John Wesley's vision of science in the service of Christ

MINI-SYMPOSIUM: John Wesley and Science

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John Wesley (1703 -1791) was a pioneer of the 1730s British evangelical movement. While best known as founder of Methodism, his intellectual interests included a lifelong engagement with the ideas and activities of the natural philosophers (scientists) of his day. He encouraged his preachers to become conversant with science, incorporated scientific topics in his sermons and other writings, and used electro therapy apparatus in his medical clinics. Science correctly understood was to serve the cause of Christ rather than be feared.

The eighteenth century challenged Christians to adapt their ways to new ideas. Many intellectuals in John Wesley's England embraced a widening gap between the natural and the supernatural, natural law and providence, and rational faith and piety, which had roots in the mechanistic interpretations of nature epitomized by Sir Isaac Newton's accomplishments. This study offers an analysis of Wesley's interaction with natural philosophy and the challenges which the new understanding of nature brought to believers.

Wesley's intellectual horizon included a lifelong interest in the progress of science and the ways that science could serve Christian purposes. Although he occasionally dabbled in the field or recommended projects to others, Wesley never had the interest (or time) to devote to serious experimental study and should not be compared with contemporary scientist-clerics such as Joseph Priestley, Stephen Hales, Bishop Samuel Horsley, or William Derham. Mainly, he focused on science to serve his grand purpose of furthering the gospel and helping the sick. He also wrote inexpensive works on natural science for his constituency. Wesley's sermons and other writings point to an enthusiasm for the natural world as "God's World which could be exploited for humanitarian as well as traditional religious purposes.

Wesley's student days at Oxford indicated a more than ordinary attention to science. He was interested in such disparate questions as the nature of "vacuums, the Chain of Being, and the ability of animals to reason." In later travels, he would meet and comment on the work of many individuals working in science. He was particularly concerned with unusual natural phenomena and would often speculate on their causes. An insatiable reader, Wesley read scientific works throughout his life, often from the back of his horse. From his own reading and the advice of others, he developed short lists of scientific works for his correspondents, schools, and lay preachers. These collections included older works by John Ray, Cotton Mather, and Jonathan Edwards as well as current works by Benjamin Franklin, Charles Bonnet, John Hutchinson, and Oliver Goldsmith. Wesley followed the debates that swirled around the various interpretations of Newton's ideas. In the famous Clarke-Leibnitz controversy he would side with Clarke on one question but at another point in the debate would support Leibnitz.

Wesley's view of the natural world and the position of nature in God's economy was never listed in one place or integrated into a system. In drawing together his ideas from various sources, we recognize that our understanding will be tentative and incomplete...an appropriate response to one who dealt with challenges in context rather than from a confession.
Wesley's Intellectual Roots

In examining Wesley's interaction with natural philosophy, it is instructive to examine several features in his background which influenced his response to the *Book of Nature*. Wesley never offered a reason for his interest in natural phenomena and scientific activity. John English has suggested that his curiosity may have been stimulated as a child by the "gentlemanly scientific interests of his father and older brother Samuel, members of the Spalding Gentlemen's Society, which also included Alexander Pope and Sir Isaac Newton in its number." Wesley early recognized the impact of the revolution in science on public life and the influence for good and evil that it could offer to Christianity.

Wesley's ideas on the philosophical foundation of scientific and religious knowledge guided his approach to a wide spectrum of questions. He studied and commented on works by John Locke, Rene Descartes, Nicholas Malebranche, John Norris, Isaac Newton, George Cheyne, Peter Browne, David Hartley, David Hume, and Thomas Reid as well as an eclectic range of theological sources.

The Power and Limits of Empiricism and Reason

Wesley assimilated and adapted the ideas of John Locke, Peter Browne, and John Norris in forming an epistemology which valued "spiritual senses as well as those in the physical domain." Orthodox theologians Thomas Bray, William Law, Isaac Watts, Bishop Butler (in part), and William Cowper all affirmed the need for empirical verification expressed in Locke's *An Essay Concerning Human Understanding* (1690). Wesley's practical bent, aversion to metaphysical speculation, and emphasis on facts before theory follows the tradition of Francis Bacon, Locke, and Newton. He singled out Bacon for praise on his emphasis on the inductive method.

