, William Carpenter, and William Clifford (1845–1879).⁵⁷¹ Darwin's theory was in tune with their naturalism, their objective to exclude Christian authority from science, and their faith in progress.⁵⁷² The developmental view of life was soon widely accepted as more convincing than the fixed view of life among British scientific practitioners, though the mechanism of species transmutation Darwin proposed, natural selection, was less accepted.

The possibility of the animal descent of humans, including the physical body and mental and intellectual functions, was fiercely debated after the publication of *Origin*. Britain's contact with tribal human races, such as the native peoples of South America, was a factor sustaining the view of the evolution of man. Darwin was inspired by his experience with American Indians, who looked, according to him, closer to animals than Europeans.⁵⁷³ He believed that human races had a common ancestor, thus tribal races could be viewed as less evolved forms of Europeans rather than as complete other species. Darwin omitted human beings in *Origin*, but he gave his view in *The Descent of Man* published a decade later in 1871.⁵⁷⁴ The book did not attract huge attention like *Origin*, since the view of the animal ancestry of humans was not new anymore by the time. This topic had been explored by Huxley in *Man's Place in Nature* (1863), by Lyell in *Geological Evidences of the Antiquity of Man* (1863), by Alfred Russel Wallace (1823–1913) in *Contributions to the Theory of Natural Selection* (1870), and by Haeckel in *The History of Creation* (1868).⁵⁷⁵

It became a popular practice to apply the idea of evolution to humanity from the 1860s onwards, especially in studies of major social institutions such as ethics, religion,

⁵⁷¹ Secord, *Sensation*, p. 512. Greta Jones, *Social Darwinism and English Thought* (Sussex: The Harvester Press, 1980), p. 8.

⁵⁷² Bowler, *Evolution*, pp.178–79.

⁵⁷³ Robert Richards, *The Tragic Sense of Life* (Chicago: The University of Chicago Press, 2008), p. 29. Also see Greta Jones, *Social Darwinism*, pp. 140–42.

⁵⁷⁴ Bowler, *Evolution*, p. 179.

⁵⁷⁵ Sloan made this summary of the people who dealt with the animal descent of man in his account of evolution. Sloan, 'Evolution'.

art, law, and language. British travellers and missionaries, who reported their observations of primitive nations outside Europe, provided data for these syntheses. Darwin himself was a powerful advocate of evolutionary ethics—the ethics that treated ‘moral sense’ as an evolved function like other physical senses and subjected moral actions to evolutionary processes.⁵⁷⁶ The desire to seek pleasure and avoid pain as well as inheritable social instincts were usually treated by evolutionary moral philosophers as important mechanisms of moral evolution. These were well illustrated in Darwin’s *Descent of Man*.⁵⁷⁷ Darwin pointed out that some human moral instincts, such as sympathy and altruism, could be found in lower animals, such as monkeys, apes, and bees. He also evidenced that human nations had primitive states where humans’ social behaviours were more animal-like. He thus suggested to treat human morality as an evolved function. Evolutionary ethics was also proposed by Spencer in his *The Data of Ethics* (1879), by Leslie Stephen (1832–1904) in his *The Science of Ethics* (1882), and many more.⁵⁷⁸

Religion was also subjected to evolution, especially in evolutionary anthropologists’ works, such as John Ferguson McLennan’s (1827–1881) ‘The Worship of Animals and Plants’ (1869), John Lubbock’s (1834–1913) *Origin of Civilisation* (1870), and Edward Burnett Tylor’s (1832–1917) *Primitive Culture* (1871).⁵⁷⁹ As George W. Stocking points out, these British anthropologists mainly concerned the intellectual aspect of religion while left out the practical aspect, thus, their theories were mainly theories of the evolution of religious ideas.⁵⁸⁰ In their evolutionary anthropology, human society was seen as having evolved from barbaric to civilised, and religion, as a social institution, had evolved alongside it from rudimentary to complex. Lubbock classified ‘lower

⁵⁷⁶ Fichman, *Evolutionary Theory and Victorian Culture*, pp. 146–51.

⁵⁷⁷ Charles Darwin, *The Descent of Man*, Second Edition (London: John Murray, 1874), pp. 97–145.

⁵⁷⁸ Herbert Spencer, *The Data of Ethics* (New York: A. L. Burt, 1879); Leslie Stephen, *The Science of Ethics* (New York: G. P. Putnam's sons, 1882).

⁵⁷⁹ George W. Stocking, *Victorian Anthropology* (New York: The Free Press, 1987), pp. 188–97.

⁵⁸⁰ Stocking, *Anthropology*, p. 196.

religions' 'according to the nature of the object worshiped' in the following orders: atheism, fetishism, nature-worship, shamanism, and idolatry.⁵⁸¹ Christian monotheism was treated by him as a higher religion than these. Tylor considered animism—the belief in spirits that animated the world—as the rudimentary form of religion and as the essence of religion, from which religions with complex theories and rituals had evolved.⁵⁸² McLennan, as well as Spencer, held similar views with Tylor.⁵⁸³ In later decades, there were also many anthropologists using evolutionary narratives to describe religion, such as James George Frazer (1854–1941) in his *The Golden Bough: a Study in Magic and Religion* (1890), Edward Caird (1835–1908) in his Gifford Lectures on the evolution of religion delivered in 1890–1892, William Robertson Smith (1846–1894) in his *Lectures on the Religion of the Semites* (1894), Edward Clodd (1840–1930) in his *Animism: The Seed of Religion* (1905), and Lewis Richard Farnell (1856–1934) in his *The Evolution of Religion: An Anthropological Study* (1905).⁵⁸⁴

5.1.2 Herbert Spencer and *A System of Synthetic Philosophy*

Herbert Spencer was one of the most famous evolutionary philosophers in the late Victorian period. A railway civil engineer in his youth, Spencer began his literary life as a sub-editor on the free-trade journal, the *Economist*, at the age of 28. He soon joined the *Westminster Review* circle of radical thinkers. After his two first books—*Social Statics* (1850) and *The Principles of Psychology* (1855), he announced his ambition to write a gigantic synthetic philosophy synthesising physics, biology, psychology,

⁵⁸¹ John Lubbock, *The Origin of Civilisation* (New York: D. Appleton & Co., 1870), p. 119.

⁵⁸² Efram Sera-Shriar, 'Historicizing Belief: E. B. Tylor, *Primitive Culture*', in *Historicizing Humans*, ed. by Efram Sera-Shriar (Pittsburgh: University of Pittsburgh Press, 2018), pp. 68–90; Ivan Strenski, *Thinking about Religion—A Historical Introduction to Theories of Religion* (Malden: Blackwell Publishing, 2006), p. 92.

⁵⁸³ Stocking, *Anthropology*, p. 196.

⁵⁸⁴ Strenski discusses evolutionism in religious study in Strenski, *Thinking about Religion*, pp. 91–164.

sociology, and ethics with positivism and the law of progress. The work was published in ten successive volumes finally completed in 1896. It can be seen as a completion of the positivistic and progressive programme of the *Westminster Review* circle. The goal of this programme was to prove the universality and uniformity of natural laws not only in the physical world but also in the organic world, human society, and the mental realm, and to prove that progress towards better states was a fundamental law of nature like the law of the indestructibility of matter and the law of the conservation of energy.⁵⁸⁵ Evolutionary theory was a fundamental element of Spencer's progressive philosophy. It was also a unique characteristic of Spencer's philosophy compared to many other progressive philosophers such as Hegel, Kant, Comte, Mill, and Marx who did not build their philosophies upon evolutionary theory. This characteristic made Spencer's synthetic work a good source for those who interested in both the idea of progress and the science of evolution.

Spencer's synthetic philosophy began with the book *First Principles of a New System of Philosophy* (1862). In this book, Spencer sketched out the fundamental ideas of his evolutionism. *First Principles* contained a large extension of his essay 'Progress: Its law and cause' (1857). Spencer defined evolution in the book as 'the integration of matter and concomitant dissipation of motion', and dissolution as 'the absorption of motion and concomitant disintegration of matter'.⁵⁸⁶ He also defined progress as the 'change from a less coherent form to a more coherent form' or the increase of 'heterogeneity'.⁵⁸⁷ One of Spencer's main arguments in this book was that progressive evolution was a law of nature. In other words, he argued that matter in general was integrating towards more coherent and more heterogeneous states.

In order to support this claim, Spencer gave an inductive proof and a deductive proof. In his inductive proof, he argued that 'existences of all orders *do* exhibit a progressive integration of Matter and concomitant loss of motion', i.e., *do* exhibit progressive

⁵⁸⁵ Taylor, *Spencer*, pp. 64–65 and 127.

⁵⁸⁶ Spencer, *First Principles*, p. 285.

⁵⁸⁷ *Ibid.*, pp. 327 and 332.

evolution.⁵⁸⁸ Spencer illustrated and interpreted the following processes as progressive and evolutionary: the formation of the solar system according to the nebular hypothesis, the geological development of the earth, the growth of individual organisms including the human body, the transmutation of species, the development of human society, the development of human language, industrial developments, and aesthetic art developments.⁵⁸⁹ Spencer claimed that these processes were evolutionary because they involved the integration of matter, and that these processes were progressive because these aggregations of matter increased coherence and heterogeneity. In his deductive proof, Spencer aimed to deduce progressive evolution from the laws of force.⁵⁹⁰ He reasoned that a cause or a force would create multiple effects and consequently the state of homogeneity was unstable. Thus, matter had a tendency to become heterogeneous. A complex heterogeneity was considered by Spencer as the ultimate 'stable equilibrium'.⁵⁹¹

First Principles was followed by two volumes of *Principles of Biology* published in 1864 and 1867; two volumes of *Principles of Psychology* published in 1870 and 1872, three volumes of *Principles of Sociology* published between 1876 and 1896, and two volumes of *Principles of Ethics* between 1879 and 1892. These subsequent volumes aimed to demonstrate in detail that progressive evolution was the law of the organic world, human mentality, human society, and human morality. A point that deserves a mention is Spencer's view of life. Spencer defined life as '[t]he continuous adjustment of internal relations to external relations'.⁵⁹² He coined the phrase 'survival of the fittest' in *Principles of Biology* after reading Darwin's theory of natural selection.⁵⁹³ Spencer subjected all phenomena of life to this adaptive perspective. Mental functions were also

⁵⁸⁸ Ibid., p. 307.

⁵⁸⁹ Ibid., pp. 308–27.

⁵⁹⁰ Ibid., p. 398.

⁵⁹¹ Ibid., p. 402.

⁵⁹² Ibid., p. 84.

⁵⁹³ Herbert Spencer, *Principles of Biology*, 2 vols (New York: D. Appleton and Company, 1884), I, pp. 444–45.

viewed by Spencer as adaptive mechanisms evolved from natural processes. Spencer claimed that ‘every advance in Intelligence essentially consists in the establishment of more varied, more complete, and more involved adjustments’.⁵⁹⁴

The basic ideas of Spencer’s synthetic philosophy—the doctrine of the universality of laws and the doctrine of progress as a law of nature—were not entirely novel, but Spencer extended them with fashionable scientific theories, especially those of organic evolution. He built a comprehensive worldview in which an external God was not needed, everything including the human mind was governing by the natural laws only, and the universe was advancing towards an ultimate heterogeneous equilibrium. For those who wanted to argue against the Christian doctrine of God and the Christian doctrine of creation, and also wanted to have a moral guidance from science, Spencer provided them a good source of reference. Yet, Spencer was rather agnostic in regard to religion. As a writer in the *Edinburgh Review* wrote: ‘He never rejected Christianity, he said, because he never accepted it’.⁵⁹⁵

Spencer’s immense fame did not follow immediately. Before 1866, Spencer’s writings and his doctrine of progressive evolution were not well known outside the *Westminster Review* circle, but after 1866, his philosophy quickly became very famous among reading people in Britain and gained great international fame, especially in America, until the decline of his fame in the mid-1880s.⁵⁹⁶ At the peak of Spencer’s reputation, he was admired as the Aristotle, the Francis Bacon or the Newton of the nineteenth century.⁵⁹⁷ He was also the only philosopher in history whose works sold over a million copies during his lifetime.⁵⁹⁸ Greta Jones argues that this upsurge of Spencer’s reputation was because of the growing acceptance of Darwinian evolutionary theory

⁵⁹⁴ Spencer, *First Principles*, p. 84.

⁵⁹⁵ Anon, ‘The Philosophy of Herbert Spencer’, *Edinburgh Review*, 199 (1904), 352–73 (p. 354).

⁵⁹⁶ Greta Jones estimates the date in her paper ‘Spencer and His Circle’, in *Herbert Spencer: The Intellectual Legacy*, ed. by Greta Jones and Robert Peel (London: Galton Institute, 2003), pp. 1–16 (p. 6); also see Taylor, *Spencer*, p. 25.

⁵⁹⁷ Taylor, *Spencer*, p. 1.

⁵⁹⁸ *Ibid.*, p. 4.

during these years, and because Spencer had a good relationship with the Darwinian circle. Spencer was a member of the X-Club in which members, such as Huxley and Tyndall, were usually supporters of the ideas of evolution and progression.⁵⁹⁹ The publication of Darwin's *Origin* in 1859 had heated up the debates over the general idea of evolution. The discussion of evolution was not only among scientific practitioners, but was also featured in periodicals, newspapers, and satires. The growing public concern over the general idea of evolution made Spencer's philosophy significant. There were many periodical articles that reviewed or summarised his ideas. Between the 1870s and the mid-1880s, Spencer's name, like Darwin's name, was perceived by people as a synonym of the idea of evolution.⁶⁰⁰ Spencer's use of modern scientific theories in support of his philosophy made him appear as an authoritative man of science in many Victorians' eyes, though he was never a practical scientist. Due to his great fame, his works were good sources of reference for many people who wanted to find scientific support for positivism and evolutionism in the third quarter of the nineteenth century.

