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JOSEPH PRIESTLEY (1733-1804) : THE MIND OF A MATERIALIST

AN INTELLECTUAL BIOGRAPHY

by
Charles Huber Lesser

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
(History)
in The University of Michigan
1974

Doctoral Committee:

Professor John W. Shy, Chairman
Professor David D. Bien
Professor Frank Grace
Professor Shaw Livermore

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In the nearly ten years that have elapsed since I began Priestley research for a small undergraduate paper, I have accumulated a very large number of both personal and academic debts. In a real way even my professors from a period when I planned to become a chemical engineer have contributed to my understanding of Priestley, but only the most salient of my academic debts will be mentioned here. Professor Ira V. Brown and Paul Morman were of assistance at an earlier stage of my work. A sizable obligation is owed to the staffs of the various institutions listed in the manuscript section of the bibliography. In addition, the Berks County Historical Society, the Historical Society of Pennsylvania, and the Birmingham, England, Public Library have been most courteous in supplying photocopies of rare printed items. Mrs. Marion Tinling's unsuccessful attempt to translate Priestley's shorthand was much appreciated. There is a general debt to the custodians of a number of rare book collections, and a very special one to my friends on the staff of the Clements Library, where I have written much of the dissertation. My chairman (John Shy) and Tim Donahue are responsible for any readability worked into the final form of my ponderous prose. I cannot adequately express my thanks for all their assistance.

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CHAPTER I

THE MANY FACES AND THE ONE: AN INTRODUCTION

Joseph Priestley in his own time was a very famous man, and, as a result of this, a wide variety of artists created portraits of his features. The end result in that era before photography[1] was a series of "faces" of Joseph Priestley, each one remarkably different from the others. Indeed, it is difficult to see how they all are of the same man.

This is strangely appropriate because, both in his day and since, many of those who have considered the voluminous output of Priestley's pen have had similar difficulties in delineating a single image. Priestley was an important scientist, theologian, political writer, educator, linguist, and metaphysician. The result of this has often been separate consideration of one or another of the aspects of his thought or even discussion of the conflict between his religious and scientific endeavors.

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[1] Priestley was remotely connected with the beginnings of photography. In 1791 and 1792, when Thomas Wedgwood (son of Priestley's famous friend Josiah Wedgwood) was commencing the experiments with light that would rapidly lead to his first heliotype, he was corresponding with Priestley about light. See letters by Priestley, London, Oct. 18, 1791, Feb. 25, 1792, March 13, 1792, and May 5, 1792 to Thomas Wedgwood, in Henry Carrington Bolton, ed., Scientific Correspondence of Joseph Priestley (New York: Privately Printed, 1892), pp. 116-17, 125-29.

Obviously Joseph Priestley had only one set of physical features. A single countenance existed, even though it changed a little as Priestley grew older. Just as there was one face despite the variety of portraits, so there also existed a single unifying world view behind the multitude of Priestley's endeavors. Once that fundamental outlook had been formed in Priestley's youth, it permeated all his thought. The exploration of that world view and of the way in which it illuminates and unifies the wide spectrum of his efforts is the central theme of this intellectual biography.

Before seriously entering into the difficult realm of Priestley's thought and its coherence, however, let us remain a while in the gallery of Priestley portraiture. Relax a bit in this fascinating and informative place as we pursue this analogy with the portraits of Joseph Priestley.

Some forty years passed between the first and the last portraits for which Priestley sat. The first known likeness in oil was probably painted in the early 1760's when Joseph Priestley was about thirty years old and an instructor at the dissenting academy at Warrington, England. This painting and a silhouette done about the same time show the full-bottomed wig then thought by more conservative divines to be correct for dissenting clerics.[2] Soon, however,

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[2]This first portrait is sometimes known as the "Leeds Portrait," but was in all probability painted before Priestley moved to Leeds. Regarding this painting, possibly by Benjamin Wilson, and the silhouette see Douglas McKie, "The Earliest Portrait of Joseph Priestley," Science Progress 28 (1934) : 456-60. This is incorrect, however, on the date of the first publication of a reproduction of this portrait;

Priestley was wearing more fashionable wigs with either two or three rows of curls. Yet another change in portraits occurred when Priestley dispensed with wigs and hairdressers altogether on emigrating to Northumberland, Pennsylvania, in 1794. These alterations in hair style together with the effects of age were bound to lead to variety in the "faces" created by the artists for whom Priestley sat. As well, at least according to one expert on Nonconformists and their portraits, there was a noteworthy difference between Priestley's right and left profiles.[3]

In addition to these real differences in Priestley's countenance, in a few cases the reason for the disparity among the portraits may well be that the depicted faces are not Joseph Priestley at all. For just as some of the accounts of Priestley's thought are so erroneous as to not depict his mind at all, so a few portraits actually may be of other men. A congregation in northern England is said to have once invited Rev. Alexander Gordon, principal of Unitarian College, Manchester, author of 691 sketches of dissenters for the Dictionary of National Biography, and authority on their their likenesses, to unveil a newly presented Priestley portrait. The moment for the unveiling arrived, but on seeing

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see K. Loewenfield, "Contributions to the History of Science," Manchester Literary and Philosophical Society Memoirs and Proceedings, vol. 57 (1913), no. 19, facing p. 31.