Brantley has described the multifaceted nature of Locke's influence. "Wesley mastered the *Essay*, followed its principles, spread its message, reconciled it with his faith, and incorporated it into his philosophical theology." The Lockean language of experience...enabled him [Wesley] to raise his ineffable experience of grace to graceful and cogent expressions of methodology.

Wesley had an almost obsessive concern with "the littleness of human knowledge in both the natural and supernatural." Two influences on this question were Peter Browne's *The Procedure, Extent, and Limits of Human Understanding* (1728) which Wesley praised and Robert Boyle's *The Skeptical Chemist* (1661) from which he would quote on the lack of knowledge of the properties of the metal antimony in his *Remarks on the Limits of Human Knowledge* (1763). The limits on physical knowledge found parallels in theology for those who felt that some scriptural passages were above reason. Locke had described such propositions as those which cannot be derived from the normal method of discerning truth. Boyle's *Things Above Reason* (1691) followed orthodox Anglican thought in asserting that truths such as God's nature, how God made the world out of nothing, or how he unites an immaterial soul to a human body and maintains that union are "incomprehensible truth."

The Organic World

During the early part of Wesley's life England was basking in the triumphs of Newton's physics and the focus was on the physical side of nature. Wesley proved an exception to the rule as his curiosity about nature extended over the spectrum from organic to inorganic...from animal psychology to comets...from man to polyps. Philip Ott notes that the images that Wesley used to relate body and maintains that union are "incomprehensible truth."

Wesley was impressed by the fact that the natural world...from dust to man...could be arranged in a gradation of infinitesimally different organisms. This Chain (or scale) of Being concept, held by a long line of thinkers from Aristotle to John Locke, has been viewed as a precursor to the concept of evolution.

High Church Influence

One pervasive influence on Wesley's attitude toward science derived from his High Church Anglican roots. Many High-Churchmen rejected the Newtonian natural philosophy espoused by latitudinarian Low-Church leaders, which they associated with deism and atheism. Richard Olson has argued that High-Church antiscientific attitudes represented a concern that the theories and practices of the new science would either directly or indirectly bring harm to the practitioners and those who read their work. This harm came from "the pridefulness and moral insensitivity that seemed to accompany scientific theorizing, or from attempts to extend scientific approaches to inappropriate domains...especially to religious and closely associated moral issues." It was natural that Wesley would be inclined toward the novel system of Francis Hutchinson who offered an aggressive High-Church response to the linking of suspect Low-Church theology and Newtonian science.

Wesley lived during a period where the scriptures were taken at face value. Evidence supplied by miracles, fulfilled prophecy, and ancient records was eagerly adapted to endorse the theory of plenary inspiration of the Bible. High-Church conservatives found no fundamental discrepancy between the Old Testament and modern natural science. Biblical criticism had yet to make an impact on literal interpretation. High-Churchmen based their theology on the tenets of St. Augustine which emphasized those aspects of Christian faith most difficult to defend on rational grounds - original sin, the incarnation, vicarious atonement, and redemption.

A hundred years before, Francis Bacon had offered advice about going to the Old Testament for science. "Some of the moderns have indulged this folly with such consummate inconsiderateness, that they have endeavored to build a system of natural philosophy on the
first chapter of Genesis, the book of Job, and the other parts of Scripture, seeking thus the dead amongst the living.” Until the late eighteenth century, there was little reliable scientific evidence to offset the story of early Genesis allowing Wesley to avoid the science-Bible battles of a later day.