5.1.3 Ernst Haeckel and *The History of Creation*

Ernst Haeckel (1834–1919) was a famous German Darwinian biologist. He held a monistic view of mind and matter, and he saw God and nature as united. He interpreted the theory of evolution as being in favour of monism and against supernaturalism, including creationism. His views were expressed in his widely circulated book *Natürliche Schöpfungsgeschichte* (1868). Robert Richards has pointed out that Haeckel's work served as a main source for many people to learn about Darwinian evolutionary theory not only in Germany but also in Britain and in other countries prior to the First World War.⁶⁰¹ In Victorian Britain, the first English translation of the work was published in

⁵⁹⁹ Ruth Barton, "'Huxley, Lubbock, and Half a Dozen Others': Professionals and Gentlemen in the Formation of the X Club, 1851–1864', *Isis*, 89 (1998), 410–44.

⁶⁰⁰ Greta Jones gives the above reasons in her paper 'Spencer and His Circle', pp. 6–10.

⁶⁰¹ Richards, *Tragic Sense of Life*, p. 2.

1876, titled *The History of Creation*. The renowned literary review periodical, the *Athenaeum*, commented that Haeckel's *The History of Creation* meant that English-speaking readers 'for the first time, have an opportunity of perusing an elaborate treatise on the principles of evolution, and of the doctrine of natural selection, from the pen of one other than Mr. Darwin himself'.⁶⁰² The radical weekly, the *Examiner*, commented that '[o]ur English literature is not yet so rich in works on the subject of evolution but we may be grateful for the translation of so clear and vigorous a treatise as the one now before us'.⁶⁰³ These book reviews show that the work was received well in Britain as a good popular book on evolution.

The History of Creation was published in two volumes. The first volume focused on explaining and defending the theory of descent and the theory of natural selection. Haeckel claimed that Darwin's theory of evolution was not a hypothesis but a truth like Newton's law of gravitation.⁶⁰⁴ He praised Darwin for having 'solved the yet harder problem of bringing the complicated phenomena of organic nature under the sway of the same natural laws' (xiv). One of his main goals in this volume was to support Darwin's theory with empirical evidence, and in this way, to argue against those who criticised Darwin's theory on the ground that it was 'not sufficiently proven' (xviii-xix). In the second volume, as the *Examiner* noted, 'Haeckel attempts to supply a pretty full sketch of the actual order of descent'.⁶⁰⁵ He drew genealogical trees of species. In the case of humans, Haeckel believed that all human races were derived from a single species he called 'primitive men' (309). Over time, primitive men divided into twelve races with different bodily and intellectual characteristics. Though all human races shared a common ancestor, Haeckel considered that the current twelve races were so

⁶⁰² Anon, 'The History of Creation', *Athenaeum*, 2515 (1876), 58–59 (p. 59).

⁶⁰³ James Sully, 'Professor Haeckel's History of Creation', *Examiner*, 3552 (1876), 237–38 (p. 237).

⁶⁰⁴ Ernst Haeckel, *The History of Creation*, 2 vols (New York: D. Appleton and company, 1876), I, pp. 30 and xiv. The following numbers in brackets after quotations from Haeckel are page numbers of this book.

⁶⁰⁵ Sully, 'History of Creation', p. 237.

different that they should be considered different species. Among these races, Haeckel claimed that '[t]he Caucasian, or Mediterranean man (*Homo Mediterraneus*), has from time immemorial been placed at the head of all races of men, as the most highly developed and perfect. [...] In bodily as well as in mental qualities, no other human species can equal the Mediterranean' (321). This was an instance of Haeckel's infamous racism. His genealogical tree of humankind was hierarchical. There were absolute physical and intellectual superiorities or inferiorities between different races and between races of different periods. The trend was generally progressive over time with the latter being superior to the former.

Haeckel's work was not simply a popular exposition of Darwinian evolutionary theory. It was also a vehicle to advocate his own belief in monism. Richards points out that Haeckel intended to write evolution in an anti-supernaturalist way, and that 'he took on Darwinian theory as a kind of theological doctrine, recasting it as the foundation for his "religion of monism"'.⁶⁰⁶ Haeckel was a member of the Evangelical Church almost all his whole life due to family tradition; however, he lost faith in supernatural religion after his beloved first wife, Anna Sethe, died in 1864, two years after their wedding. As Richards also points out, after this heart-breaking event, Haeckel was driven 'to find a more enduring and rational substitute for orthodox religion in Goethean nature and Darwinian evolution' and 'he still thought of himself as a religious person, though his was the religion of Spinoza and Goethe'.⁶⁰⁷ Indeed, Haeckel's monism can be seen as a development of the pantheistic philosophies of Spinoza, Goethe, and other German idealists, although he was more willing to be associated with materialism than with pantheism.

Haeckel identified his monism with his so-called 'scientific materialism', which was a positivistic view of the universe.⁶⁰⁸ He called his philosophy monism in the sense that there were only natural existences, or forms of matter, in the universe and no supernatural existences, or spirits. Natural phenomena were united in the sense that

⁶⁰⁶ Richards, *Tragic Sense of Life*, pp. 384 and 11.

⁶⁰⁷ *Ibid.*, pp. 343 and 353.

⁶⁰⁸ His definition of scientific materialism can be seen in Haeckel, *History of Creation*, p. 35.

there were no supernatural interventions that broke natural causal chains; every phenomenon had its cause and effect in nature. Haeckel also claimed that 'all exact science, and the law of cause and effect at its head, is purely materialistic' (36) and that 'we think it necessary to call [...] [scientific materialism] either *Monism* or *Realism*' (37).

In *History of Creation*, Haeckel also spent a few chapters arguing against the creationism of Christian biologists, notably that of Cuvier and Swiss-American biologist and geologist Louis Agassiz (1807–1873). Christian creationism was a supernatural creationism which involved a supernatural creator separate from nature. Haeckel also used the term 'Creation' in the book title but what he meant was 'non-miraculous' (7) creation or natural creation. He defined creation as meaning 'the *coming into existence of a body* by a creative power or force' (8). Christian supernatural creationism contained a dualistic conception of the natural and the supernatural. It was directly opposed to Haeckel's monism. He criticised Cuvier and Agassiz for being anthropomorphic and unscientific. He wrote that 'they overlook the fact that this personal Creator is only an idealized organism, endowed with human attributes. The low dualistic conception of God corresponds with a low animal stage of development of the human organism' (70). He also expressed his belief in 'the sublime idea of the Unity of God and Nature' (71) and cited pantheists Bruno and Goethe as supports. He claimed that '[t]his monistic idea of God [...] belongs to the future' (70). Richards points out that 'Haeckelianism became the faith of the Monist League, whose members spread across several continents'.⁶⁰⁹ It is no surprise to see that the widely-read *History of Creation* was picked up by advocates of pantheism as an important scientific support.

In Britain, the book was praised for its scientific part but criticised for its religious part. The Nonconformist organ, the *British Quarterly Review*, commented that 'whereas Darwin has never excluded the action of a Creator, but expressly requires it in order to [allow] the creation of the first primordial forms, from which all things have come, Haeckel dispenses with conscious purpose and intelligence, and reduces everything to

⁶⁰⁹ Richards, *Tragic Sense of Life*, p. 384.

a self-mechanical force'.⁶¹⁰ The author called Haeckel's philosophy 'Evolutionary Materialism'.⁶¹¹ He criticised Haeckel for lacking evidence to support his claims of 'the reality of spontaneous generation' and the natural origin of language.⁶¹² He saw Haeckel's materialistic claims as dogmatic. The final verdict was: 'We do not deny that his book contains much valuable scientific material, but as a 'History of Creation' it is a blank failure, and its dogmatism and arrogance render it as offensive as its philosophy is unsound and inadequate'.⁶¹³ The *Athenaeum*, though it praised Haeckel's synthesis of evolutionary theory, criticised Haeckel's materialism as dogmatic and unnecessary. The author wrote that 'more refined minds will find its dogmatism almost intolerable', and that '[p]roselytizing materialism makes right-minded people shun science'.⁶¹⁴ The author exclaimed: 'Why has he not taken a hint from his master—Darwin'.⁶¹⁵ These book reviewers all saw Haeckel's religious position as materialism, and none of them mentioned pantheism. This might be because Haeckel himself identified his religion as materialism and did not mention the term 'pantheism'. Even so, people would easily find pantheism or arguments in favour of pantheism in it.

5.1.4 Adam Sedgwick's Charge of Pantheism on *Vestiges*

As Jim Secord shows in *Victorian Sensation*, although Robert Chambers was more deistic than atheistic in *Vestiges*, the book was often criticised by Victorian thinkers as a potential vehicle of materialism and atheism. Pantheism was also one of the Victorians' concerns when they read *Vestiges*, although historians seldom mention it. Secord has mentioned that the atheistic writer of the freethought movement William Chilton (1815–1855) argued in an 1845 paper that the religious position of *Vestiges* 'was a

⁶¹⁰ Anon, 'The History of Creation', *British Quarterly Review*, 63 (1876), 224–27 (p.225).

⁶¹¹ *Ibid.*, p. 227.

⁶¹² *Ibid.*, p. 226.

⁶¹³ *Ibid.*, p. 227.

⁶¹⁴ Anon, 'The History of Creation', *Athenaeum*, 2515 (1876), pp. 58–59.

⁶¹⁵ *Ibid.*, pp. 58–59.

“transition state” to be followed by pantheism and atheism’.⁶¹⁶ Secord also gives an account of Adam Sedgwick’s criticism of *Vestiges* for materialism and atheism, but Secord does not mention that pantheism was also one of Sedgwick’s major concerns.

In the fifth edition of Sedgwick’s *A Discourse on the Studies of the University of Cambridge* (1850),⁶¹⁷ he warned that *Vestiges* might spread materialism, atheism, and also pantheism in the country and might consequently threaten the Christian spiritual and moral foundation of the country.⁶¹⁸ He claimed that the central ideas in *Vestiges*—‘spontaneous generation’ and ‘progressive development’—‘were invented and affirmed by those who did their best to cheat us out of our conceptions of a Creator, and denied the whole doctrine of Final Causes’ (xix). Sedgwick argued: ‘the inevitable and legitimate consequence of the theory’ was ‘that it does away all distinctions between material and moral’ and ‘it tells us that the soul of man is but a material mechanism’, consequently, ‘it destroys the very essence of moral responsibility’ (cxl–cxli). Sedgwick saw that this might lead us to either atheism or pantheism. He wrote: ‘With such a view of nature we may end in downright atheism; or, if we accept the indications of intelligence in the natural world, we may perhaps advance one step farther, and try to satisfy the longings of the mind in some cold scheme of pantheism’ (xvii).

Pantheism, in Sedgwick’s view, ‘denies the personality of the Godhead. It is not, on this scheme, true that God created all nature; but that all nature is God; and the word God becomes no longer a personal term defining our conception of a Creator and Ruler over the world; but an abstract collective term to define and comprehend all the phenomena of the universe’ (clxxiv). Most commonly, ‘Pantheism deifies the dead elements, and advances not one single step beyond sensual phenomena’ (clxxiv). In the

⁶¹⁶ Secord, *Sensation*, p. 310.

⁶¹⁷ Adam Sedgwick, *A Discourse on the Studies of the University of Cambridge* (London: J. W. Parker, 1850).

⁶¹⁸ J. A. Secord, ‘Sedgwick, Adam (1785–1873)’, in *ODNB* <<https://www.oxforddnb.com/>> [accessed 12 August 2018].

extreme 'material pantheism', 'nature may in the end evolve a personal God' 'out of the combinations of dead material elements by progressive development' (clxxv). He criticised pantheism for being 'but Atheism tricked out in the semblance of religion' (clxxvii). The cosmology of *Vestiges* was called 'rank materialism' by Sedgwick, and he claimed that 'rank materialism, as a scheme of nature, is shallow, inadequate, and false. It is the foundation of Atheism, Pantheism, and almost every modification of psychological delusion in our views of nature' (clxxxix).

As pantheism was considered by Sedgwick as a superficial cover of atheistic materialism, he applied most of his criticisms of atheistic materialism to pantheism. He argued that pantheism, like materialism, denied external causes and thus denied the first cause. He wrote that 'Atheism and Pantheism strip us of one of the best element of our intellectual nature. There is a principle of causality within us without which we could never ascend to any conception of general truth, or of law and order, whether material or immaterial' (clxxvii–clxxviii). Sedgwick considered this illogical since there could not be second causes without a first cause. Sedgwick also claimed that pantheism, like materialism, held the idea of the material origin of mind. He considered that the material origin of mind implied in pantheism was unthinkable, as he wrote: 'I cannot, by any effort of the imagination, conceive my personal self to be so decomposed that its several functions should be resolved like the dead elements of a material body, and made to pass, one by one, into a new and separate form of conscious existence' (clxxxii–clxxxiii). As for the extreme idea of the material and evolutionary origin of God, Sedgwick criticised it as 'blasphemous' and 'out of all analogy and harmony with the knowledge of experience' (cxc–cxci).

Sedgwick's criticism of *Vestiges* shows that Victorian thinkers could criticise developmental theory for spreading pantheism due to its potential to support pantheism, and this potential was demonstrated by pantheistic thinkers in the past and in the present time. The writer Richard St John Tyrwhitt (1827–1895) once mentioned that Charles Darwin was accused of pantheism. He wrote: 'evolution is connected with

the name of Mr. Darwin, and he is accused of Pantheism'.⁶¹⁹ Tyrwhitt did not give evidence or explain why Darwin was accused of pantheism, but it can be imagined that since some thinkers considered the idea of evolution pantheistic, Darwin as its most famous advocate might also have been considered to be advocating pantheism.⁶²⁰

5.1.5 Accusations of Pantheism Made Against Herbert Spencer

The accusations of pantheism made against Spencer during his life time have rarely been mentioned in the historiography. Spencer scholars usually see him as an agnostic who was sometimes associated with scientific materialists, such as Tyndall. In fact, Spencer was occasionally accused of pantheism by his contemporaries, mainly because of his metaphysical view that the reality of the world was an Unknowable, of which all things were manifestations. The view was very similar to pantheists' doctrine of God. It was mainly expressed in the first part of *First Principles*.