[3]Alexander Gordon, "Joseph Priestley," Leslie Stephen and Sidney Lee, eds., Dictionary of National Biography, 22 vols. (London: Smith, Elder & Co., 1908-9), 18:367. Hereafter this major work will be cited as DNB.

the canvas Gordon had to declare that it was not Priestley.[4] As well, the portrait supposedly painted by John Opie in 1783 (which was engraved as a likeness of Priestley while he was still living in 1801) may instead be of John Betham by Betham's daughter, who was an Opie pupil.[5]

For the bulk of the portraits, however, much of the explanation of the differences must lie in the subjective element in such aesthetic undertakings and in the varying skills and interests of the large numbers of artists involved. Because Joseph Priestley became both a Unitarian patriarch and a scientific hero, an unusually large demand for his picture developed. Both in his lifetime and in the early nineteenth century countless engravings and other reproductions of his likeness were produced. Among the most widely distributed were the medallions made by the firm of Priestley's friend Josiah Wedgwood along with a great variety of engravings based on these medallions.[6] Also abundant were both copies and engravings of the painting by Gilbert Stuart for which Priestley sat late in life in Philadelphia.[7] Visitors who paid to see the collection of

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[4] [H. L. Short], "Dr. Priestley's Likeness," Hibbert Journal 65 (1966-67) : 66-68; "The Dictionary of National Biography; A Statistical Account," DNB, 1:xviii.

[5] Short, "Priestley's Likeness," pp. 68-70.

[6] Henry Carrington Bolton, "The Likenesses of Priestley in Oil, Ink, Marble, and Metal," in Bolton, ed., Scientific Correspondence, pp. 183-86; [H. L. Short], "Priestley by Hackwood," Hibbert Journal 61 (1962) : 35-36.

[7] The history of this portrait is complicated and somewhat confused; it was unfinished when Stuart fled the yellow

portraits of leading figures assembled by Charles Wilson Peale[8] or who bought a copy from a similar collection by the traveling pastel artists James and Ellen Sharples[9] could also gain an idea of what Priestley looked like. Priestley's features were subjected to the interpretations of a host of other artists over the years. These included the extraordinary Henry Fuseli,[10] the little-known favorite of the dissenters William Artaud, James Millar, Peter Holland and a variety of

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fever in 1797. Commissioned for the American Philosophical Society, they lost out to Stuart's irresponsible (and drunken) ways when he sold it to an Englishman in 1812. William Artaud made quite a number of copies; there is disagreement whether he or Stuart completed the original. Charles Merrill Mount, Gilbert Stuart; a Biography (New York: W. W. Norton, 1964), pp. 223-24, 264-65; Bolton, "Likenesses," pp. 177-80.

[8]The portrait was by Peale's son Rembrandt. There is another portrait attributed to Charles Wilson Peale, but not included in Charles Coleman Sellers, Portraits and Miniatures by Charles Wilson Peale, American Philosophical Society Transactions, vol. 42, pt. 1 (Philadelphia: American Philosophical Society, 1952). See also Bolton, "Likenesses," p. 181 and James G. Wilson and John Fiske, eds., Appleton's Cyclopedia of American Biography, 6 vols. (New York: D. Appleton & Co., 1887-89), 5:120.

[9]Quite a number of copies, including miniatures, exist from the work of these interesting entrepreneurs. Katherine McCook Knox, The Sharples: Their Portraits of George Washington and His Contemporaries; a Diary, and an Account of the Life and Work of James Sharples and his Family in England and America (New Haven: Yale University Press, 1930; London: H. Milford, Oxford University Press, 1930), especially pp. 3-5, 8-9, 11-19, 99-101, 112, and 118. The sketches of some of these artists in the DNB and in Allen Johnson, ed., Dictionary of American Biography, 21 vols. (New York: C. Scribner's Sons, 1928-37) (hereafter cited as DAB) were of assistance.

[10]Fuseli, who is interesting as a transitional figure in the emergence of romanticism, was a close friend of Priestley's publisher Joseph Johnson. Priestley sat for him while staying with Johnson in London in 1783. Henry Fuseli, The Mind of Henry Fuseli; Selections from his Writings with an Introductory Study by Eudo C. Mason (London: Routledge & Paul, 1951).

others, known and unknown. Engravings of many of these likenesses allowed a wide distribution of the multiplicity of "faces" which had resulted from the interaction of artists with the changing yet essentially singular countenance of Joseph Priestley. The one face became many.

Similar causes help to explain the variance in the portraits of the mind of Joseph Priestley. Such a huge number of authors have attempted to depict his thought, that it is not surprising that their varied interests and talents have led to widely differing results. The secondary literature on Joseph Priestley ranges all the way from at least two historical novels in which he is a principal character,[11] plus a tale by Harriet Martineau,[12] through two biographies written specially for children,[13] to detailed scholarly treatments of various individual aspects of his thought.[14]

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[11] John Graham Gillam, The Crucible: the Story of Joseph Priestley, LL. D., F. R. S. (London: Robert Hale, 1954); George Alfred Townsend, Mrs. Reynolds and Hamilton; A Romance (New York: E. F. Bonaventure, 1890).

[12] Briery Creek; published in her Illustrations of Political Economy (London: C. Fox, 1832-4). The 25 tales were published separately, then bound together in nine volumes. For Priestley's considerable influence on Harriet Martineau, who made a pilgrimage to his grave when she was in America, see Robert K. Webb, Harriet Martineau; a Radical Victorian (New York: Columbia University Press, 1960).