The mechanistic triumphs of seventeenth century natural science had offered an impersonal deity who ruled through unchanging natural laws. As Wesley grew up, he faced a new picture of God’s ways with man. Now God’s care was expressed in ordinary natural processes rather than through one who would intervene in nature to save an individual sinner. Order and a tangible, consistent way of viewing nature and society were preferred to the transcendent mystery of classical Christianity. Wesley’s struggles with this new movement and his personal quest in coming to terms with reason and piety reflect the modern dilemma.

### Wesley's Integration of Natural Philosophy and Christianity

John Wesley recognized the accomplishments of the new science and sought to bring its power to serve the church. In typical Wesley fashion he never gathered his thoughts on this subject in one place. Our analysis is further complicated (but made more interesting) by the diverse ways that science both served and influenced his ministry. In seeking to trace and define Wesley’s ‘integrative strategy,’ I will examine the place of natural phenomena in his sermons, his views on apologetics, and his interest in the application of science for the benefit of humankind.

One tradition has viewed Wesley as holding negative views toward science. In a recent paper, I have shown the opposite to be the case, if one examines the entire corpus of his work and pays attention to the context of his alleged antiscience remarks. His enemies were deism, atheism, materialism, and intellectual pride—not natural philosophy! Wesley linked scripture and nature in a non-confrontational way emphasizing the values and limits of each mode of God’s revelation. This attitude characterized nineteenth century Methodism which remained friendly toward science even with the publication of Darwin’s *Origin of Species* (1859).

### Scripture and Nature

Wesley’s published sermons reflect an active and appreciative interest in the natural world and scientific progress. He summed things up in *God’s Approbation of His Works* (1782).

> How small a part of this great work of God is man able to understand! But it is our duty to contemplate what he has wrought, and to understand as much of it as we are able.

This speculative sermon drew on sources ranging from Lucretius, Thomas Burnet, and John Hutchinson to Chambers’s *Cyclopaedia*; it detailed a pre-fall world without “violent winter or “sultry summer, “pain, “weeds, and without predators...an interpretation which endures in some religious circles today.

The written sermons were designed primarily for “nurture and reflection over against the goals of “proclamation and invitation for the oral sermons.” His written sermons contain a wealth of scriptural references to natural phenomena and scientific information. Often this material would illustrate and embellish the discussion of a particular passage. Wesley would also use natural phenomena as an analogy for spiritual themes. In other instances, he would speculate on the state of nature before the “fall or in the world to come. His favorite scientific topics were astronomy, electricity, earthquakes, physiology, and volcanoes. Some of the sermons went far beyond Wesley’s claim that in providing “plain truth for plain people” he “abstain[ed] from all nice and philosophical speculations; from all perplexed and intricate reasonings; and as far as possible from even the show of learning.”

In Wesley’s day there was little geological or biological data to add to the scriptural account of the creation period. Orthodox Christians generally read this portion of the Bible in literal fashion. Wesley felt that scripture did not provide a scientific account of nature: “the inspired penman in this history [Genesis]...wrote for the Jews first and calculating his narratives for the infant state of the church, describes things by their outward sensible appearances, and leaves us, by further discoveries of the divine light, to be led into the understanding of the mysteries couched under them.” His comment on Gen. 1:3 notes, “He made the stars also, which were spoken of only in general, for the Scriptures were written not to gratify our curiosity but to lead us to God.” Yet he happily noted, “I was strengthened in the belief of the holy word, which had so great congruity with these [scientific] truths.” It is interesting that the order of creation in his *Survey of the Wisdom of God in Creation* (1763) only roughly follows that of *Genesis*, and there only with respect to the creation of animate nature.

Wesley would occasionally use the “two books to support and interpret one another. He invoked Ecc. 3:11 to argue a “static view of nature: “So that all things are still as they were at the beginning.” He also used the “Chain of Being concept to emphasize the unity of creation and the inability of anything in nature to act independently of God. He provided a gloss to improve Gen. 1:31 by inserting the italicized phrase in the text: “when he saw everything he had made, all in connection with each other, behold it was very good.” Wesley articulated a prominent place for God as Creator and Sustainer in his *Sermon on the Mount III* (1748).