Spencer began by claiming that 'all our knowledge, properly so called, is Relative', that due to 'our indestructible belief' in an underlying actuality, we inevitably conceive something 'Non-relative', 'absolute' or 'actual' behind the relative or 'appearance', but we cannot have knowledge of it because 'human intelligence is incapable of absolute knowledge'.⁶²¹ Spencer credited this idea to Scottish philosopher William Hamilton (1788–1856) and English philosopher Henry Longueville Mansel (1820–1871).⁶²² He

⁶¹⁹ Richard Tyrwhitt, 'On Evolution and Pantheism', *Contemporary Review*, 33 (1878), 81–96 (p. 83).

⁶²⁰ Robert Richards has argued that Darwin's conception of nature was greatly influenced by German romantics, such as his idea that nature came into being through gradual change rather than sudden creation. See Robert Richards, *The Romantic Conception of Life* (Chicago: The University of Chicago Press, 2002), pp. 514–54. He shows some connections between Darwin and pantheistic thinkers.

⁶²¹ Spencer, *First Principles*, pp. 96–97 and 68. The following numbers in brackets behind quotations of Spencer in this section are page numbers of this book.

⁶²² *Ibid.*, p. xiii.

gave large quotations from Mansel's *Limits of Religious Thought* (1858).⁶²³ Hamilton's *Philosophy of the Unconditioned* (1829) might also be a source of Spencer's philosophy. Based on this epistemological scepticism, Spencer made the ontological claim that the ultimate reality was 'the Unknowable' and that all that could be known was the appearance of the Unknowable.⁶²⁴

Spencer also proposed to reconcile science and religion by using this idea. He wrote that '[i]f Religion and Science are to be reconciled, the basis of reconciliation must be this deepest, widest, and most certain of all facts—that the Power which the Universe manifests to us is utterly inscrutable' (46). He claimed that, on the one hand, 'true' religion had 'everywhere established and propagated one or other modification of the doctrine that all things are manifestations of a Power that transcends our knowledge' (100). In other words, true religion was the acknowledgement and worship of the Unknowable. On the other hand, true science was 'all positive and definite knowledge of the order existing among surrounding phenomena' (102). That is to say that true science did not claim knowledge of the Unknowable. From these two points, Spencer considered that if science and religion both stayed in their suitable forms, admitting the Unknowable, then science and religion would be reconciled. He argued that the conflict between science and religion was caused by religious people being unreligious and creating dogmatic takes on the Unknowable, or by scientific people being unscientific and claiming knowledge about the Unknowable.

Michael W. Taylor has pointed out that '[a]s a substitute for religion, Spencer's system was sufficiently ambiguous that it was capable of being most things to most men', that many people used Spencer's system to support 'secular' and 'evolutionary' theodicies, and that Spencer was often accused of promoting atheism and materialism.⁶²⁵ The combination of the anti-creation, anti-personal God, positivism, and progressive evolutionism elements suggested to contemporaries the potential for materialism and atheism in his works, though Spencer himself denied being atheist or materialist, since

⁶²³ Taylor, *Spencer*, p. 135.

⁶²⁴ Spencer, *First Principles*, p. 1.

⁶²⁵ Taylor, *Spencer*, pp. 7 and 138.

he still suggested that religious feelings were necessary. Like Tyndall, he was against established religions but was in support of religious sentiments. What Taylor does not mention is that Spencer's system had the potential to be used to support pantheism, and that Spencer himself was also accused of pantheism.

While Spencer's system could be seen as atheistic, materialistic, or deistic for the reason that he denied the influence of an external God upon nature, it was also possible to suggest that his system supported the existence of an immanent God in nature. Spencer's rhetoric of the Unknowable was strikingly similar to pantheists' rhetoric of the immanent God. Because of this similarity, it was easy for Victorian readers to identify Spencer's Unknowable with a pantheistic God. Spencer's denial of an external and personal God, his denial of creation, and his positivistic view of the world were also common components of pantheism. Many of Spencer's contemporary critics thus pointed out that Spencer's philosophy had the potential to support pantheism.

For example, an anonymous writer in the Catholic periodical, the *Dublin Review*, pointed out that Spencer's Unknowable often reminded them of the God of pantheism.⁶²⁶ Another writer in the *Dublin Review* claimed that 'the philosophy of Herbert Spencer does not merely tend to Pantheism but contains it'.⁶²⁷ Catholic biologist St George Mivart (1827–1900), pointed out that Spencer's Psychology tended towards pantheism.⁶²⁸ Roman Catholic priest and novelist William Barry (1849–1930) considered that atheism, agnosticism, and pantheism were sects of a new religion and that Spencer was a chief propagandist of this religion.⁶²⁹ Spencer himself mentioned an accusation of pantheism made by Mansel. He pointed out in a periodical article that Mansel had claimed that 'Mr. Spencer, in his work on *First Principles*, endeavours to

⁶²⁶ Anon, 'The Scripture Doctrine of Creation', *Dublin Review*, 20 (1873), 242–49 (p. 245).

⁶²⁷ Anon, 'Catholicity and Pantheism', *Dublin Review*, 23 (1874), 251–56 (p. 253).

⁶²⁸ George Mivart, 'An Examination of Mr. Herbert Spencer's Psychology', *Dublin Review*, 23 (1874), 476–508 (p. 508).

⁶²⁹ William Barry, 'The New-Birth of Christian Philosophy', *Contemporary Review*, 44 (1883), 660–80 (p. 661).

press Mr. Hamilton into the service of Pantheism and Positivism together'.⁶³⁰ Spencer denied being pantheistic and replied that this was a 'somewhat strange assertion by the way, considering that I reject them both'.⁶³¹

Spencer did not consider his system pantheistic, and he rejected pantheism together with animism, polytheism, monotheism, and atheism in the first part of *First Principles*.⁶³² Spencer considered that there were three common suppositions concerning the origin of the universe. 'We may assert that it is self-existent; or that it is self-created; or that it is created by an external agency' (30). He associated the first one with atheism, the second one with pantheism, and the third one with monotheism, and he considered all of these suppositions weak. When criticising the first supposition, Spencer wrote that '[t]he assertion that the Universe is self-existent does not really carry us a step beyond the cognition of its present existence; and so leaves us with a mere re-statement of the mystery' (32). When discussing the second supposition, Spencer wrote that '[t]he hypothesis of self-creation, which practically amounts to what is called Pantheism, is similarly incapable of being represented in thought' (32). He considered that the idea of self-creation implied that the universe knew what it was going to be and created its futures according to those images. He called the images 'potential universe' (33). He criticised the idea of the existence of potential universes for being paradoxical, because if a potential universe could be represented in thought, then it must exist as something, and consequently, as it existed, it was an 'actual universe' rather than a potential universe, thus humans could not actually conceive a potential universe. In addition, he pointed out that humans also had no idea about how a potential universe could become an actual universe. With these reasons he claimed that it was not possible to form a clear idea of a self-created universe, and he thus repudiated pantheism. Regarding the third supposition, Spencer considered that it suffered all the weaknesses of the first two suppositions. Instead of assuming the universe to be self-existent or self-created, it assumed an external creator as self-

⁶³⁰ Herbert Spencer, 'Replies to Criticisms', *Fortnightly Review*, 14 (1873), 581–95 (p. 583).

⁶³¹ *Ibid.*, p. 583.

⁶³² Spencer, *First Principles*, p. 43.

existent and self-created. Spencer argued that humans could not form any clear idea of that creator and humans did not have any evidence of its action in creation. Moreover, he considered that the idea of creation from nothing implied that space had a moment of non-existence, and he considered this idea to be unthinkable. Spencer concluded that 'these three different suppositions respecting the origin of things, verbally intelligible though they are, and severally seeming to their respective adherents quite rational, turn out, when critically examined, to be literally unthinkable' (35).

Spencer also repudiated these religious positions on the ground that they all claimed knowledge about the Unknowable. When talking about pantheism, he wrote that 'in Pantheism, in which the generalized personality becomes one with the phenomena; we equally find a hypothesis which is supposed to render the Universe comprehensible' (43). Spencer implied that pantheism, as it still claimed knowledge of the Unknowledge, was not the true religion he supported.

It will show in the following sections that his pantheistic followers could easily find ways to avoid these criticisms and to make 'pantheism' the name of Spencer's true religion. This was also why Spencer's system was associated with pantheism by many critics, even though he claimed to reject pantheism. This situation was similar to his attitude towards positivism. Many reviewers, including modern reviewers such as Taylor, have represented Spencer's system as fundamentally positivistic, while Spencer denied this. Taylor claimed that Spencer's denial of positivism was because Auguste Comte's positivism supported French materialistic social philosophy, which was against the 'liberal and eudaemonist tradition' in Britain, and which Spencer did not wish to be associated with.⁶³³ Pantheism was somewhat notorious in Britain as well, thus, it was understandable if Spencer did not want to be associated with pantheism.

5.2 Pantheistic Uses of Evolutionary Theories

In the previous section, we see that the developmental view of the cosmos and the earth as well as the idea of progress had a long history prior to the Victorian era,

⁶³³ Taylor, *Spencer*, p. 44.

however the developmental view of life was widely accepted only after the 1860s. The general developmental and progressive view of the world expressed in *Vestiges* (1844) was widely considered valid after the developmental view of life became widely accepted. The term 'evolution' was commonly used to denote development theory after Spencer introduced it into wider usage in the 1850s, and the idea of progress was often implied in this term. Evolutionary theories and evolutionary philosophers were sometimes criticised for being pantheistic, as we have seen with the cases of Sedgwick and Spencer. In this section, we will see how advocates of pantheism made use of these old and new evolutionary theories as well as of the pantheistic image of evolution to support their pantheistic doctrines.

5.2.1 John Hunt and the Doctrine of Development and the Unity in the Plan of Nature's Works

In Hunt's view, pantheism was synonymous with rational theology, the kind of theology that utilised reason to the utmost so that no doctrine was accepted without being examined by reason. He believed that the use of reason in theology necessarily led to the conclusion that God was the infinite. He pointed out that God's infinity implied God's immanency in the world, since if the world was not in God, then God was excluded from the world, and consequently God was limited and not infinite. According to Hunt, God's immanence in the world also meant that God did not create once and leave the world but created unceasingly. He believed that the world 'was not a work, but an unfolding; a manifestation of mind in matter; a development of the One into the many', and he claimed that the unfolding way of creation was expressed in 'the doctrine of development', or 'the law of progress', which was increasingly supported by scientific practitioners.⁶³⁴ He wrote:

That the soul which lives and works in nature is God, is the partial truth of all the theories of progressive development. These theories were the inevitable result of

⁶³⁴ Hunt, *Essay on Pantheism*, pp. 356 and 366.

the study of nature. There, all is progress. Everything unfolds. The highest organism has its beginning in the smallest form of life. The visible starts from the invisible. The things which are seen are made from things which are not seen.⁶³⁵

Hunt gave an account of the history of the doctrine of development accompanied by pantheistic interpretations. He considered that the doctrine of development already existed in ancient cosmologies, such as Brahmanism, and he claimed that the doctrine had been revived and made scientific in modern times by French naturalists Benoît de Maillet (1656–1738), Jean-Baptiste Robinet (1735–1820), Lamarck, and Geoffroy Saint-Hilaire.⁶³⁶ Hunt argued that the developmental theories of these French naturalists all implied that nature was united. He observed that ‘Robinet’s theory was vastly comprehensive, uniting all kingdoms, classes, and species. He believed that he had found the key of the universe, and that he laid the foundation of all true science, in being able to say, “Nature is one”’ (352). He read Lamarck as claiming that ‘Nature is one and undivided. It knows of no orders but the order of progression’ (353). He saw in Geoffrey that ‘Nature [...] has formed all living beings on a unique plan, essentially the same in the principle but varied after a thousand ways in all its necessary parts’ (355). After introducing these French naturalists, Hunt pointed out that the doctrine of the unity of nature could be used to support pantheism. He wrote that the pantheistic poet ‘Goethe had announced the doctrine of development as the law of the vegetable kingdom. [...] What seemed at first but the fancy of a poet is now the scientific doctrine of vegetable morphology’ (357).

In the British context, Hunt considered that ‘[t]he doctrine of development was first made popular in England by the ‘*Vestiges of a Natural History of Creation*’ (358). He also

⁶³⁵ Hunt, *Pantheism and Christianity*, p. 347. The quotations from Hunt in the rest of the section come mostly from *Pantheism and Christianity*, since, although most ideas already existed in *An Essay on Pantheism*, Hunt revised and reorganised this part about the doctrine of development in *Pantheism and Christianity*. The numbers in brackets after quotations from Hunt in this section are the page numbers of this book.

⁶³⁶ *Ibid.*, pp. 347–52.

indicated that the idea of the transmutation of species, the idea of a changing earth, and the nebular hypothesis were presented in the book. In regard to the nebular hypothesis, Hunt mentioned that Laplace might have thought it unnecessary to assume God in the progress of the solar system, but that 'the author of the *'Vestiges'* saw in this progressive working the mode of operation most becoming the divine Being, and most analogous to all that we know of his ordinary working' (359). In regard to the creation of the Earth and life, Hunt read from *Vestiges* that God progressively created the inorganic and the organic worlds using the same set of substances and laws. He wrote: 'Life pressed in as soon as there were suitable conditions. Organic beings did not come at once on the earth by some special act of the Deity. The order was progressive. There was an evolution of being, corresponding to what we now see in the production of an individual' (360).