[13] Rebecca B. Marcus, Joseph Priestley, Pioneer Chemist (New York: F. Watts, 1961); William D. Crane, Discoverer of Oxygen: Joseph Priestley (New York: Messner, 1962). The titles reveal the emphasis of these books.

[14] For example, among dissertations: Charles W. McClelland, "The Chemical Experiments and Theories of Joseph Priestley, 1794-1804" (Ph.D. dissertation, Stanford University, 1962); Lloyd W. Chapin, Jr., "The Theology of Joseph Priestley: A Study in Eighteenth Century Apologetics" (Th.D.

In many of these representations of Priestley and his ideas the speciality in treatment is clearly the outcome of the seeming necessity of closely delimiting a topic in the face of the overwhelming bulk of source materials. The author of a little biography published shortly after Priestley's death thought that "A critical analysis of the multifarious productions of Dr. Priestley would require a combination of talents of which few human beings are in possession."[15] Similarly, the latest biographer (Frederick W. Gibbs in the British Men of Science series) acknowledged that the student of Priestley "may well be appalled at the extent of the task and of his own ignorance." Gibbs, who is a chemist, devoted his sparsely annotated pages in large measure to Priestley as a scientist and openly indicated that detailed treatment of the theological writings was beyond his intent.[16]

For much of the literature on Priestley, however, the background and personal interests of the authors and editors, rather than any scholarly concern about closely delimiting a manageable topic, have been behind the fragmentary treatment of Priestley's thought. Most Priestley scholars can be

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dissertation, Union Theological Seminary in the City of New York, 1967); and Dwayne S. Strasheim, "Joseph Priestley on Grammar and Usage" (Ph.D. dissertation, Ohio University, 1970). For others see bibliography.

[15]John Corry, The Life of Joseph Priestley, LL. D., F. R. S., &c. with Critical Observations on his Works (Birmingham: Printed by Wilks, Grafton, & Co., 1804).

[16]Frederick W. Gibbs, Joseph Priestley: Adventurer in Science and Champion of Truth (London: Nelson, 1965), pp. x, 37.

divided into two clearly distinguishable groups of historians: Unitarians and scientists. This division was reflected in the unique case of the Priestley sketch in the Dictionary of National Biography; a separate article by a scientist was added to the general treatment by a Unitarian.[17]

To the Unitarian category belong such writers as Priestley's son Joseph, William Christie, John Towill Rutt, Rev. James Martineau, Rev. Alexander Gordon, Rev. Herbert McLachlan, Anne Holt, Rev. H. L. Short, and others.[18] Among the more noteworthy results of the efforts of this group was the 26 volume set of collected works, The Theological and Miscellaneous Works of Joseph Priestley.[19] Unfortunately, the editor of this set (John Towill Rutt) excluded all the scientific publications except for some prefaces that contained remarks on religion. As well, Rutt's early nineteenth-century standards of scholarship were sadly remiss.[20] Anne Holt's

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[17]Sir Philip Hartog and Rev. Alexander Gordon.

[18]There is no intent here to present a full bibliography of secondary materials on Priestley, which would make a volume in itself. For the works of these figures not specifically mentioned here see later references and the bibliography of this dissertation.

[19](London: Printed by G. Smallfield, 1817-32). Hereafter cited as Rutt, ed., Works of Priestley.

[20]Those parts of the Memoirs written by Priestley himself and a large amount of correspondence appear in the first two volumes (actually numbered as parts 1 and 2 of volume 1). The correspondence is seriously bowdlerized. While the texts of the printed works in the remaining 24 volumes are not as badly flawed, they do not always exactly follow the editions (usually late) allegedly printed. Some, but not all, variations between editions are noted. Because of the problems with this set, it is very seldom cited in this dissertation, but it does still have value for the knowledge of Priestley

biography,[21] the closest thing to a balanced and comprehensive treatment ever attempted, also came from this group of authors. Nonetheless, the purposes of these figures did not lead to a full intellectual portrait. Although their contributions are of immense value, the simple fact that four of the names above represent a succession of the principals of English Unitarian Colleges from the nineteenth century to the present,[22] reveals the interests of this group of Priestley scholars.

Some highly illuminating but equally partial treatments have come from the succession of scientists and historians of science who have considered Priestley. Such men as Thomas Edward Thorpe, Henry Carrington Bolton, Edgar Fahs Smith, Douglas McKie, John F. Fulton, Sir Philip J. Hartog, Frederick W. Gibbs, Robert E. Schofield, and others have contributed to a better understanding of Priestley's scientific theory and practice. Two published collections of chiefly scientific letters have come from these men.[23] The work of Schofield,

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and his circle that Rutt possessed and for a little correspondence not now known to be extant. The set was printed in only 250 copies by subscription and was almost given up before it began. It has, however, recently been reprinted by the Krauss Reprint Co. (1972). The history of the work can be followed in vols. 6 (1811) through 12 (1817) of the Monthly Repository. Joseph Priestley, Jr. planned a complete edition of his father's works, but nothing ever came of it.

[21] A Life of Joseph Priestley (London: Oxford University Press, H. Milford, 1931).

[22] Martineau, Gordon, McLachlan, and Short.