> The great text of our blessed Lord inculcates here...is that God is in all things, and that we are to see the Creator in the glass of every creature; that we should use and look upon nothing as separate from God, which indeed is a kind of practical atheism; but with a true magnificence of thought survey heaven and earth and all that is therein as contained by God in the hollow of his hand, who by his intimate presence holds them all in being, who pervades and activates the whole created frame, and is in a true sense the soul of the universe.

Wesley always described nature as wholly dependent on God...a voluntarist God who works above the “laws of nature.”
Sermons From Nature

Christian tradition has found a further role for the natural world. Medieval, Renaissance and Puritan natural theology taught that nature was a book which illustrated spiritual themes and offered "moral emblems and "types of things to come." The eighteenth century offered many examples. Wesley's Lincoln College student, James Hervey's *Meditations and Contemplations* (1748) found that every page of nature is rich with "sacred hints, "lively sermons, and "excellent lessons." John Newton thought that a thorough knowledge of scripture was the best preparation for a firsthand understanding of the book of nature. "The Lord has established a wonderful analogy between the natural and spiritual world...Almost every object they see, when they are in a right frame of mind, either leads their thoughts to Jesus, or tends to illustrate some scriptural truth or promise." 

Wesley's sermons exhibit a mind deeply saturated with scriptural texts. These often appear as metaphors of things in nature: "leaf shaking in the wind, "grace seasoned with salt, and "he maketh the clouds his chariots. Much less frequently, he borrowed metaphors from his reading or those of his own inventions. He was not averse to linking faith and nature. "We will learn a lesson of faith and cheerfulness from every bird of the air, and every flower of the field. His *Survey of the Wisdom of God in Creation* was designed to lead the reader to see the power, wisdom, and goodness of God, and increase man's happiness. Yet, Wesley was sparing in the use of typology, metaphor, and emblem. His *Minutes* for 1749 contained the injunction to his preachers, "Beware of allegorizing or spiritualizing too much." Wesley opposed interpreting scripture by "any allegorizing method. "No other ideas are to be affixed to the words of scripture than such as occur to one who looks at the thing spoken of." His reticence to engage in such rhetorical devices stemmed from the nature of his typically untutored audience, not from a lack of writing skills.

Wesley and The Apologetic Tradition

John Wesley ministered in an age when scientists and clerics sought to use Sir Isaac Newton's triumphs to serve the cause of religion. Newton's followers were primarily found among Low-Church latitudinarians, the dominant force in early eighteenth century Anglicanism. Newtonian natural theology sometimes took antithetical paths and it is ironic that one who wanted his work to support both general and special revelation would be later exploited by the deists who advocated a creator-mechanic over an active providence. Those who invoked the name of Newton in developing views of science and religion often had little understanding of his science and the central place that theology held in his natural philosophy. Wesley, though a contemporary of Newton, would have learned about his nation's hero more from hearsay and the works of his disciples and opponents than from the writings of one who was inordinately reticent to reveal his thoughts on nature or Christianity. High-Churchman Wesley, put off by the acclaim accorded to Newton's accomplishments, sometimes took antithetical paths and it is ironic that one who wanted his work to support special revelation would have a natural affinity for the views of John Hutchinson (1674-1737), a fellow High-Church partisan who led a forceful opposition to Newton's ideas.

Wesley was ambivalent about Isaac Newton, at times harshly critical, but later echoed the adoring rhetoric of the day. The *Concise Ecclesiastical History* (1781) reflects his mature view. "The immortal man to whose genius and indefatigable industry philosophy owed its greatest improvements, and who carried the lamp of knowledge into paths of knowledge that had been unexplored before, was Sir Isaac Newton, whose name was revered, and his genius admired, even by his warmest adversaries." Wesley might disagree with the metaphysics that claimed Newton's name but would give him his due in experimental physics, signaling a willingness to separate science from theological considerations and philosophy. Earlier, a July 21, 1758 *Journal* entry reported his reading of Needham's discovery of the spontaneous generation of life. Wesley said the "tract confounded all my philosophy but thought it "highly probable that this "particular class of animals existed." In this case Wesley may not have considered the theological implications of natural creation of life; still, this incident offers a further example of his willingness to allow science to speak without religious strictures.