Darwin was the next and final figure in Hunt's account. He claimed that '[t]he development doctrine found a rigidly scientific advocate in Charles Darwin' (360). He acknowledged that the theory of natural selection was the theory Darwin proposed to account for changes in species. Hunt claimed that '[t]he development doctrine has received but little additional illustration since Darwin's work' (361). In 1866, he considered that Darwin's *Origin* was almost the final statement of the doctrine of development, and he still held this view in 1884. Charles Lyell's acceptance of the transmutation of species and Huxley's endeavour in searching for missing links were mentioned by Hunt as minor developments. As an orthodox Church of England clergyman, Hunt accepted the theory of descent that humans evolved from animals, as he cited Huxley and wrote that 'Professor Huxley finds most humanity in the chimpanzee' (362).

For Hunt, the doctrine of development also implied the unity in the plan of nature's works, and both ideas implied an immanent deity in nature. He claimed that '[t]he doctrine of development may be denied, but the facts which have led to a belief in it remain the same, and require to be explained. These facts are an obvious unity in the plan of nature's works, which is now acknowledged by all scientific men' (362). For him, there was no division between life and non-life in nature. He wrote:

Life itself is supposed to be but a higher degree of the same power which constitutes what we call inanimate objects. [...] When we say life is present or absent, we only mean the presence or absence of a particular manifestation of life. The all-life of the universe is the Deity energising in nature—this is the theology of science. The conception of the universe is incomplete if it is not conceived as a constant and continuous work of the eternally-creating Spirit. [...] Religion, poetry, and science all demand that, however much God may transcend his creation, he must in some way be immanent therein (364).

Hunt here did not simply claim that scientific theories of development could be compatible with his pantheistic view of God, but also claimed that these scientific theories necessarily ended in his pantheistic view of God.

There are many conceivable problems in Hunt's argument. On the one hand, the doctrine of development and the idea of the unity of nature are compatible with a version of deism in which God created all these rules once and left the world to run by itself as a closed system. These ideas do not necessarily lead to the idea of an infinite and immanent deity. On the other hand, God's infinity and immanency do not necessarily imply that the world is progressive and undivided. Hunt did not tackle these problems. This part of his work also did not attract much attention from reviewers. Among all the reviewers that I mention in Hunt's section in the second chapter of this dissertation, only the reviewer of the Evangelical Nonconformist journal, the *British Quarterly Review*, mentioned Hunt's uses of science. The reviewer praised him: 'One of the special features of this new issue is the place which is assigned to Mr. Darwin and the law of development in relation to Pantheism. Here Dr. Hunt shows more than his usual decision and incisive insight'.⁶³⁷

⁶³⁷ Anon, 'Pantheism and Christianity', *British Quarterly Review*, 158 (1884), 484–85 (p. 485).

5.2.2 Constance Plumptre and Her Evolutionary Cosmology

Plumptre used evolutionary theories in many ways in the second volume of her *General Sketch of the History of Pantheism* (1879).⁶³⁸ First, she drew a picture of human intellectual evolution, in which monism and pantheism were the highest conceptions in intellectual evolution. Secondly, she used Haeckel's interpretation of Darwin's theory to support her monistic view of God and nature, and she used the nebular hypothesis to support her view of a phoenix-like universe. Thirdly, she interpreted Spencer's philosophy of the Unknowable as pantheistic in its essence.

Plumptre adopted a thoroughly evolutionary cosmology in her pantheism, though it was presented in quite a fragmentary fashion in her work. When she talked about human intellect, she represented it as progressively developed from animal-like to highly-civilised. She claimed that 'Man, as everything else in Nature, has to advance from the simple to the complex, from the lower to the higher' (271–72). She considered that humans were at first similar to animals, 'crawling upon the earth, absorbed in the pursuits necessary for the satisfaction of his animal desires and animal necessities' (271–72). It was language, she considered, that began human civilisation. She wrote: 'I have often thought that the great step which marks the differentiation of the human from the animal is the possession of Language' (272). She considered that mind and reason originated from language.

This evolutionary picture implied a hierarchy of ideas, which Plumptre used to support her idea of religious evolution. She considered that there were two ways to explain the causes of natural phenomena—'Creation by external agency, and Self-Existence or Universal Immanence', and that '[e]ach of these answers has two forms. External agency may be Polytheism or Monotheism; Self-Existence may be Pantheism or Atheism' (273). Plumptre ranked these ideas chronologically. She considered that polytheism was the first stage in intellectual history. She wrote: 'Uncultured humanity almost invariably selects the polytheistic form of external agency as a solution of the

⁶³⁸ Plumptre, *General*, II. The numbers in the brackets after quotations from Plumptre in this section are page numbers of this volume.

enigma. And naturally so; nay necessarily so. [...] In the childhood of every religion in the world we see the same ideas disclosing themselves. [...] In the lower religions gods and goddesses rule over the destinies of men more in caprice than from any definite purpose.' (274). She associated polytheism with 'uncultured humanity', 'the childhood of every religion', 'the lower religions', and the 'primary and lowest stage of religion' (274).

The next development was Monotheism. Plumptre considered that when man 'becomes alive to the fact that one all-powerful and omniscient Ruler of men and of things is a worthier object of adoration than are a multitude of divinities of small and limited power, all hating and warring against each other, he gradually arrives at the conception of Monotheism' (274–75). She saw this development as 'an immense development in his spiritual nature' (274–75). There were also lower and higher forms of monotheism. The lowest kind was almost the same as polytheism, and the highest one was held by Christian saints such as St Augustine. She did not elaborate on her criteria for distinguishing between higher and lower monotheisms.

The next and perhaps the final stage was pantheism. She claimed that the highest form of monotheism had 'a more sublime conception of God' than pantheism, but that 'Pantheism is supplanting Monotheism, not because of its greater sublimity but because of its greater capability of verification' (275). She claimed that 'Science, that great leavener of religion' (275) was currently the cause of a new evolution of religion from monotheism to pantheism. The reason was that science in her view disproved 'the doctrines of a local Heaven or a Personal God' (276) that were central to monotheistic beliefs. She claimed that science had made the idea of a personal God sitting in a localised heaven unbelievable, since the sky was but systems of stars after systems of stars and nothing looked like a localised heaven. She also claimed that 'Science is at last beginning to prove to us beyond the possibility of contradiction the identity of man with all other forms of existence whether organic or inorganic' (278), which, she pointed out, was a central doctrine of pantheism.

In Plumptre's account of religious evolution, pantheism was the newest religion and thus the most civilized and advanced religion. As it has been introduced in the first chapter of this dissertation, many Christian critics argued for the opposite picture, in

which pantheism was a lower form of religion while monotheism was the most advanced theology. One of their reasons was that pantheism existed in many primitive religions such as Hinduism and Buddhism, which came earlier than Christianity, and whose adherents were supposedly not as civilised as the British people. Plumptre did not mention such criticisms. She constantly insisted that pantheism was held by elites in those cultures, and she implied that if there was no science, then pantheism and monotheism might exist side by side, but since science existed, then pantheism would replace monotheism in the foreseeable future, since 'Pantheism is, of all the religious solutions, the most in accordance with scientific discoveries'.⁶³⁹

Moreover, Plumptre also used Spencer's law of progress and his view on the progress of knowledge to argue that pantheism was truer than monotheism. She quoted from the beginning of the third part of *Principles of Biology*, in which Spencer argued that the idea of special creation was given by 'undeveloped intellect' and consequently this idea tended to be erroneous like many other primitive ideas. According to his law of progress, Spencer asserted that 'ideas are not usually true ideas. [...] What we call the progress of knowledge, is the bringing of Thoughts into harmony with Things; and it implies that the first Thoughts are either wholly out of harmony with Things, or in very incomplete harmony with them'.⁶⁴⁰ Plumptre paraphrased this, claiming that 'certain conceptions are the product of immaturity, whether in the race or the individual', and there is 'a strong probability that such conceptions are erroneous' (279). Thus, 'Polytheism is invariably the product of a low culture would make it yield in probability to Monotheism, which is the product of a relatively high culture; and Monotheism in its turn is yielding to Pantheism, as mankind attains by degrees a still higher order of intelligence' (279). She claimed that since pantheism was the product of 'a late and eminently scientific century', according to the law of progress, its doctrine was truer than monotheism and polytheism, which were products of 'an early and eminently unscientific century' (279).

In addition to her hierarchy of polytheism, monotheism, and pantheism based on an evolutionary history of human intellectual development, Plumptre also ranked monism

⁶³⁹ She implied this in p. 275 and p. 278 and more places; the quotation is from p. 277.

⁶⁴⁰ Spencer, *Principles of Biology*, I, p. 333; Plumptre, *General*, II, p. 278.

and dualism and claimed that the monistic idea of God was more advanced than the dualistic idea of God. She quoted from the third chapter of *The History of Creation*, in which Haeckel criticised Cuvier and Agassiz's theistic concept of God. Cuvier and Agassiz defended a dualistic concept of God according to which God and nature were separated and God was external to nature. Haeckel claimed: 'The low dualistic conception of God corresponds with a low animal stage of development of the human organism. The more developed man of the present day is capable of, and justified in, conceiving [...] the monistic conception of the universe [...], [the] monistic idea of God [...] [and] the sublime idea of the Unity of God and Nature'.⁶⁴¹ Haeckel linked this intellectual development with the physical development of the human organism. This was a strong claim since Haeckel was essentially implying that the races that believed in monism were physically more developed than those that believed in dualism. Through Haeckel's words, Plumptre implied that pantheism as a form of monism was evolutionarily higher than monotheism, which was a dualism.

So far, we see that Plumptre used the popular evolutionary view to formulate an evolutionary history of the human intellect in which pantheism was the most recent development and thus the most advanced religious position among all its opponents. She also used evolutionary theories to support specific pantheistic doctrines. One such doctrine was that God and nature were united, and another was that there was no creation but only transformation.

In supporting her monistic view of God and nature, Plumptre, once again, used Haeckel's words. She quoted from the first chapter of *The History of Creation* in which Haeckel introduced Darwin's theory of descent and argued that this theory was the final block of a monistic view of nature. Haeckel claimed: 'By the Theory of Descent we are for the first time enabled to conceive of the unity of nature in such a manner that a mechanic-causal explanation of even the most intricate organic phenomena'.⁶⁴² He also claimed that '*all natural* bodies which are known to us are equally animated, that the

⁶⁴¹ Plumptre, *General*, II, pp. 279–80; Haeckel, *History of Creation*, I, p. 72.

⁶⁴² Haeckel, *History of Creation*, I, p. 72.

distinction which has been made between animate and inanimate bodies does not exist. [...] This final triumph of the monistic conception of nature constitutes the highest and most general merit of the Theory of Descent, as reformed by Darwin'.⁶⁴³ By quoting these words of Haeckel, Plumptre argued that Darwin's theory of descent supported the pantheistic conception of a divine and living nature, against the monotheistic conception of nature.

Plumptre also incorporated the nebular hypothesis in her pantheistic cosmology. She extended the hypothesis from the solar system to the whole universe and added the idea of everlasting circles of rebirth and decay. She pictured the whole universe as a phoenix that went through numerous circles of decay and rebirth. In the introduction to her cosmology, Plumptre argued that 'transformation and metamorphosis seem to be the order of the heavens as much as of the earth' (287). She found that the nebular hypothesis supported this claim. Plumptre credited the nebular hypothesis to Laplace and did not mention Herschel or others. She wrote that 'if the theory of Laplace be true [...] the entire solar system [...] was, in its original state, one vast, gigantic whole, travailing in labour before its offspring could be detached from it' (287). She also stressed its scientific authority, claiming that 'although that theory has not yet emerged from the region of hypothesis, it is an hypothesis which seems to be daily gaining ground with the most enlightened minds' (287). It is also noticeable that she used the genealogical term 'offspring'. In this context, the term gives the sense that the primitive gigantic sun was the common ancestor of all existences in the solar system. Indeed, she called the sun 'the common Father of the mighty system of Comets, Planets, and their satellites' (289). Plumptre extended this view to the whole universe and speculated that our 'Sun in its turn may but be the offspring of a yet greater sun, this, again of yet greater, or perhaps of a system of suns, until we find that the entire Universe may have originally been one vast, gigantic, nebulous whole' (289). She implied that there was a genealogical unity of all things, not only in the solar system, but also in the whole universe.

⁶⁴³ Plumptre, *General*, II, pp. 281–82; Haeckel, *History of Creation*, pp. 22–23.

Incorporating the philosophical speculations of David Strauss, Kant, and Leibnitz, together with ideas from Buddhism, Plumtre imagined a phoenix-like universe. In her speculation, 'at some distant period, the Earth must eventually return into the Sun' (291), because 'the resistance of the ethereal medium' 'is believed must eventually bring the Earth into the Sun' (292). When the earth and other planets and satellites collided with the sun, they would become gaseous again. Thus 'the whole Sidereal System will eventually be reduced to the state of nebulosity from which it originated' (292–93). She extended this view to the whole universe and speculated that 'as the whole Universe has in all probability originated from a nebulous condition, so it is destined to return into a similar nebulous condition, to be built up again, perchance, [...] into fresh forms of Suns and Planets and Satellites' (293). Using quotations from German theologian David Strauss's 'Dogmatic Divinity' and *The Old Faith and the New* (1873), Plumtre asserted that the universe as a whole was everlasting, but its parts went through continuous phases of perishing and rebirth. Kant had made a similar speculation in his *General History and Theory of the Heavens* (1755). Plumtre cited Kant's view that when planets collided with the sun the collision would 'add immeasurably to his heat' so the collision would fuel up the next round of rebirth. Lastly, through citing Leibniz and Buddhism, Plumtre asserted that 'there never has been a time when worlds and beings have not been evolved in endless revolutions of birth and decay' and that '[e]very world has arisen from a former ruined world' (295–96).

Plumtre's cosmology was different from Spencer's and seems to be at odds with her former views. Spencer considered that, according to the law of progress, the universe would continue to evolve from simple to complex until it reached maximum complexity—an ultimate equilibrium. There would be small dissolutions, such as the death of organisms, but on the large scale, Spencer believed that progress was the main trend. Plumtre relied on Spencer's law of progress to claim that what came later was more advanced than the former. But if the universe was like a phoenix, then it had periods of decay. In those decaying periods, what came later should be worse than the former. Plumtre did not attempt to address this problem in her work. She also ignored the second law of thermodynamics and the implication of entropy. According to this law, the usable energy of the universe was decaying, and consequently the universe

would run out of fuel and end in a heat death, which seemed incompatible with a phoenix-like universe.