[23] Robert E. Schofield, ed., A Scientific Autobiography of Joseph Priestley (1733-1804); Selected Scientific Correspondence Edited with Commentary (Cambridge, Mass. and London: M. I. T. Press, 1966) only partially supercedes Bolton's 250 copy privately printed Scientific Correspondence. Schofield found Bolton's transcriptions substantially accurate.

the most important living student of Priestley as a scientist and of the scientific milieu in which Priestley lived, has been of major import, but has not led to a completed portrait of the thought of Joseph Priestley.

In addition to these two groupings, which have almost entirely dominated Priestley historiography, in recent decades some other scholars have added to the multitude of Priestley "faces." These include the authors of dissertations on special aspects of Priestley's work[24] and the professors of history and philosophy who edited the two modern volumes of selected writings.[25] Historians like Caroline Robbins, Staughton Lynd, and Daniel Boorstin have discussed Priestley within attempts to delineate larger group portraits.[26]

The products of the authors, like those of the artists, form an incredibly varied gallery of images. As we shall see, a few, such as Staughton Lynd's canvas of Priestley as an

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[24]Footnote 14 has some examples; for others see bibliography.

[25]Ira V. Brown, ed., Joseph Priestley; Selections from His Writings (University Park: The Pennsylvania State University Press, 1962) and John A. Passmore, ed., Priestley's Writings on Philosophy, Science, and Politics, Collier Classics in the History of Thought (New York and London: Collier Books, 1965). Passmore is an Australian philosophy professor and Brown is a professor of history at the Pennsylvania State University.

[26]Caroline Robbins, The Eighteenth Century Commonwealthman; Studies in the Transmission, Development and Circumstance of English Liberal Thought from the Restoration of Charles II until the War with the Thirteen Colonies (New York: Atheneum, 1968); Staughton Lynd, Intellectual Origins of American Radicalism (New York: Vintage Books, 1969); and Daniel Boorstin, The Lost World of Thomas Jefferson (Boston: Beacon Press, 1963). A variety of other works fall in this category.

ancestor of the New Left,[27] simply do not accurately portray Priestley's views. For the majority, however, the more central problem is that the "nose" or "ear" can be better understood in the context of the whole face. What is needed is a representation of the whole which includes and illuminates all the various aspects of the thought of Joseph Priestley.

That a variety of images exists should not be surprising. Priestley himself readily admitted in published works the unusual number and variety of his intellectual pursuits.[28] In private correspondence he told his friend Benjamin Vaughan that Vaughan was almost the only person in the world who had an interest in all of Priestley's varied undertakings.[29] In 1795 the prospects for a college in Northumberland, Pennsylvania, where he had settled on coming to America, seemed bright; Priestley wrote, "I wish we had a proper person for teaching Natural History, including Botany. Almost everything else I can, pro tempor in some measure, teach myself."[30] Priestley would not, however, admit that there was any conflict between his many interests. He was

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[27]See Chapter VI, below. Lynd's book is otherwise important and stimulating.

[28]See, for example, Joseph Priestley, Disquisitions Relating to Matter and Spirit (London: Printed for J. Johnson, 1777), Preface, p. xxiii.

[29]Priestley, Northumberland, Pa., Dec. 6, 1797, to Benjamin Vaughan, Autograph File, Houghton Library, Harvard.

[30]Priestley, Northumberland, Oct. 27, 1795, to Dr. Withering, Birmingham, England, Schofield, ed., Scientific Autobiography, pp. 148-51.

aware that some scientists wished he would abandon the theological and political writings that aroused furor and persecution and devote all his energies to science.[31] This point of view, which is echoed in some of the later evaluations of his work by scientists, Priestley considered erroneous. His various efforts, he repeatedly affirmed, were not at cross-purposes; indeed, he asserted that scientific and theological studies aided rather than interfered with each other.[33]

Priestley's denial of conflict does not, of course, prove the point. The leading living American interpreter of the Enlightenment, Peter Gay, places central emphasis on the battle between Christianity and scientific critical thinking

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[31]One especially clear instance is "An Address to Dr. Priestley, agreed upon at a Meeting of the Philosophical Society at Derby, Sept. 3, 1791," printed as Addenda No. II, Joseph Priestley, An Appeal to the Public, on the Subject of the Riots in Birmingham (Birmingham: Printed by J. Thompson, 1791), pp. 179-80, and in London Chronicle 70 (Oct. 6-8, 1791) : 340. "Philosophy" in Priestley's late eighteenth century terminology usually should be rendered "science" to properly convey what he meant.

[32]For example, Georges Cuvier's eulogy before the Paris Academy of Science read on June 27, 1805, and available in three English translations: Monthly Repository 1 (1806) : 216-19 and 328-34; Historical Eulogium on Joseph Priestley, trans. Rev. D. B. Warden (Paris: Sold by Theophile Barrois, Jun., 1807); and Smithsonian Institution, Annual Report of the Board of Regents for 1858, pp. 138-52. Another example is Edgar Fahs Smith, Priestley in America, 1794-1804 (Philadelphia: P. Blackiston's Son, 1920).