Wesley and other High-Churchmen were attracted to the apologetic line of Bishop Joseph Butler's *The Analogy of Religion, Natural and Revealed, to the Constitution and Course of Nature* (1736). Butler's work was a popular tool in combating deism and became a fixture at the English universities until the age of Darwin. Wesley affirmed Butler's concerns with the limitations of natural knowledge and emphasis on the importance of scriptural knowledge. While Wesley found few deists in mines or fishing villages, he recognized their force in the intellectual life of his nation. He confronted them in his sermons, in his *Arminian Magazine*, and other works directed to a more literate readership.

Wesley entered the apologetic fray at several key points. One question involved the deist view that man could arrive at the essential truths of religion by reason alone. Low-Churchman Richard Bentley's *Boyle Lecture* (1692) argued for man's self-sufficiency; "God hath endowed Mankind with powers and abilities, which we call Natural light, and Reason, and Common Sense: by the use of which we cannot miss the discovery of His Being; and this is sufficient." Wesley joined Butler in valuing a limited role for natural theology by emphasizing the inherent uncertainty and limited power of human knowledge. His sermon *The Case of Reason Impartially Considered* (1781) represents an attempt to find a middle ground between the extremes of undervaluing and overvaluing reason. Wesley shared a commitment to the traditional evidences for theism but felt that Holy Scripture has a priority over the witness of nature. The wisdom of God in creation was available to all men but insufficient to gain saving faith. Newton's triumphs derived "independently of revelation and Church tradition undermined this view."

John Hutchinson, felt that Newtonian philosophy gave comfort to deists and dissenters by what he saw as excessive stress on God's
The London earthquakes of 1750 and the providence. Where there is so great a concourse of nobility every year; the violation of these laws and turned instead to explanations based on active powers imminent in matter. God's volition was no longer necessary. In an attempt to stem this anti-theistic flow Wesley turned to Hutchinson's full-blown anti-Newtonian system of scriptural science.

Hutchinson's approach was based on two concepts: (1) that all the operations of nature can be explained in terms of a triune fluid which appears as fire, light, and air, and (2) the notion that scripture (the Hebrew Language) "contained the indispensable key to all knowledge, both natural and spiritual." Hutchinson's physico-theology was attractive to Wesley because his natural philosophy and theology were based on scripture. Difficult doctrines such as the Trinity were shown to be both scripturally based and empirically verified in nature...accomplishments which restored "the credibility of Church doctrine and the philosophical integrity of the Bible." Wesley often referred to Hutchinson's work, primarily in critical terms. In 1758 after conferring with a leading Hebrew scholar on Hutchinson's Hebrew treatment, he concluded "his hypothesis is unsupported by scripture; very ingenious, but quite precarious.

A further eighteenth century problem involved the perennial tension between providential and natural law explanations of phenomena...the way that God dealt with nature, society, and individuals. At the time of Newton's death a delicate balance was maintained between a general providence which created the world ex nihlo and established and maintained the laws by which it operated, and a special providence which produced miracles and intervened to fine-tune the workings of nature. This balance would swing in the direction of a watchmaker God who worked through the laws of nature rather than an interventionist deity. Joseph Priestley's materialist world view was an extreme example of the use of Newton's ideas to argue for the self-sufficiency of matter and the laws of motion.