Plumptre also made use of Spencer's philosophy of the Unknowable. Many Christian critics claimed that this philosophy was pantheistic. In their views, pantheism was more primitive than Christian monotheism, and they implied that, if Spencer's philosophy was pantheistic, then it was intellectually inferior to their theology. Plumptre also considered Spencer's philosophy pantheistic, but she praised Spencer since she saw pantheism as a better religious position than Christian monotheism. Plumptre's definition of pantheism—'a belief in a Reality of which Nature is the substantial manifestation' (263)—was structurally the same as Spencer's definition of the Unknowable. Considering that Plumptre read and liked Spencer's philosophy when she was young, she might have derived her definition of pantheism from Spencer's definition of the Unknowable. Spencer claimed that the belief in the Unknowable was the essence of all true religions, and Plumptre also claimed that pantheism was the essence of all religions. Throughout Plumptre's *General Sketch*, one of her main arguments was that pantheism was a central doctrine of various religions and philosophies. She claimed: 'it may well be doubted whether any single doctrine can count so many witnesses to its truth as that of Pantheism. Certainly the only one which can at all numerically approach it is Agnosticism, and even its believers frequently, perhaps almost unconsciously, imply a belief in Pantheism' (262).

In her argument that agnostics also held pantheistic views, Plumptre quoted extensively from Spencer's *First Principles* and *Principles of Psychology*. She quoted seven pages from the first part of *First Principles*, including Spencer's claim that 'Religion and Science are but two aspects of the One Inscrutable Power that manifests itself in all phenomena' (267). She quoted a page from Spencer's concluding chapter in the first volume of *Principles of Psychology*. In this quotation Spencer claimed that psychological research taught us that we could not think of matter without mind or mind without matter, and this coordinated with the conception of the one unknowable

reality which was neither material nor spiritual.⁶⁴⁴ Plumptre observed: 'if I read Mr. Spencer alright, all Matter and all Mind; all religion and all Science; in a word, the whole of mental, moral, and material phenomena are in his opinion but the various manifestations of the great incomprehensible Unity that runs through all' (268). She claimed: 'We do not think we could quote a more suggestive passage as an argument for the truth of Pantheism than the above passage from the great philosopher of this century' (314–15).

Plumptre considered that 'Pantheism asserts that there is a Reality—incomprehensible indeed, because infinity—but displaying itself without possibility of contradiction through every act and phase of Nature' (315). Spencer asserted exactly such a reality; thus, Plumptre claimed that Spencer's words spoke the truth of pantheism. Spencer was often viewed as an agnostic in Victorian Britain, since he talked about reality being 'unknowable'.⁶⁴⁵ In Plumptre's view, 'Perfectly consistent Agnosticism would doubt whether there were a Reality at all' (262). But she saw that, in her present day, agnostics were not holding to perfectly consistent agnosticism, rather, 'either conscious or unconscious' (262), like Spencer, they believed in an unknowable reality. Thus, by using Spencer as a representative of agnostics, Plumptre made her claim that agnostics usually held pantheistic views. She implied that Spencer's philosophical sources, William Hamilton and Henry Mansel, and famous agnostics, such as Huxley, were also pantheistic in their view of reality.

5.2.3 James Allanson Picton and the Philosophy of the Unknowable and the Evolution of Life, Ethics, Consciousness, and Religion

Picton wrote about pantheism during two separate periods of his life. The first period was from the late 1860s to the early 1870s when Picton worked as a clergyman in

⁶⁴⁴ See Plumptre, *General*, II, pp. 267–68. The quotation from Spencer can be found in Herbert Spencer, *Principles of Psychology*, Second Edition, 2 vols (London: Williams and Norgate, 1870), I, p. 627.

⁶⁴⁵ Timothy Fitzgerald, 'Herbert Spencer's Agnosticism', *Religious Studies*, 23 (1987), 477–91.

Congregationalist chapels. His pantheistic ideas during this period were published in the monograph *The Mystery of Matter* in 1873 in which he proposed his vision of a Christian pantheism as the future of religion. His use of the idea of evolution was limited in this work. In most cases, he tried to reconcile the idea of evolution and his doctrines of pantheism, countering atheistic interpretations of evolutionary theories. The second period was at the end of the Victorian age, when he retired from his MP work and moved to Wales to write about philosophy. During this period, he rebuilt his Christian pantheism drawing upon Spencer's idea of the Unknowable, Spinoza's idea of reality and God, and Spencer's and other's progressive evolutionism. He now called his pantheism 'the Religion of the Universe' rather than 'Christian Pantheism' and saw it as the religion that had survived the Victorian crisis of faith and as the inevitable religion of the future. He wrote two published books on this topic—*The Religion of the Universe* (1904) and *Spinoza* (1907). In these works, he did not just seek to reconcile evolution and pantheism, but he used the idea of evolution actively and intensively as the building blocks of his pantheism. Although these books were published a few years after the end of the Victorian era, they are discussed in this section because they constituted extensions of work Picton had begun in the 1870s rather than new twentieth-century ideas.

In the early 1870s, Picton was already familiar with Spencer's philosophy of the Unknowable. In Picton's essay, 'The Philosophy of Ignorance', Spencer was cited as 'one of the greatest among modern philosophers' who confirmed the existence of the mysterious reality.⁶⁴⁶ In the essay, 'The Essential Nature of Religion', Picton used Spencer's approach to reconcile science and religion. He wrote that 'Mr. Herbert Spencer [...] [makes] the reconciliation between science and religion to lie in the recognition on both side that "the Power which the Universe manifests to us is utterly inscrutable"'.⁶⁴⁷ There were several similar uses of Spencer's philosophy of the Unknowable in the essay 'Christian Pantheism'.⁶⁴⁸ In these essays, Picton used

⁶⁴⁶ Picton, *Mystery*, p. 99.

⁶⁴⁷ *Ibid.*, p. 219. He quoted from Spencer, *First Principles*, p. 46.

⁶⁴⁸ Picton, *Mystery*, p. 369,

Spencer's philosophy as an authoritative confirmation of his pantheistic idea of the mysterious reality of which all things were manifestations.

Spencer rejected pantheism in *First Principles* and claimed that the self-created universe in pantheism was unthinkable and pantheism irreligiously claimed knowledge of the Unknowable. Picton was aware of Spencer's position and attempted to deal with it. In the essay 'Christian Pantheism', Picton claimed that he did not need any of the three suppositions of the origin of the universe Spencer criticised. He wrote: 'We need not think of the universe as "self-existing." We only know that it exists, and that it impresses us as everlasting' (413). He claimed that 'pantheism has nothing to do with "self-creation." [...] For the notion of any absolute beginning, whether called "self-evolved" or anything else, seems totally inconsistent with genuine pantheism' (413–14). He observed that Spencer denied teleological evolution in which the universe constantly changed towards potential images of the universe, and he supported Spencer and claimed that pantheism did not need this either. The third supposition Spencer criticised assumed an external creator. Picton did not specifically talk about Spencer's criticism, since he had already repudiated this assumption in many parts of his book. As for Spencer's criticism of pantheism as claiming knowledge over the Unknowable, Picton always claimed that his reality was mysterious and he did not claim knowledge over it. By claiming both that pantheism needed not to assume a self-existent universe, a self-created universe, or an external creator, and that pantheism did not claim knowledge over the ultimate reality, Picton dismissed Spencer's criticisms of pantheism and reconciled his pantheism with Spencer's synthetic philosophy.

Picton also discussed many evolutionary ideas. First, he recognised that evolutionism might be used atheistically to deny divinity, and he argued that progressive evolution was divinely driven. In the essay 'Mystery of Matter', Picton wrote: 'To me the doctrine of an eternal continuity of development has no terrors; for believing matter to be in its ultimate essence spiritual, I see in every cosmic revolution a "change from glory to glory, as by the Spirit of the Lord"' (55–56). In the essay 'The Essential Nature of Religion', Picton made it clear that 'All evolution implies a divine Power' (218). In the essay 'Christian Pantheism', he gave a reason why evolution was divinely driven. He considered that if there were only mechanical forces, then things would either run in

perfect harmony, or become disintegrated and dissolute when there was a tiny want of harmony. He reasoned that '[t]he very fact that things do not work smoothly, and that instead of degenerating into deeper discord, they produce higher harmonies in the progress of evolution, seems proof demonstrative, that at the heart of the world is something more than molecular mechanics. Whenever healing power is, there is life. And so any great process of redemption is bright with the tokens of a Living God' (482).

Secondly, Picton used the evolutionary view of species and the theory of natural selection to argue against the personal image of God. He argued that the creation of species in traditional Christianity was depicted as analogous to human creation, and that when the evolution of species had become widely accepted, such an anthropomorphic form of creation as well as the personal image of God had become very difficult to believe. He wrote: 'it was comparatively easy, if only the metaphysical difficulties could be ignored, to conceive of each organism as the result of a personal design, comparable to our own consciousness of mental effort' (336), '[b]ut now, [...] it is a generally [...] established opinion that all the species of living things [...] are the result of development, by ordinary processes of natural generation. [...] And when we candidly estimate all that is necessarily involved in such a belief, we must feel that the difficulty of insisting upon the analogy of human design is no longer one of merely metaphysical contradiction, but of actual fact' (337). Picton also argued that the theory of natural selection posed great difficulties for the personal image of God. He pointed out that 'the struggle of life' (338) did not seem to be a method of design that man would adopt, and thus the analogy with God was hard to maintain.

Thirdly, Picton used progressive evolutionism to argue against the Christian doctrines of the devil, evil, and sin. Picton argued that Christians believed that both the devil and humans had fallen from good to evil and sinful states, however, 'the theory of [...] evolution [...] knows no Fall' but only 'advances from the imperfect towards the perfect, from the beast to the saint', and so Christians faced 'difficulties which they never saw before' in front of the theory of evolution (474).

At the turn of the century, Picton developed a more systematic pantheism. Rather than citing Spencer's philosophy of the Unknowable as an evidence, he rebuilt his pantheism

upon this philosophy. Picton considered that Spencer had unveiled the future of religion and the best solution to the conflict between science and religion by the philosophy of the Unknowable, but that Spencer had not fully developed it, so that he felt the need to draw it out by himself. He wrote in the first chapter of *The Religion of the Universe* that ‘in his [Spencer’s] *First Principles* [...] what is suggested is a recognition on both sides that Science and Religion alike contemplate the same Infinite Unknowable Being, whose finite phases may indeed, in different aspects of them, be harmoniously interpreted by each, but whose absolute Totality is beyond the conception of either’.⁶⁴⁹ He observed that ‘the advantage of such a reconciliation [is that it is] permanent in essence but in form continually adaptable to increased knowledge of finite things’ (10–11). He also considered that Spencer’s synthetic philosophy ‘was, after all, limited to an exposition of the finite working of phenomenal evolution’ so that to propose a future religion from this philosophy ‘was not within his purpose’ (41). Picton claimed that ‘no one else has tried to do just what he [Picton] has in view; and in the last years of his life he feels it an imperative duty to show, if he can, the adaptability of Mr. Spencer’s solution to relieve man of all the moral and spiritual anxieties, distresses, and struggles, of which during the greater part of the nineteenth century he suffered his own share with the people of that age’ (41).

Picton developed Spencer’s philosophy pantheistically by claiming ‘the Unknowable as God’ (71). His main reason for this identification was that religious feelings were aroused by conceiving the Unknowable and its infinity, and that the Unknowable was the God or gods of other religions when their conceptions of God were strictly examined. He used Spencer’s view that the recognition and worship of the Unknowable was the essence of true religion. Picton claimed that ‘[t]he unknowableness of God, “in the strict sense of knowing,” has been a commonplace of religion since the dawning of human consciousness’ (71). He identified Spencer’s Unknowable with other people’s God, claiming that ‘his [Spencer’s] “positively unknown” is what ordinary people call “the Eternal”’, and that ‘this “Ultimate Existence” he [Spencer] preferred to call the

⁶⁴⁹ Picton, *Religion*, p. 10.

Unknowable. And, after all, it is unknowable in the strict sense of knowing. In this acknowledgement all the greatest saints are at one with Herbert Spencer'.⁶⁵⁰

In a later published work on Spinoza, Picton also identified Spencer's Unknowable with Spinoza's Substance or God. Picton wrote: 'By "God" he [Spinoza] means the "Universe"'; 'How should we think of this "absolutely infinite Being" [...]?' The late Herbert Spencer was content to regard Him as unknowable, and in this I have elsewhere maintained he was quite right'.⁶⁵¹ After some analyses of Spinoza's thoughts, he claimed that '[f]or Spinoza, [...] the reconciliation between religion and the science of his day lay also in a recognition of the Unknowable'.⁶⁵² He also made it clear that people intuitively conceived the Unknowable as God: 'the ultimate constitution of things, as an infinite number of unbeginning and endless series, is unknowable. But it is also true that we may have an intuition a Unity which is God'.⁶⁵³

Beyond the use of Spencer's concept of the Unknowable, Picton also made several new uses of evolution in *The Religion of the Universe* compared to *Mystery of Matter*. First, Picton extended his view that evolution was divinely driven. His new claim was that variation and natural selection were all divinely driven, and the process of natural selection on random variations caused no waste. He claimed:

eminent men of science have admitted that natural selection does not explain the impulse to variation without which selection would be impossible. But on our view of God, that impulse to variation is the manifestation of his life urging growth toward a destined end. [...] we assume that in any growing world [...] the tide of the life of God is rising in organic forms and stimulating variations, which furnish the opportunity for "natural selection".⁶⁵⁴

⁶⁵⁰ Ibid., pp. 50–51.