[33]Priestley, London, Sept. 21, [1791] to the Members of the Philosophical Society at Derby, Addenda No. II, Priestley, Appeal on Riots, pp. 180-81 and in London Chronicle 70 (Oct. 6-8, 1791) : 340; Priestley, Northumberland, April 3, 1800, to B. Lynde Oliver, Salem, Mass., Massachusetts Historical Society Proceedings, ser. 2, 3 (1886-7) : 34-35; Priestley, Northumberland, Oct. 2, 1801, to Theophilus Lindsey, Schofield, ed., Scientific Autobiography, pp. 310-12.

as the core of what was happening in the intellectual life of the eighteenth century.[34] At least for Priestley and some of his circle, this simply was not the case. These pages will show that a mechanistic world view permeated and shaped all aspects of the thought of Joseph Priestley. Behind the many portraits we have been surveying on the gallery walls of history, can be seen a single image. Despite the variety of his endeavors, there was cohesion to the thought of Joseph Priestley. The many faces were one.

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[34]See especially The Enlightenment: An Interpretation; the Rise of Modern Paganism (New York: A. Knopf, 1966).

CHAPTER II

IDENTITY CRISIS: THE MAKING OF A MATERIALIST

On Saturday, October 26, 1754, a dissenting academy student began to read David Hartley's Observations on Man. In the next few weeks this twenty-one year old greedily devoured the remainder of the first volume of Hartley in what little time he could spare from his studies of Josephus, Tacitus, Newton, and various other authors.[1] The next summer the youth went on to complete the less important second part of Hartley's magnum opus.[2] The student was Joseph Priestley,

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[1]Joseph Priestley, entries for Oct. 26 through Nov. 12, 1754, manuscript diary for the period April 29 through Dec. 31, 1754, Reference Library, Birmingham Public Library (Permanent Loan from the Church of the Messiah, Birmingham), Birmingham, England. Although the bulk of the diary is in Peter Annet's system of shorthand, the column noting his daily reading ("Improvement of the Mind") is mostly written out. Two manuscript shorthand keys of 1790 in Priestley's hand to the Annet shorthand system (which Priestley used from his youth to the end of his life) exist in Manchester College, Oxford, but neither the author nor Mrs. Marion Tinling (translator of William Byrd's shorthand manuscripts, who was consulted on Priestley's shorthand) have yet learned the system.

[2]Joseph Priestley, list of his reading and writing for the year 1755 at the end of his 1755 diary (Section for June 23-Sept. 1), printed in Joseph Priestley, Jr.'s "Continuation" in Memoirs of Dr. Joseph Priestley to the Year 1795, Written by Himself: With a Continuation to the Time of His Decease, 2 vols. (London: Printed by J. Johnson, 1806-7), 1:180. The manuscript diaries for "1755 and several of the subsequent years," which Joseph, Jr. remarks survived the destruction of the greater part of the diaries in the Birmingham Riots, are not now known to be extant. The continued existence of the diary cited in footnote one has not been known among Priestley

and his own life (as well as some portions of late eighteenth-century Anglo-American thought) was never to be the same. Indeed, Priestley's discovery of Hartley can be seen as the focus of what may be described as an "identity crisis," a critical period which occurs in the formation of all youthful egos. It does not require such modern psychoanalytic terminology, however, to discern the importance of this literary occurrence. Priestley himself recorded in his Memoirs that the Observations on Man "immediately engaged my closest attention, and produced the greatest, and in my opinion the most favourable effect on my general turn of thinking through life."[3]

Joseph Priestley at age twenty-one was a young man particularly susceptible to a personal and intellectual crisis. Priestley had been born on March 13 (Old Style), 1733, at Fieldhead, near Birstal, a village in the West Riding of Yorkshire located a short distance southwest of Leeds. The years of childhood and youth that preceded the critical event in 1754 had not been easy for young Priestley. Although there is little surviving evidence about these early years, we do know enough to discern that both Priestley's family life and his intellectual odyssey had been particularly unsettling. By the time he reached the age of majority,

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scholars; for example, see Schofield, ed., Scientific Autobiography, p. 6, and T. J. Brown, "English Scientific Autographs: Joseph Priestley, 1733-1804," Book Collector 14 (1965) : 539.

[3]Priestley, Memoirs, 1:19.

Joseph Priestley was well prepared to seize and cling tenaciously to the orienting world view which he found in David Hartley's Observations on Man.

Priestley was the eldest son of Jonas Priestley (c. 1700-1779) and his wife Mary. The Priestleys were a large Yorkshire family, the immediate branch of which was involved in making and dressing woolen cloth. Young Joseph was named after his grandfather, Joseph Priestley, who had been born about 1660. The future scholar's middle-class background seemed to forecast a stable upbringing,[4] but such was not to be the case. In a little more than a year the couple had a second son,[5] and other children followed in rapid

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[4]Ibid., p. 2; Samuel Parkes, "Mr. Parkes's Account of a Visit to Birstal, Dr. Priestley's Native Place," Monthly Repository 11 (1816) : 274-76; Jonathan Priestley and Nathaniel Priestley, memoirs of the Priestley family, Yorkshire Diaries and Autobiographies in the Seventeenth and Eighteenth Centuries, Surtees Society Publications, vols. 65 and 77 (Durham, England: Published for the Society by Andrews & Co., 1877-86), vol. 2. See Appendix A for genealogy of the family of Joseph Priestley.