John Wesley joined a growing High-Church and evangelical effort to counter this trend with an apologetic which gave greater emphasis on an immediate and observable providence. This natural theology would emphasize natural history and the biological sciences over astronomy and the mathematical sciences reaching a climax in Paley's Natural Theology (1802). In a 1753 letter to Dr. John Robertson, Wesley had commented on Andrew Ramsay's Philosophical Principles of Natural and Revealed Religion, unfolded in a Geometrical Order (1748-9), "The treatise itself gave me a stronger conviction than ever I had before both of the fallaciousness and unsatisfactoriness of the mathematical method of reasoning on religious subjects." His assertion, "we can have no idea of God, nor any sufficient proof of his very being, but from the creatures; and that the meanest plant is a far stronger proof than all Dr. Clarke's or the Chevalier's [astronomical] demonstrations," is telling. Robert Boyle writing before the time of Newton had said essentially the same thing: "that the situations of the celestial bodies do not afford, by far, so clear and cogent arguments of the wisdom and design of the author of the world, as do the bodies of animals and plants."

Wesley's view on providence took a radically different turn, first, by rejecting any distinction between particular (special) and general providence and then by focusing attention on the human dimension of providence over the physical. "For as a general providence (vulgarly so called) counterdistinguished from a particular, it is only a decent well-sounding word, which means just nothing." He was even more explicit in his sermon On Divine Providence. "I hope to show it [General Providence] is such stark, staring nonsense as any man of sense ought to be utterly ashamed of." Wesley agreed "that in the common course of nature God does act by general laws, but he has never precluded himself from making exceptions to them whenever he pleases; either by suspending the law in favor of those who love him, or by employing his mighty angels; by either of which he can deliver out of danger them that trust in him." Wesley saw no distinction between "usual and "unusual events. Wesley's particular focus was on the "supernatural providence which regards the children of men rather than "that overruling hand which governs the inanimate creation." He reserved the term works of providence to refer to the nations and individuals and works of creation to address the natural order.

The preface to Wesley's Survey of the Wisdom of God notes his desire to "recite both uncommon appearances of nature, and uncommon instances of art...for surely in these appearances also, the wisdom of God is displayed." His Journal (1755) devotes several pages to speculation on the cause of a spectacular fall of rocks which he had seen in his travels. He considers various scientific causes before concluding that the cause could only be God, "who arose to shake terribly the earth; who purposely chose such a place, where there is so great a concourse of nobility every year; and wrought in such a manner, that they might see it and fear, an approach which would later be called God of the Gaps. He (as did Newton) first considered scientific explanations before adopting a theological explanation. In his work on electricity he describes a lightening conductor but argues that use of such a device did not deny God's providence.

The London earthquakes of 1750 and the destructive 1755 earthquake in Lisbon offered the clergy a golden opportunity to denounce the infidelity and immortality of the day. Wesley's pamphlet Serious Thoughts on the Earthquake at Lisbon (1755) forcefully spoke of a Divine visitation over against the notion that the event was "purely natural and accidental; the result of natural causes." For Wesley "nature is the Art of God, or God's method of acting in the material world"; earthquakes emerge from the "hand of the Almighty, arising
to such an effect." \(^80\)

All his providences, be they mild or severe Y are all designed either to wean us from what is not, or to unite us to what is worthy of our affection. Every pain cries aloud, "Love not the world, neither the things of the world. And every pleasure says, with a still small voice, "Thou shalt love the Lord thy God with all thy heart." \(^91\)

His orthodox attitude toward angels, demons, witches and other supernatural beings went against the grain of enlightenment naturalism. \(^82\) He saw the Devil as active in causing damaging natural events such as storms, wind, and fires as well as disease and mental instability. For Wesley "With my latest breath will I bear my testimony against giving up to infidels one great proof of the invisible world: I mean that of Witchcraft and apparitions, confirmed by the testimony of all ages." \(^93\)

Wesley's sermon *Spiritual Worship* contains the core of his views on God's role in the natural world. \(^94\) While affirming the orthodox view of God as creator and sustainer of all that is, he speculated that causal agency could be transferred to supernatural beings such as angels as well as humankind. Wesley, searching for some breathing room for human will suggested that God "imparts a spark of his self-moving nature to created spirits [human souls]." \(^85\) He argued that man has "an innate principle of self-motion because he was created in the image of God." \(^86\) For Wesley, "God is a Spirit: So therefore was man." \(^87\) In the end, knowledge of the vital link between material and nonmaterial (body and soul) falls beyond the limits of understanding. \(^88\)

Wesley's notion of secondary causes has a deist tone.