⁶⁵¹ James Allanson Picton, *Spinoza: A Handbook to the Ethics* (London: A. Constable and Company, 1907), pp. 5 and 7–8.

⁶⁵² Ibid., p. 60.

⁶⁵³ Ibid., p. 60.

⁶⁵⁴ Picton, *Religion*, pp. 99–100.

He argued that we may see unfitted variations as failures and wastes, but 'the notion of failure is essentially human, and is caused only by our confinement to a limited point of view. While therefore we insist that what we call failure must surely find a place in the harmony of the Whole' (104). In Picton's view, 'nothing is wasted' (100) in the process of natural selection on variations, and all served the harmony of the Whole which was God.

Picton also claimed that natural 'selection is not to be regarded as a matter of haphazard' (100). He used what we may call recapitulation theory or the law of parallelism to support this view.⁶⁵⁵ Picton mentioned Karl Ernst von Baer (1792–1876) and others' recognition of the similarities in developing patterns of embryos of different species. He claimed that 'it is more rational to think that the same mysterious power which now co-ordinates the struggle of cells in an embryo so that the new type shall be produced, did also in those primeval times co-ordinate the apparently random action of selection so as to secure the true line of evolution' (102). Picton here seemed to adopt the design argument, which asserted that God designed the process of evolution. He denied this by writing that 'I am not repeating the "argument from design"; [...] I only urge that in the evolution of species there is as much evidence of life acting by "law," as there is in the growth of a tree' (102). He asked readers to conceive the process of evolution 'as an infinitesimal manifestation of an Infinite Life' (102).

Secondly, Picton suggested an evolution of consciousness to help readers to conceive a non-personal God. His idea of consciousness was based on William Clifford's 'psychological atomism'.⁶⁵⁶ Picton pointed out that 'Professor Clifford proposed as a hypothesis the universal inherency of elementary consciousness or "mind-stuff" in matter', and Picton considered that 'at any rate from the amoeba to the oyster, and up to the eagle, the elephant, the man, we can hardly help reading, in the phenomena they present, almost infinitely grade forms of consciousness' (83). He pointed out that

⁶⁵⁵ Bowler, *Evolution*, pp. 121–24.

⁶⁵⁶ A term used in Albert C. Lewis, 'Clifford, William Kingdon (1845–1879)', in *ODNB* <<https://www.oxforddnb.com/>> [accessed 12 August 2018].

‘though we are all evolutionists now, and none of us would deny the imperceptible graduation of life-sense upwards from the elementary consciousness of matter, yet most of us draw the line at twentieth-century man, and say that between this and God there is nothing. Therefore God must be like that’, i.e., God must be human-like (84). He suggested readers conceive that human consciousness was not the highest form of consciousness in evolution, that there were many grades of consciousnesses higher than humans’ consciousness, and that the higher they were the less human-like they were. With this idea, Picton considered that we could be convinced that God as the infinite consciousness would not be human-like.

Picton also believed that higher forms of consciousness would evolve from the current human consciousness. He gave an example of human society. He speculated that human individuals were to human society what cells were to an organism. In this sense, if an organism had a higher consciousness than its individual cells, then human society, when its individuals were highly integrated, would show a higher consciousness than human individuals. He claimed: ‘Not only are social organisation and the general consciousness which we call public opinion merging the individual in the greater soul, but physical invention is promising to make an aggregate of individuals resemble to a startling degree the integration of protozoan cells in metazoic organisms’ (87). Picton used the telephone, telegraph, and railway, as examples to show that such an aggregate was possible. He imagined:

The telegraph and telephone are in their infancy, but already they appear capable of bringing all the world into as constant and intimate communication as that which is effected by the neural system for the cells of the human body. Railways and other channels of trade are like the circulation of the blood. [...] We can set no bounds to this vivifying process. [...] A hundred thousand years hence all human society may be one gigantic man, with a single consciousness integrated out of thousands of millions [...].⁶⁵⁷

⁶⁵⁷ Picton, *Religion*, p. 87.

He also imagined that when human society became a single consciousness, ‘no one will need to buy a newspaper in order to know of the fortunes of incorporated Man’, and ‘any one in Europe rising in the morning, will know as much as the feelings of his brethren in Japan or New Zealand as he does now of the condition of his fingers and toes’ (87).

Picton claimed that this formula of the evolution of consciousness—lower forms of consciousness integrated into higher forms of consciousness—had ‘no bounds’ (87). He implied that human societies or even the earth, the sun, and other celestial bodies could integrate into higher forms of consciousness. In this grand picture, Picton pointed out that human personality was surely not a final product, as it was hard to imagine that human personality would be preserved in higher forms of consciousness. Thus, he claimed: ‘The conceit we have of our little self-centred life-sense, as the perfect mode of being to which the Eternal Himself must conform, is really a base idolatry’ (88).

Sedgwick had pointed out, in his criticism of *Vestiges*, that there was a ‘crazy’ dream among materialistic pantheists, who imagined that God had evolved from natural processes.⁶⁵⁸ Picton’s idea was quite close to this crazy dream as he imagined an infinite evolution of consciousness, but for him, God existed eternally and was not the result of evolution. His vision of the evolution of consciousness was used to convince readers that God should not have human personality, and God was not seen by him as an evolved consciousness. For Picton, evolution only happened to finite things, but not to the infinite God.

Thirdly, Picton used an evolutionary ethics as his pantheistic ethics. In the 1870s, Picton had briefly proposed to see moral instinct as an evolved factor, but he left out the essence of righteousness.⁶⁵⁹ In the 1900s, he proposed evolution as the essence of righteousness and devolution as the essence of wrongness or evil. Picton claimed that ‘what we feel as morally good, looks in the direction of evolution or integration, while what we feel as morally evil, looks in the direction of disintegration’, thus he claimed

⁶⁵⁸ Sedgwick, *Discourse*, p. clxxv.

⁶⁵⁹ Picton, *Mystery*, p. 480.

that 'the relational conditions essential to morality alone exist, is concerned with evolution rather than devolution, with integration rather than disintegration.'⁶⁶⁰ He illustrated that 'mutual loyalty, brotherly love, purity, honour, development of capacity and mastery over nature' (282) were all concerned with evolution and integration rather than devolution and disintegration. Picton held that evolution was divinely driven, and he also accepted that devolution was divinely driven. He claimed that 'while both opposite sets of forces and processes are generally the results of the divine energy, the business and the duty of humanity are bound up with the positive processes of evolution toward a higher state' (282). It can be inferred that, like Spencer who viewed evolution as a general trend despite the existence of particular evolutions and devolutions, Picton considered that God as a whole was always evolving thus was always good, and since there were minor evolutions and devolutions in parts, thus there were good and evil in parts.

Such an ethics based on evolution may appear materialistic. What separated Picton's pantheistic ethics with materialists' evolutionary ethics was his view that moral evolution was divinely driven. In order to explain how moral evolution was divinely driven, Picton proposed that the loyalty of parts towards the whole was the power that motivated moral evolution. He wrote that 'loyalty to some greater whole of which the individual forms an integral part, and, where necessary, self-sacrifice to that greater whole, is the most important spiritual energy concerned in social and moral evolution' (282).

Fourthly and lastly, Picton placed pantheism in the zenith of the evolution of religion and reconciled pantheism and Christianity in this picture. In the 1900s, Picton no longer called his pantheism Christian pantheism, but rather the Religion of the Universe. He claimed that religions from fetishism to Christianity were all 'phases of the gradual evolution of the ultimate religion of the Universe' (151). Since he considered that there was no waste and failure in the process of evolution, he viewed all religions as necessary steps of the evolution of religion. Picton often claimed that he did not deny the necessity and value of Christianity, but he asked to allow Christianity to further evolve

⁶⁶⁰ Picton, *Religion*, pp. 281–82.

into the religion of the universe. When discussing the Church and its service, Picton claimed that '[n]ot an abolition of the Church, but farther evolution is our need' (316). He also claimed that 'the new reformation will probably differ from the former [the Lutheran Reformation] in achieving its work by degrees almost as imperceptible as those of physical evolution' (317). He meant that the evolution of the Church towards the religion of the Universe would be as slow as physical evolution. Picton claimed that the recognition of the religion of the universe 'does not cancel the value of historical religions as such. For the whole religious evolution of man has been energised by the divine spirit through the finite experience of the creature' (350). For Christianity, he wrote that 'I have pleaded that for us of the Western world, Christianity is far the most important of historical religions, while the experiences of its saints come nearest to us and are most susceptible of realisation in our own inner life. Yet it can only be as a phase of the Religion of the Universe, and not as the universal religion itself' (350). Picton reconciled Christianity and pantheism by placing Christianity as a necessary step in the evolution towards the religion of the Universe, or pantheism.

5.2.4 Alfred Barratt and the Evolution of Consciousness, Ethics, and Religion

In his book, *Physical Ethics*, Barratt used the general idea of evolution and Spencer's philosophy of life to propose an evolutionary view of consciousness, an evolutionary ethics, and an evolutionary view of religion. By combining these three components, he made the claim that pantheism was the next step of religious evolution. As they were highly intertwined, I introduce these three components one by one and then show how he reached his pantheistic conclusions.

The first component is Barratt's view of consciousness. As a disciple of Spencer, Barratt's major difference with Spencer was his view of consciousness. Spencer considered that consciousness was a function of highly developed minds and it only existed in man and higher animals, but Barratt considered that consciousness was rather the basis of all kinds of mind. Barratt wrote that 'if he [Spencer] takes consciousness in its strictest meaning, as nothing more than the phenomena by which

it is manifested to us, these phenomena must be resolvable into others before them, and there must be at any rate the elements of consciousness in inanimate matter'.⁶⁶¹ In Barratt's view, everything had consciousness including lower animals and inanimate matter. For him, a thing's consciousness was all the phenomena, interior and environmental, that presented to the thing.

What then was the relationship between mind, matter, and consciousness? Barratt did not strictly define these terms. He claimed that 'mind (or consciousness in the narrow sense) and matter, are but two parts of our whole self, or consciousness in the larger sense; and that the former of them is a copy of the latter' (361). In the relationship between mind and matter, Barratt was a monist. He claimed that mind and matter 'are identical and inseparable' and mind was 'a copy' of matter, but the copy might not be full or accurate.⁶⁶² Though Barratt separated the broader and narrow senses of the term 'consciousness', he tended to identify mind and consciousness in the sense that they both denoted the whole realm of phenomena presented to an individual; and he also tended to identify the individual with such a mind or consciousness.

There was a hierarchy of the extent of consciousness in Barratt's philosophy, and this was the basis of his theory of the evolution of consciousness. Barratt used a similar definition of life to that of Spencer: 'All Life depends upon adaptation of an organism to external media; and by the extent and completeness of this adaptation the degree of Life in the scale of evolution is determined' (33). He considered that the extent of the consciousness of a thing depended on its inner functions and its interactable environment. The more inner functions it had, the more inner phenomena were presented to its consciousness, and thus the wider its consciousness was. Also, the more inner functions it had, the more environment with which it could interact; and the more environment it interacted with, the more outer phenomena were presented to its consciousness, and thus the wider its consciousness was.

⁶⁶¹ Barratt, *Ethics*, p. 40.

⁶⁶² *Ibid.*, pp. 111–12.

Barratt incorporated his view of consciousness with the popular view of the evolution of life. He used Spencer's *Principles of Psychology* as a scientific source.⁶⁶³ Barratt believed that the lowest animals' (single-cell organisms) consciousnesses were very narrow due to their limited organic functions and consequently limited interactable environment. They only had limited sensation. In the process of evolution, organisms became more complex with more functions and thus more interactable environment. Barratt identified four functions which had appeared successively during evolution: 'sensation', 'memory', 'reasoning', and 'knowledge'; and four kinds of interactions with environment which had appeared successively: 'reflex action', 'lower instinctive action', 'higher instinctive action', and 'voluntary or intentional action'.⁶⁶⁴ Consciousness was extended while life gradually possessed these functions and interactions with environment. Humans had possessed all these functions and interactions, and thus they had much a wider consciousness than single-cell lives.

Barratt did not consider the evolution of consciousness ended in human beings. He inferred that evolution would continue and that the extent of consciousness would keep increasing until it covered everything. Barratt imagined that in the next stage of evolution, humanity would evolve a kind of universal consciousness, like an omniscient and omnipresent God. This universal consciousness was, in Barratt's view, an exact representation of nature while our current consciousness was a partial and inaccurate representation of nature. He described his vision of consciousness:

If mind be associated not with some portions of nature only, but with the whole sphere of phenomena, a more thorough consciousness of the ultimate unity of our whole self is attained, and a considerable step made towards that final idea of human development in which mind becomes a perfect reproduction of nature, and its sequences completely assimilated to the laws of the outer world; an ideal which

⁶⁶³ Ibid., p. 33. Spencer, *Principles of Psychology*, Part III, Chapter VIII.

⁶⁶⁴ Barratt, *Ethics*, pp. 36–39 and 57.

we embody in the conception of a Deity in whom thought and existence, subject and object, are re-united, whose self is nature, and whose mind is the universe.⁶⁶⁵

In order to understand Barratt's mechanism of this future evolution of consciousness, it is important to grasp the second component of Barratt's philosophy—his evolutionary ethics. Barratt proposed an ethical system built on the physical sciences without assumptions of supernatural interventions. He argued that our 'moral sense' was a physically evolved function like our other senses, such as the sense of light in our eyes, and he also identified pleasure with moral goodness and treated the action of pursuing pleasure and avoiding pain as the essence of morality.⁶⁶⁶ In his theory, the behaviours by which animals acquired benefits and avoided harm were predecessors of human morality, and they were in essence the same as the moral actions in humans, though different in complexity. Barratt gave a speculative evolutionary history of morality alongside the evolutionary history of consciousness. He considered that the moral senses and actions increased in kind and complexity as the functions and interactions of organisms increased. He proposed that through the process of evolution, the simple and reflexive pursuit of benefits in single-cell organisms had evolved into higher moral actions in humanity. It is worth mentioning that Barratt viewed the evolution of morality in humans as an organic process. Humans' detailed moral creeds were considered organically inheritable by Barratt.⁶⁶⁷

The moral function of sympathy was considered by Barratt to be the key to the future evolution of humanity. He defined sympathy as 'the perception of emotional phenomena in others' (84). When a person perceived an emotional phenomenon in another person, 'the idea of a similar sensation in himself immediately follows' (84). In this sense, Barratt claimed that 'Sympathy is therefore nothing more than 'a readjustment of self love'' (87). Because of this, Barratt considered that sympathy was

⁶⁶⁵ *Ibid.*, p. 361. Notice that Barratt used mind as a synonym of consciousness here.