[5]Timothy Priestley (June 19, 1734-April 23, 1814), although dismissed by one congregation, became an orthodox minister of some small note. In their mature years he and Priestley were not on speaking terms, partly because of Timothy's animus towards his brother's heresy. Timothy, who in most accounts does not come off well, is in the DNB. Timothy's A Funeral Sermon Occasioned by the Death of the late Rev. Joseph Priestley (London: Alex. Hogg & Co., 1805), is the only major source on Priestley's early years other than what little Priestley included in his own Memoirs, but it is unfortunately totally untrustworthy. Timothy desired to paint the theological side of Priestley in as dark terms as possible, while he at the same time included mythological early childhood scientific "experiments." That his accounts were often simply untrue has long been recognized; see, for example, J. T. Rutt, Clapton, Nov. 28, 1807, to the Editor, Monthly Repository, 2 (1807) : 623-34 and Schofield, ed., Scientific Autobiography, pp. 1-2.

succession. Before young Joseph had reached the age of seven, his mother had died of complications from the birth of her sixth child. Priestley did not even have the benefit of his mother's care for the six years and nine months that she survived after his birth; because of her "having children so fast," Joseph was very early sent to live with his maternal grandfather, a widowed farmer named Joseph Swift who lived thirteen miles away in the village of Shafton. Most of Priestley's early childhood was thus spent away from his parents.[6]

After his mother's death Priestley was sent back home to live with his father, and his brothers took his place at grandfather Swift's. While almost no details survive, Priestley's father was apparently a modestly comfortable cloth-dresser with servants or workers under him. Priestley spent two motherless years with his father until he was adopted in 1742 at about age nine by an aunt. Sarah Keighley, who was one of his father's older sisters, had no children of her own. She was well able to take on her nephew, since her husband John Keighley was "a man of considerable property." Therefore Joseph again moved away from the family home at Fieldhead; this time he went only some two miles to "Old Hall," the Keighley's stately Elizabethan residence in the

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[6]Priestley, Memoirs, 1:2. Shafton is about six miles southeast of Wakefield. Priestley does not say that his grandmother Swift had died before he went to live at Shafton, but it can be inferred by his brief statement about going to live with his grandfather and Timothy's Priestley's similar remark about his own stay there.

nearby village of Heckmondwike. Although John Keighley died three years later in 1745, young Priestley remained with Mrs. Keighley. Finally the boy had a home. In his Memoirs Priestley recalled, "From this time she was truly a parent to me, till her death in 1764."[7]

Priestley's early years were marked not only by the lack of a normal family life, but also by intense and disturbing religious emotions. Although Priestley's paternal grandfather had belonged to the established church,[8] his parents and aunt were dissenters with orthodox Calvinist beliefs. Priestley was carefully and successfully indoctrinated in this Calvinist faith from earliest childhood. Among Priestley's few recollections of his mother was her careful teaching of the Shorter Westminster Catechism in "the little time that I was at home." His father also took care to teach the Assembly's Catechism to his children and servants, and both that household and Sarah Keighley's household had prayer services every morning and evening. The efforts of Priestley's family at religious education achieved their goal. Priestley recalled in his Memoirs, "I was as much confirmed as I well could be in the principles of Calvinism."[9]

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[7]Priestley, Memoirs, 1:3. The best description of "Old Hall" is William Smith, editor, Old Yorkshire, n.s., 1 (1889) : 59-61.

[8]Joseph Priestley, Familiar Letters Addressed to the Inhabitants of Birmingham, In Refutation of Several Charges Against the Dissenters and Unitarians, 2d ed. (Birmingham: Printed by J. Thompson, 1790), p. 17.

[9]Priestley, Memoirs, 1:2, 5-7.

Poor health, his Calvinist beliefs, and his frame of mind combined to produce real agony in Priestley's teenage years. Young Joseph was a serious lad. He devoutly believed in the righteous God of orthodox Calvinism; he was fully convinced that many were predestined for damnation. He believed that only the free gift of grace by God was sufficient for salvation. Priestley was not a robust youth. The future chemist recalled that as a teenager the "weakness of my constitution . . . often led me to think that I should not be long-lived." He read many books of religious testimonies, but could not satisfy himself that he had personally had "a new birth, produced by the immediate agency of the spirit of God." Believing that he might soon die, he agonized that he might not be saved. "I felt occasionally such distress of mind as it is not in my power to describe, and which I still look back upon with horror." "In that state of mind," Priestley remembered reading, "the account of 'the man in an iron cage,' in the 'Pilgrim's Progress,' with the greatest perturbation."[10]

This "weakly consumptive" youth[11] was a vastly different person from the leading rationalist intellectual figure he was to become. For one thing he was a moralistic prig. Later in life he admitted that "many persons of better health

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[10]Ibid., pp. 7-8.

[11]Timothy Priestley can perhaps be believed (see footnote five above) for the fact that Priestley nearly died of a complaint in his lungs between ages twelve and thirteen. The quote is Priestley's own from the Memoirs, 1:4.

and spirits" might well have been "disgusted" with such strictness. He vividly remembered snatching a book of knight-errantry from his brother Timothy's hands and throwing it away "with great indignation."[12] Other aspects of his earlier self were not so easily discarded in later years. As a child Priestley came to give credence to "invisible malignant spirits and apparitions" and connected them with darkness. Although in mature years he believed "nothing of those invisible powers," in middle age he still had to continually struggle against an irrational fear of the dark.[13]

Education, both formal and informal, soon began to deal shattering blows at the Calvinist world view of this intense, sickly young man. Priestley's aunt hoped that he would become a minister, and the future scholar was educated with this in mind. Young Joseph attended several schools in the area, probably including Batley Grammar School.[14] The last of the schools he attended was one that Rev. Mr. Kirkby ran for a brief period in Heckmondwike, the village where Joseph lived with his aunt. Kirkby had been pastor of Upper Chapel, Heckmondwike, since 1710, and the Priestleys and

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[12]Priestley, Memoirs, 1:13-15.