> Will you suppose that it derogates from the glory of the Divine presence, to represent the great engine of this visible world, as moving onward in its appointed course, without the continual interposture of his hand? It is granted, indeed, that his hand is ever active in preserving all the parts of matter, in all of their motions, according to these uniform laws: but I think it is rather derogatory to His infinite wisdom, to imagine that He would not make the vegetable and the animal as well as the inanimate worlds, of such workmanship, as might regularly move onward in this manner five or six thousand years; without putting a new hand to it ten thousand times every hour: I say ten thousand times every hour; for there is not an hour or a moment passes, wherein there are not millions of plants or animals forming in southern or northern climates. \(^89\)

John English suggests that Wesley devised the notion of "spiritual senses to appeal to the enlightenment demand for facts obtained through the physical senses. Spiritual senses would be complementary to physical senses by describing the knowledge that comes by faith thus offering a link to modern science. \(^90\) Sara Miles argues that Wesley's notion of "spiritual senses capable of immediate response to God's mediate revelation to man supported not only the contentions of those who believed in a continuing revelation to the people of God, but prepared the way for "a view of nature in flux which became the paradigm for Nineteenth Century natural history." \(^91\)

Wesley allowed reason a valid but very restricted role in describing human experience, assigning to faith the principle part in integrating the scattered forces of man's personal life. Wesley's appeal for a living faith over abstract theory offered an evangelical counter to the dominant rationalism of his age.

### Wesley's Confronts Scientism

Wesley did not back off from a confrontation with the interpreters of science...especially where there was a presumption of materialistic determinism in human affairs or natural systems. His *Thoughts Upon Necessity* (1774) analyzed Dr. David Hartley's "sensationalist view of brain function which Wesley admitted "is now adopted by almost all who doubt of the Christian system." \(^92\) He agreed that Hartley's physiological scheme "contains a great deal of truth but balked at his notion that "men have no more liberty than stones." \(^93\) For Wesley the case turned on the point that necessity cannot exist "if there be a God in the world." \(^94\) God has control over "matter and spirits, over our souls and bodies. "Cannot He cut off, or suspend, in any degree, the connexion between vibrations and sensations, between sensations and reflections, between reflections and judgements, and between judgements and passions or actions?" \(^95\) God's free choice stands between man and materialistic necessity...between human freedom and man as a "wheel fixed in a universe consisting of one immense machine." \(^96\)

For Wesley: "he is not only the true *primum mobile*, containing the whole frame of creation, but likewise the inward, sustaining, acting principle, indeed the only proper agent in the universe; unless so far as he imparts a spark of his active, self-moving nature to created spirits." \(^97\)

### Science in the Service of Humanity

Francis Bacon's concern that science serve humankind bore significant fruit in eighteenth century England. Problems such as the determination of longitude at sea, improvements in agriculture, bleaching, and the production of chemicals were practical outcomes. John Wesley was particularly interested in medical applications of the new science. At one point he encouraged the use of blood transfusions in normal medical practice. \(^98\) His *Desideratum or Electricity Made Plain and Useful* (1859) described the properties of electricity and the therapeutic effects of electrical shocks. He bought four of these electrostatic machines for use in his medical clinics. When asked by the Dec. 12, 1760 *London Magazine*, "Why do you meddle with electricity? He replied, "To do as much good as I can." \(^99\)

Wesley's most enduring scientific interests were in the medical field. His *A Plain Account of the People Called Methodists* claimed "For six or seven and twenty years, I had made anatomy and physick the diversion of my leisure hours." \(^100\) He experimented on his patients
and himself often describing the results in his *Journal* His *Primitive Physick or An Easy and Natural Way of Curing Most Diseases* first published in 1747 went through 23 editions in his lifetime. This work challenged contemporary medical practice for its obsession with theory and lack of interest in developing practical medical treatment. Wesley's listing of remedies encouraged experimentation and the use of alternative approaches.