⁶⁶⁶ *Ibid.*, pp. 49–50 and 12–17.

⁶⁶⁷ *Ibid.*, p. 62.

an extension of self or consciousness. He saw sympathy as the foundation of many higher moral actions, such as love, altruism, and patriotism.⁶⁶⁸ He considered that when two people loved each other, an individual's consciousness was extended to another individual, and that in patriotism an individual's self or consciousness was extended to a country. He wrote that in patriotism, 'man becomes no longer an individual but a member of an organism, he identifies himself with that organism, and wishes to do good to it as to himself' (94). Barratt viewed these extensions of the consciousness of human individual as a sign of evolution. He considered that human's consciousness would eventually extend to the whole universe, and in that situation a human individual would see the whole universe as himself. He wrote that 'as man sees in nature more and more analogies to himself, and eventually views it as a great organism of which his own body and actions are merely members, so must he at last by the very laws of his nature look upon it as a great living mass of consciousness like his own' (114), and that 'as man is ever putting himself into the bodily forms of other men, so will he eventually put himself into the universe' (115). Thus, the way to acquire the universal consciousness, proposed by Barratt, was to see the universe as a great consciousness, and then to use sympathy to extend human consciousness into this great consciousness.

The third component of Barratt's philosophy concerned the evolution of religion. Barratt's view of religion was different from Spencer's. He did not consider the Unknowable as the essence of true religion. His view was instead close to atheistic philosophers Ludwig Feuerbach (1804–1872) and Karl Marx, who viewed God as man's imaged ideal self.⁶⁶⁹ Barratt claimed that '[r]eligion is a consequence and an embodiment of the universal tendency to progress, a vague foreshadowing of future knowledge. It is thus a dream of perfection' (118). In regard to the relationship between science and religion, Barratt wrote that 'the religion of the present must be the science of the future, [...] each age contains the prophecy of the next, and it speaks by its religion' (120), and that 'Science and Religion are truly one, for Religion is but a shadow of future Science' (224). Thus, for Barratt, Religion at any given time in history expressed

⁶⁶⁸ Ibid., pp. 89 and 94.

⁶⁶⁹ Fichman, *Evolutionary Theory and Victorian Culture*, p. 173.

mankind's dreams of perfection in that particular age, and science fulfilled these dreams. Barratt also considered that when the dream of an age was fulfilled, it was no longer a dream, and man would make new dreams, and consequently, religion changed or evolved to be the vehicle of the new dreams. Barratt wrote that 'the highest minds of all ages have been led by the conception of an ideal future and of a Being more perfect and holy than themselves. These die not with the circumstances that occasion them, for their real source is human nature itself, and they descend to its successive generations. They are the steps of evolution of man' (119–20). He believed that saints and prophets of every age foresaw the future perfection of their age, and they expressed these visions in religion. The religions that bore visions of future perfection were considered by him to be the true religions, and he called other religions 'the Religion of Ignorance' (125). Barratt was against Auguste Comte's secular religion, the Religion of Humanity, since it contained no prophecy of the future. He claimed that 'the "Religion of Humanity" [...] fails in the very ground-work and essence of Religion, the ideal or imaginative element; it substitutes past for future, history for prophecy, memory for aspiration, experience for faith' (374).

Barratt considered that the dream Christianity carried was 'the great idea of a universal humanity' (125). He considered that Christianity was the first religion that called humans to love their neighbours as they loved themselves, and that this united humanity. Barratt foresaw that '[a]t the foundation of Christianity the work that science promised to perform was the unification of humanity; and this work it has completely executed. It now points out in the future, as its next task, the unification of the universe; and this must stamp the character of the religion of succeeding ages' (126). He claimed that 'as the Christianity of the past was pre-eminently a religion of humanity; so must its successor in the future be nothing less than a religion of the universe' (126). Barratt used the same phrase as Picton, the 'religion of the universe', to designate the future religion. He knew what he proposed was pantheism as he claimed that 'in the future expression of man's idea of the relation of the Deity to the universe we may anticipate a strong leaning to Pantheism' (129). In Barratt's view, pantheism represented man's

dream of becoming omniscient and omnipresent and of becoming one with the universe.⁶⁷⁰

Barratt also reconciled Christianity and pantheism by envisioning Christianity as a step in the evolution of religion and pantheism as the next step. Barratt claimed that a pantheistic tendency had existed in Christianity. He wrote: 'the concept of Providence was no longer one of direct external interference, as in the old mythology, but of an indwelling Spirit, the sequences of whose thoughts are represented to us in the events of nature; in whom everything that is lives and moves and has its being. The whole tendency of later experience is to confirm and expand this Pantheistic belief' (129–30). In Barratt's view, the Christian concept of God was changing from an absolute supernatural Being to an immanent Being, and he saw this as the sign of pantheism.

Pantheism, however, was not the end of Barratt's religious evolution. Barratt wrote: 'Pantheism has been the religion only of the greatest minds; but as by the process of evolution the great minds of one age become ordinary in the next. [...] its now imagined forms must in turn give way to a higher religion, which perhaps now our minds are unable to grasp. [...] For each religion is but the dream of its age' (131).

Barratt died at a young age before he could fully develop his pantheistic ideas. There were only dozens of pages on religion in Barratt's publications. He left many questions unanswered such as why the universal consciousness acquired by sympathy could be seen as similar or even identical to the universal consciousness of the universe itself. Though he was a member of the Church of England, he seemed to treat religion in the way of atheistic thinkers. The *Examiner* criticised that 'Mr Barratt would have done better had he stuck to philosophy and let religion alone. [...] he becomes as a rule hopelessly unintelligible, and, when not absolutely unintelligible, lays himself open to the charge of being profane'.⁶⁷¹ Nevertheless, although lacking in detail, Barratt showed us a quite unique vision of a pantheistic future.

⁶⁷⁰ Barratt, *Ethics*, p. 128.

⁶⁷¹ Anon, 'Physical Ethics or the Science of Action', *Examiner*, 3234 (1870), p. 53

5.3 Conclusion

The idea of evolution could be made fully compatible with Christian monotheism in Victorian Britain as there were many monotheistic evolutionists, such as Alfred Russel Wallace, Charles Lyell, and St George Mivart. The idea could also be made compatible with pantheism, as there were several advocates of pantheism who used it to support their views. Even before the four advocates of pantheism in this chapter came to use evolution in support of pantheism, many critics already considered the idea of evolution and the most famous evolutionary figures—Herbert Spencer and Charles Darwin—pantheistic, as we have seen in Adam Sedgwick’s criticism of *Vestiges* in 1850, in several reviewers’ reviews of Spencer’s *First Principles*, and in a report of the writer Richard St John Tyrwhitt. The German pantheistic tradition also influenced German scientific practitioners’ interpretations of evolution, as we have seen in Ernst Haeckel who interpreted evolution as supporting monism against supernaturalism.

We can draw several conclusions from the comparison of the uses of evolutionary theory by advocates of pantheism. Plumptre, Picton, and Barratt used a genealogical and progressive language in evolutionary theory, claiming that pantheism was at the top of the evolutionary chain of religion. They drew out a progressive and evolutionary picture of religion in which fetishism, polytheism, monotheism, and pantheism came into being successively throughout human history. Thus, they not only depicted pantheism as the most advanced religion, but also reconciled pantheism with other religions, especially Christianity, by placing them in a genealogical order. In such a picture, Christianity was no longer an opponent of pantheism, but a necessary predecessor of pantheism.

Advocates of pantheism could easily use the popular evolutionary cosmology as the cosmology of their pantheism. They used this naturalistic cosmology to argue against supernaturalism, especially the image of a personal God and Christian creationism. Also, since they directly used this scientific cosmology and welcomed its future changes, they claimed that pantheism was the religious position most in accordance with modern science. They demonstrated that pantheism was adaptable in a scientific nation.

Picton and Barratt both proposed evolutionary ethics as the ethics of pantheism. Pantheists were faced with a problem regarding evil: if nature was God and God was good, then there was no separation of good and evil, and all deeds humans saw as evil were in fact good. Though very different in detail, Picton and Barratt both held, in common with many evolutionary moral philosophers, that our moral sense, like other senses, had evolved through a natural process rather than being created by a supernatural God. They explained that our sense of good and evil was an acquired character like the sense of sight in our eyes. Picton considered that evolution and progress equalled to goodness. He argued that good and evil were only applicable to humans but not to God since from God's point of view, all things served general harmony which was progressive and ultimately good. Barratt identified good and evil with pleasure and pain, and he viewed all things as morally neutral on a universal level. They thus found different ways to explain away ethical problems of pantheism through evolutionary ethics. Plumtre did not propose an evolutionary ethics, but since she later became a secularist and proposed scientific ethics, she might have been sympathetic to this approach.

The idea of the universal consciousness was always an appealing feature of pantheism. Picton and Barratt made it more credible by developing theories of the evolution of consciousness. They proposed a hierarchy of consciousnesses from low to high, alongside the evolution of life. By induction, they predicted that there would be higher forms of consciousness in the future, higher than current human consciousness. They believed that the universal consciousness would be the end of the evolution of consciousness. God's consciousness was viewed by Picton as the highest consciousness, the universal consciousness, however, he did not consider that God had evolved.

In regard to scientific sources, all these advocates of pantheism used popular science sources, like Spencer's and Haeckel's books and the general ideas of evolution and progress that were abundant in various kinds of media. As far as I have read, none of them quoted Darwin's books and Darwin's name was rarely mentioned. The reason might be that Darwin's books were very technical and religiously neutral, while Spencer and Haeckel presented Darwin's and others' evolutionary theories in ways that advocates of pantheism found easier to use. Also, in the religious arena, advocates of

pantheism did not need to discuss the technical details of evolutionary theory. What they needed was the general idea that science supported a naturalistic history of nature, and this idea was abundant in Spencer's and Haeckel's works. Advocates of pantheism did not cite any evolutionary anthropologists, such as Lubbock and Tylor, when they proposed their evolutionary views of religion. The reason might be that the idea of religious evolution was popular enough while none of those famous anthropologists ranked pantheism as the highest religion.

Conclusion

The dissertation opened with two questions. First, why did some Victorian thinkers observe that pantheism had become common in Britain in the 1870s? Secondly, why did some consider science to be an important factor? In this dissertation, I have examined Victorian published writings that contained discussions about pantheism, and I have come up with an extensive historical account of pantheism and of pantheism and science in Victorian Britain. With this account, the dissertation provides an answer to the initial questions.

Overall, this dissertation has shown that pantheism in Victorian Britain was more of a theological and philosophical position than an organised religion or movement, since there were no pantheist churches, sects, or organs and most advocates of pantheism had little contact with each other. Three pantheistic traditions—the Spinozian and German idealistic philosophies, pantheistic poetry, and materialistic pantheism—affected Victorian thought throughout the entire era. Since the beginning of the era, pantheism had been viewed by many Victorian thinkers as a science-related religious position. They considered that pantheism influenced the scientific theories of European idealistic and materialistic scientific practitioners. They also observed that many pantheistic philosophies and theologies shared similar rationalistic and naturalistic doctrines with the scientific enterprise. From the 1830s to the 1850s, pantheism in Britain was generally rejected, as many Christians considered it a threat to Christian monotheism. The situation changed significantly in the 1860s when many thinkers began to criticise former prejudiced treatments of pantheism and proposed fairer treatments. Many advocates of pantheism emerged in the 1860s and the following decades defending pantheism as the best way to reconcile science and religion and to bring about a more stable condition of faith in Victorian Britain. They came from various religious backgrounds including the Church of England, dissenting Christian Churches, and the radical freethought camp. They reinforced the image of pantheism as a science-related religion. As science gained the status of the highest intellectual authority in the second half of the nineteenth century, many advocates of pantheism built pantheistic

doctrines upon scientific theories or interpreted scientific theories as evidence that supported pantheism. Some of them claimed pantheism as the most suitable religion for a scientific nation.

With this picture of pantheism in Victorian Britain, it is understandable that some Victorian thinkers considered pantheism to be prominent in the 1870s and science to be important in spreading pantheism in Britain. In the next two sections, I discuss the achievements of this dissertation and its implications for historical scholarship.

What Has This Dissertation Achieved?

There are three major achievements of this dissertation. It revises the religious map in Victorian Britain by adding pantheism into the existing picture. It shows many detailed relations between science and pantheism in Victorian Britain. Finally, it helps to better understand scientific practitioners against the religious background in Victorian Britain.

First, this dissertation redraws the map of the Victorian ferment of faith by showing a significant territory that is neglected. It is well-known by historians that religious beliefs in Victorian Britain were unstable due to fast social and intellectual changes.⁶⁷² Christianity, the traditional and national belief, was challenged from the outside by materialists, naturalists, and atheists, as well as from the inside due to conflicting views between denominations and among individuals. Many Victorian thinkers worried that such chaos might threaten the moral foundation of the nation and cause the country to degenerate, while many were thrilled by opportunities offered by this ferment of faith. They set forth to find suitable beliefs. Dozens of Christian sects were formed, agnosticism and spiritualism appeared, religious debates were all over periodicals. Historians are currently familiar with the efforts of monotheists, deists, spiritualists, materialists, agnostics, and atheists, but the efforts of pantheists are not counted.