[13]Joseph Priestley, An Examination of Dr. Reid's Inquiry into the Human Mind on the Principles of Common Sense; Dr. Beattie's Essay on the Nature and Immutability of Truth; and Dr. Oswald's Appeal to Common Sense in Behalf of Religion, 2d ed. (London: Printed for J. Johnson, 1775), p. 68.

[14]Derek N. R. Lester, The History of Batley Grammar School (Batley: Newsome & son, 1962), pp. 48-50; N. L. Frazer, "The Claim of Batley Grammar School to be the Alma-Mater of the Rev. Dr. Joseph Priestley, F. R. S.," Unitarian Historical Society Transactions 5 (1932): 133-44.

Keighleys had long been leading members of this Independent (i.e. Congregational) church. When Priestley was sixteen, age and illness forced Kirkby to abandon his school. In an age when many thought that intellectual pursuits were bad for those who were not healthy, Priestley's aunt decided that the youth's own poor health made it unwise for him to go to another school, or, indeed, to continue to plan to become a minister. Instead, he was encouraged to pursue his studies independently and especially to learn modern languages so that he could be placed in a job in a counting-house in Lisbon by an uncle who was a merchant. When three years of such studies ended in September of 1752, young Priestley not only had read Locke's Essay on Human Understanding and Gravesande's version of Newtonian physics, but also had studied Greek, Latin, Hebrew, "Chaldee and Syriac," French, Italian, and German, and had "just begun to read Arabic."[15] Just nineteen, the youth showed considerable promise.

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[15]Priestley, Memoirs, 1:3-5, 9-10. Priestley actually used many of these languages in his reading and scholarship throughout his career. The merchant must have been John Priestley (c. 1694-1786) who appears as "Mr. John Priestley, Merchant, Field-head" in the list of subscribers to Priestley's The History and Present State of Discoveries Relating to Vision, Light and Colours. This uncle has not been identified in previous Priestley scholarship and neither the suggestion by John Towill Rutt (Works of Priestley, vol. 1, pt. 1, p. 8, note) nor R. G. Wilson, Gentlemen Merchants; the Merchant Community in Leeds, 1700-1830 (Manchester: Manchester University Press, 1971) prove of assistance in the matter. Two other Joseph Priestleys (father and son) in the Leeds area in Priestley's lifetime who were connected with the Leeds and Liverpool Canal Co. and the Aire and Calder Navigation are not definitely known to be related to Priestley's immediate branch of the family. See E. Kilburn Scott, "Three Joseph Priestleys," Newcomen Society for the Study of the History of Engineering and Technology Transactions (for 1939-40) 20 (1941) : 147-49.

Meanwhile, Priestley's health had improved, and, although nearly all the preparations had been made for his voyage to Portugal, it was decided that he could resume his studies for the ministry. In the fall of 1752 Priestley's aunt and other relations decided to send him to the strictly Calvinist Mile-End Academy. Nineteen-year-old Joseph, however, had other ideas. Just in the last year the youth's orthodoxy had begun to come apart. Now he found he would not be able to make the required declarations "of the strictest Calvinistic faith" every six months, and he "resolutely opposed" going to Mile-End. As a result of some recent "heretical" influences, Priestley strongly disagreed with his relatives' plans for his education.

Young Priestley had not been sheltered from what his family saw as heresy. Indeed, his aunt, while herself thoroughly orthodox, was not bigoted and had included "the most heretical ministers in the neighbourhood" in the welcome that made her mansion "the resort of all the dissenting ministers" of the area. Although Mrs. Keighley was willing to accept the unorthodox as "honest and good men" despite their opinions, these men had made little impression on the spiritually agonized unhealthy youth in their midst.[16]

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[16]Unless otherwise noted, all the quotations in this section come from the Memoirs, 1:10-12, 16-18, which remain for this period the only major source. Priestley did become quite close to the rationalist Rev. William Graham, M. A. (of Halifax, 15 miles from Leeds), who was among those who visited "Old Hall," but their friendship ripened only later after Priestley became a minister himself. Graham, the author of Repentence the Only Condition of Final Acceptance: a Sermon (London: 1772), and The Doctrine of Atonement

Priestley remained essentially an orthodox Calvinist until he was nearly eighteen. About that time or shortly before, young Joseph, his aunt, and Pastor Kirkby strongly desired that the youth be admitted as a communicant in the family's congregation. The elders of the church, who had the final authority in such matters, however refused young Priestley because he could not satisfy them on the question of all mankind being condemned to "the pains of hell for ever" on account of the sin of Adam. Although the elders found Priestley "not to be quite orthodox" on this point, Pastor Kirkby evidently did not consider the youth to be seriously heretical. It was not until 1751 that Priestley really began to undergo the intellectual travail that would leave behind his orthodox Calvinism and would climax with his adoption of Hartleyan materialism in 1754.