**Conclusion**

Wesley engaged many of the issues of the Enlightenment which touched on Christianity. He maintained an active interest in the development of the new science valuing it for the benefits it brought to human happiness and the way that it could support religion, yet was unwilling to subscribe to the antiscientific sentiments expressed by leading Tory intellectuals of his day. He encouraged his preachers and broader constituency to gain an understanding of the new science from a world view which saw God as creator and sustainer and nature as both dependent on and (in concert with scripture) exhibiting some of the attributes of God. Wesley was alert to the problems that natural theology could pose for the Christian and sought to counter them in his voluminous publications. He pursued a middle road which considered both faith and reason. In assuming this position he offers a pattern for those, two centuries later, who seek to remain responsive to Christianity in a culture infinitely more attuned to science. Wesley's sometimes erratic views on theories of natural philosophy reflect the limitations of one who read widely but was hampered by a lack of time and associates with whom he could carefully hammer out his ideas. Margaret Jacob's description of the typical High-Churchman as offering "ignorant and obscurantist opposition to everything new and modern could not be applied to Wesley."

Wesley maintained a high view on the value of history in an age which deprecated historical knowledge, recognized the limitations of reason and scientific method in an age which deified reason, and offered a critique of the use of science when used to attack religion. Wesley did not invoke moralistic attacks on natural philosophy but disparaged those theories or activities which would directly or indirectly bring harm to humankind or keep one's eyes from God. He adroitly mixed rationalistic orthodoxy and pietistic theology with natural philosophy in ways that allowed his followers to appreciate and participate in the study of God's creation. He offered a response to modernity which constructively, but selectively engaged science from a perspective of theological conservatism.

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ibid., pp. 6-7.


Preface to a true Relation of the Chief Things which an Evil Spirit did and said at Mascon, in Burgundy," (Jackson XIV:290).

Sermon: "Spiritual Worship," (1780) 1.2-10 (BE 3:91-5).

A Thought on Necessity," V.1 (Jackson X:476-7).


Survey 1:372.


English, p. 64. See also Sara J. Miles, "From Being to Becoming: Science and Theology in the 18th Century," Perspectives on Science and Christian Faith, 43(1991), p. 222.

Thoughts Upon Necessity," 2-5 (Jackson X:469-74).

ibid., p. 476.

ibid., p. 473.

ibid.

ibid., p. 476.

ibid., pp. 476-7.

Survey (1777), 1:16-17.

About Pastor Wesley. Biography of the Rev. Dr. Howard-John Wesley. The Reverend Doctor Howard-John Wesley is the son of the late Rev. He is only the eighth pastor in the church’s 214-year history of worshipping Christ while serving humankind. Under Dr. Wesley’s extraordinary leadership, Alfred Street Baptist Church has grown from about 2,500 to more than 7,000 members, serving the community and members through 83 active ministries with an emphasis on children’s ministries and missions. A native of Chicago, Dr. Wesley is the product of the University of Chicago Laboratory Schools and graduated magna cum laude from Duke University with a bachelor of science in biomedical and electrical engineering. Wesley’s views on justifying faith mirrored Martin Luther and John Calvin. Wesley’s own new birth experience occurred at Aldersgate in 1738 while listening to a reading of Luther’s preface of the Epistle to the Romans. In his agreement with Calvin on justification Wesley declared, “I do not differ from him a hair’s breadth.” Collins goes on to state, “Wesley believed that this teaching was also expressed in the ancient authors; especially in Origen, St. Cyprian, St. Chrysostom, Hilary, Basil, St. Ambrose, and St. Augustine.” While justification and the n