I have argued and demonstrated in this dissertation that pantheism was significant in the Victorian ferment of faith. There were more than six thousand published articles mentioning pantheism. In these articles, pantheism was criticised as well as supported

⁶⁷² For example, Helmstadter and Lightman ed., *Victorian Faith in Crisis*.

by many Victorian thinkers. Pantheism in Victorian Britain was not a new church but was rather a theology and philosophy that could fit in various existing religions. It was not necessarily against Christianity, as there were many Christian advocates of pantheism. It could serve as a theology for religious people who refused to subscribe to any doctrines of any churches but who still believed in a God. It could also be included in rationalistic, naturalistic, and anti-supernatural schemes of radical thinkers. Advocates of pantheism from different religious backgrounds had different and often conflicting pantheistic doctrines. They could differ on central issues concerning the definitions of God and the world, the transcendence and the immanence of God, the personality of God, the relationship between God and man, the freedom of will, the foundation of morality, and the future of religion. What they shared was an anti-deistic, anti-naïve-materialistic, and anti-atheistic scheme, and a stress on the immanence of God. This complex situation is captured by my contextual definition of pantheism in Victorian Britain as a spectrum of views concerning the relationship between God and the world and involving a particular emphasis on the immanence of God to the extent that God and the world were inseparable. Many advocates of pantheism believed that assuming high degrees of the immanence of God could reduce the tension between scientific naturalism and religious supernaturalism, and thus could bring faith, at least its intellectual aspect, to a more consonant condition.

Secondly, this dissertation shows that pantheism was related to science in important ways. The history of pantheism in Victorian Britain adds a powerful example challenging the conflict thesis of science and religion, which posits a timeless conflict between science and religion. Many advocates of pantheism in Victorian Britain claimed that pantheism was a scientific religion in the sense that it allowed them to directly use science as the foundation of their religious worldview no matter how scientific theories changed in the future. While Christian monotheists might reconcile science and religion by restricting science to the natural world and religion to the supernatural world, advocates of pantheism presented pantheism as a religion that was at one with science. They usually implied that if God and the universe were the same or almost the same, the object of worship in religion and the object of study in science became identical. In this sense, scientific knowledge was knowledge about God, and religious worship could

be adjusted continuously according to the development of scientific knowledge, and thus there was no essential conflict between science and religion.

This dissertation also presents many detailed relations between pantheistic doctrines and scientific theories. I have highlighted that high-profile and wide-ranging theories designed to draw together many phenomena in an overarching way—the theory of the correlation of forces, the theory of the conservation of force, the doctrine of the indestructibility of matter, the matter-as-force theory, the idea of the uniformity of nature and the concept of living matter implied in chemical atomism, the nebular hypothesis, the theory of the evolution of life, and the theory the evolution of human society, mentality, ethics, and religion—were the most used scientific theories by Victorian advocates of pantheism. They interpreted these theories as supporting the pantheistic image of a living and united universe, which could be called a God. Some of them also used these theories to argue against supernaturalism by formulating a thoroughly naturalistic view of the world in which no supernatural power was needed. Hard scientific theories, especially those expressed in mathematical forms such as theories in energy physics, as well as technological developments were rarely mentioned by them. I have also demonstrated that not all Victorian scientific theories were friendly to advocates of pantheism. For example, the theory of entropy and the discrete model of atoms that pictured a dying or disunited universe could be troublesome for them, though they could find ways to get around these issues.

Thirdly and lastly, this dissertation shows that pantheism affected Victorian perception of scientific theories and of scientific practitioners. Historians are familiar with the influences of Christian monotheism, deism, materialism, agnosticism, and spiritualism upon the Victorians' perceptions of science and scientific practitioners. It is well known that Christian natural theology was strong in the first half of the nineteenth century with books like the *Bridgewater Treatises* providing safe scientific knowledge for society;⁶⁷³ that deism was considered by many Victorians the religious position of many naturalistic figures, such as the author of *Vestiges* Robert Chambers, who

⁶⁷³ For example, Topham, 'Science and Popular Education in the 1830s'.

believed in the existence of the supernatural but kept the supernatural away from science;⁶⁷⁴ that materialism was perceived by many Victorians in the second half of the nineteenth century as the outcome of science with John Tyndall as a famous representative of scientific materialism;⁶⁷⁵ that agnosticism was used by some scientific practitioners, notably Thomas Huxley, to try to keep themselves away from religious debates;⁶⁷⁶ and that spiritualism created new scientific investigations and scientific practitioners, like William Crookes (1832–1919), Alfred Russel Wallace, and Oliver Lodge (1851–1940), investigated spiritual phenomena.⁶⁷⁷

This dissertation adds pantheism to this picture. It shows that several scientific theories—especially the matter-as-force theory, the theory of living matter, and the evolutionary theory of life—and several scientific figures—notably Herbert Spencer, John Tyndall, Thomas Huxley, and James Hinton—often appeared in Victorians’ discussions of pantheism. Many critics treated these theories as if they were pantheistic doctrines and criticised these scientific figures for being pantheistic. Many supporters of pantheism used these theories or claimed these scientific figures as pantheistic philosophers and pioneers to further their pantheism. Scientific practitioners sometimes joined these discussions. Spencer rejected pantheism and argued against accusations of pantheism made against him, Tyndall promoted the pantheistic idea of living matter, and Hinton was himself a preacher of pantheism. Pantheism was one of the religious positions that came into the Victorians’ minds when they engaged with science.

⁶⁷⁴ For example, Michael Taylor, ‘Herbert Spencer and the Metaphysical Roots of Evolutionary Naturalism’, in *The Age of Scientific Naturalism*, ed. by Bernard Lightman and Michael S. Reidy (London: Pickering & Chatto, 2014), pp. 71–88 (p. 75).

⁶⁷⁵ For example, Lightman, ‘Scientists as Materialists in the Periodical Press’.

⁶⁷⁶ For example, Bernard Lightman, ‘Huxley and Scientific Agnosticism’, *BJHS*, 35 (2002), 271–89.

⁶⁷⁷ For example, Shane McCorristine ed., *Spiritualism, Mesmerism and the Occult, 1800-1920*, 5 vols (London: Pickering & Chatto, 2012), III, pp. vii and xvi.

This dissertation also helps to solve the Barton-Kim controversy regarding whether Tyndall was a pantheist. Barton argues that Tyndall was emotionally and intellectually greatly influenced by pantheistic thinkers, such as Kant, Schlegel, Fichte, Emerson, and Carlyle, and she thus claims that Tyndall was more of a pantheist than a materialist.⁶⁷⁸ Kim argues that ‘a transcendentalist trait was insistent in Tyndall’s philosophy, and it damages the claim made by Barton that Tyndall was a pantheist’, and thus he describes Tyndall’s position as ‘transcendental materialism’ rather than as pantheism.⁶⁷⁹ It seems Kim has taken a very strict definition of pantheism, in which there can be no any sense of transcendency. However, this dissertation shows that the term ‘pantheism’ in Victorian Britain was often used loosely. Many people were seen as pantheistic while they still believed in some sort of transcendency. The position now commonly called panentheism, in which God is both transcendental and immanent, was often included in pantheism in Victorian Britain. Within this context, Tyndall can be called and was indeed suspected by some of his contemporaries to be a pantheist, even though he believed in something transcendental.

What are Its Implications for Historical Scholarship?

The dissertation raises many important questions for historians regarding pantheism, pantheists, and the relationship between pantheism and science. In this section, I first discuss the implications of this dissertation for historians of religion concerning the study of pantheism in Victorian Britain and in the world. Secondly, I discuss the implications for historians of science and religion regarding the study of science-religion relations in Victorian Britain and the study of science-pantheism relations worldwide. Thirdly, I discuss the implications for historians of science regarding the study of science and scientific practitioners in the religious context.

⁶⁷⁸ Barton, ‘John Tyndall’.

⁶⁷⁹ Kim, *John Tyndall's Transcendental Materialism*, pp. 11 and 45–46.

For historians of religion, the big picture of pantheism across all times and locations is too simple. Only major schools and famous thinkers of pantheism are in our historical accounts, while there are potentially a large number of less famous pantheistic thinkers being ignored, like many of the advocates mentioned in this dissertation.⁶⁸⁰ They constitute an important part of history. The eight advocates of pantheism in this dissertation formed the philosophical, theological, and practical aspects of the history of pantheism in Victorian Britain, while well-known Victorian pantheistic figures, such as Samuel Taylor Coleridge, William Wordsworth, and Thomas Carlyle, mostly formed the literary aspects of the history. The history of pantheism remains incomplete and might lead to misconceptions if it only focuses on famous thinkers. Thus, the history of pantheism can be better written if we explore beyond elite figures.

The more specific case of the history of pantheism in Victorian Britain is also not yet comprehensive. I have had to work selectively, but future scholarship can build upon my initial findings using many sources available to gain further understanding of how pantheism was featured in Victorian religious life and debate. Private writings would constitute a good starting point to pursue this study. They can teach us more about whether a person really converted to pantheism and how pantheism benefited him or her in private life. Due to the constraint of time of a doctoral project, there are many possible pantheistic figures not explored in this dissertation, such as the politician and scientist George Campbell (1823–1900), the journalist and theologian Richard Holt Hutton (1826–1897), the writer and artist Samuel Butler (1835–1902), the poet and philosopher Constance Caroline Woodhill Naden (1858–1889), the philosopher Samuel Alexander (1859–1938), and the dean of St Paul's William Inge (1860–1954). These figures could be further studied to enrich our knowledge of Victorian pantheism and Victorian religion.

For historians of science and religion, there are opportunities to adjust the picture of Victorian science and religion by uncovering more uses of science in support of non-

⁶⁸⁰ For example, see the entry for pantheism in *Encyclopaedia Britannica*. William L. Reese, 'Pantheism', in *Encyclopaedia Britannica* <<https://www.britannica.com/>> [accessed 12 September 2018].

monotheistic religious positions. Currently, the uses of science by Christian monotheists are well-known, with the uses of science by deists, materialists, agnostics, atheists, and spiritualists being more or less studied, as these people often engaged in conversations with Christian monotheists. This dissertation shows that pantheism was also intertwined with these religious positions, and advocates of pantheism made important uses of science in ways that are currently not studied in the historiography. This negation may lead to the misconception that pantheism was not present in the context of Victorian science and religion. Chapters on pantheism and on advocates of pantheism can be added in books that involve Victorian science and religion, such as the eight-volume anthology of relevant primary sources *Victorian Science and Literature* (2011–12), the third volume of which is dedicated to the topic of ‘Science, Religion and Natural Theology’.⁶⁸¹ Victorian uses of science in support of pantheism as well as for other major alternatives to Christian monotheism can be further studied to balance out the current inadequate focus. Also, the British imperial context continues to be massively underexamined.

There are also opportunities to further study the relations between pantheism and science from the nineteenth century onward across the world. Pantheism has been promoted as a scientific religious position since the nineteenth century,⁶⁸² and the pantheist movement in the twentieth century also focused on establishing close relations between pantheistic ideas and scientific theories. We know that several famous people, such as the process philosophers Alfred North Whitehead (1861–1947) and Charles Hartshorne (1897–2000) and the physicist Albert Einstein (1879–1955), related pantheistic ideas with science.⁶⁸³ There were potentially more thinkers linking

⁶⁸¹ Gowan Dawson and Bernard Lightman ed., *Victorian Science and Literature*, 8 vols (London: Pickering & Chatto, 2011–12).

⁶⁸² For example, The World Pantheist Movement < <https://www.pantheism.net> > [accessed 12 September 2018].

⁶⁸³ For example, Keith E. Yandell, ‘Protestant Theology and Natural Science in the Twentieth Century’, in Lindberg and Numbers ed., *God and Nature*, pp 448–71 (pp. 466–67); and Ronald

pantheism with science in order to support the idea that pantheism was a scientific religion. Wesley J. Wildman in *Religion & Science* (1996) has pointed out that pantheism is one of the popular alternative solutions to Christian monotheism in harmonising science and religion in human history.⁶⁸⁴ Through studying the relations between pantheism and science, historians can discover more ideas and efforts to harmonise science and religion. Pantheism deserves chapters in science and religion encyclopaedias like *The History of Science and Religion in the Western Tradition: An Encyclopedia* (2000).⁶⁸⁵

For historians of science, developing a more complex map of the religious context of science in Victorian Britain, with pantheism being included, will help to better understand scientific practitioners against this background. Scientific practitioners in Victorian Britain inhabited a world in which people were concerned with pantheism and its relations to science. Not only Tyndall, but also Spencer, Huxley, Charles Darwin, James Hinton, George Campbell, and many more were involved in pantheistic discussions. This raises new questions concerning how scientific practitioners influenced pantheists, how the pantheistic context influenced scientific practitioners' beliefs as well as their scientific theories, how scientific practitioners presented their relevant views, and how these views were represented or misrepresented by others. By being more sensitive to the presence of pantheism in Victorian culture and by paying more attention to passing references to pantheism, historians of science will be able to give these questions more adequate answers.

This dissertation offers an historical account of pantheism in Victorian Britain and its connections with contemporary science. It has shown that pantheism in Victorian Britain was a significant science-related religious position, with many scientific theories

L. Numbers, *Galileo Goes to Jail—And Other Myths about Science and Religion* (Cambridge: Harvard University Press, 2009), pp. 192–93.

⁶⁸⁴ Wesley J. Wildman, 'The Quest for Harmony', in *Religion & Science*, ed. by W. Mark Richardson and Wesley J. Wildman (London: Routledge, 1996), pp. 41–60 (p. 55).

⁶⁸⁵ Ferngren ed., *History of Science and Religion*.

and scientific practitioners being considered pantheistic and being used by advocates of pantheism in support of their pantheistic doctrines. By bringing out this history of Victorian pantheism, this dissertation enriches our understanding of Victorian religion and of the relationship between science and religion in Victorian Britain. It opens new opportunities for scholars to further study pantheism and its relations to science, and to formulate a more complex religious map of Victorian Britain and a more comprehensive picture of pantheism across the world.

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