Towards the end of the three year period in which Priestley pursued his studies on his own he began to study mathematics two days a week with Rev. George Haggerston, a dissenting minister at the village of Hopton[17] who had studied under the eminent mathematician Colin Maclaurin. Haggerston was a Baxterian, a follower of the theological doctrines of Richard Baxter (1615-1691), who had attempted to develop a middle position between the predestination of

briefly Considered (London: 1772), contributed to Priestley's Theological Repository and left Priestley £200 and his manuscripts on his death (in 1782; Gentleman's Magazine 52 (1782) : 357).

[17] Haggerston moved to Osset in 1758 and died there at age 76 on December 12, 1791 (Gentleman's Magazine, vol. 111 (1791), pt. 2, p. 1166).

Calvin and the free will of Arminius. While the time Priestley spent with Haggerston did not cause him to abandon the doctrine of predestination, it did begin to weaken the foundations of his belief. Then in 1751 John Walker came to Heckmondwike as a candidate to succeed the aged Kirkby as pastor of the family's congregation. Walker was an avowed Baxterian. The congregation rejected him because of that, but young Priestley was convinced by his arguments. Meeting him many years later, Priestley is said to have remarked, "Ah Walker, it was you who first led me astray from the paths of orthodoxy."[18] In the months between Walker's visit and the time for Priestley to recommence his education for the ministry Priestley pondered the subject further and advanced beyond Baxterianism to become totally Arminian.

As a result of these recent changes in his faith, therefore, in the fall of 1752 Joseph Priestley at age nineteen refused to go to a staunchly Calvinist academy. Fortunately Pastor Kirkby felt that strictly orthodox Dissenters did not provide a very good education anyway. Therefore Kirkby recommended the academy of Dr. Philip Doddridge, the eminent dissenting educator. Kirkby was fond of young Priestley and felt that he would have "a better chance of being made a scholar" with Doddridge. This academy was not unknown to the family since the second wife of young Joseph's father had been housekeeper in the Doddridge family for a

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[18] Alexander Gordon, Heads of English Unitarian History With Appended Lectures on Baxter and Priestley (London: Green, 1895), p. 106.

time. Priestley's stepmother, who was now dead, "had always recommended his academy." Doddridge had died in 1751, and therefore young Priestley was sent to the successor academy at Daventry in September 1752.

The newly opened Daventry Academy was particularly well suited to have a profound impact on a youth like Priestley whose theological views were in flux. Doddridge had gained fame for having students learn the arguments of leading proponents of all major opposing points of view on any issue. This scheme, as Priestley noted, "was exceedingly favourable to free inquiry." After Doddridge's death his academy was moved from Northampton to Daventry. His successors in running the academy promoted open discussion to an even greater extent than had Doddridge himself. Caleb Ashworth and Samuel Clark were the two tutors at Daventry at the time Priestley was there. They were both young men (about 30 and 25 in 1752) who had been trained by Doddridge. Ashworth, the older of the two, had been Doddridge's hand-picked successor. Ashworth was a hard working, rather dull, heavy-set man who took an orthodox stance on every issue.[19] Clark, who was both younger and brighter, had earned considerable respect for the way he ran Doddridge's academy and church when, as his assistant, he had to take over during

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[19]Rev. Jeremiah Joyce, note to "Memoirs of the Late Rev. Hugh Worthington," Monthly Repository 8 (1813) : 562; S. Palmer, "Memoir of Dr. Caleb Ashworth," ibid., pp. 693-96; Rev. T. Thomas, "Supplementary Hints to the Rev. Mr. Palmer's Memoir of Dr. Ashworth," ibid. 9 (1814) : 10-12, 78-80; and DNB.

Doddridge's final illness. This was a special accomplishment since Clark, from an orthodox Calvinist point of view, was a heretical rationalist.[20] Priestley's classmates, like the tutors,

> were about equally divided upon every question of much importance, such as liberty and necessity, the sleep of the soul, and all the articles of theological orthodoxy and heresy; in consequence of which all these topics were the subject of continual discussion.

Some of the older students knew more on particular subjects than did the tutors, and therefore, the tutors "indulged us in the greatest freedoms, so that our lectures had often the air of friendly conversations on the subjects to which they related."[21]

It was to this arena of earnest, honest, and open intellectual inquiry, then, that Priestley went in September 1752. At nineteen he was older and better prepared than most students, and was consequently excused from the first year's studies and also from part of those of the second year. Conscientious as he was, he joined his roommate in studying ten folio pages of Greek each day to supplement the course of study at Daventry, which utterly neglected the classical Greek and Latin.[22] Rising early and studying hard, young

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[20] P. R., "Brief Memoirs of the Rev. Mr. Samuel Clark, Late Minister at Birmingham," Monthly Repository 1 (1806): 617-23; "Truth," to the Editor, ibid. 2 (1807): 68-69; Samuel Clark, A Sermon Preached at Daventry, December 7, 1755, on Occasion of the Late Earthquake at Lisbon, November 1, 1755 (London: James Buckland, 1758). Clark is not in the DNB.

[21] Priestley, Memoirs, 1:17-18.

[22] On the whole matter of the changing curriculum in higher education in the eighteenth century see the next

Priestley continued to ponder the unsettling theological and philosophical questions that had been so much on his mind.

Calvinism earlier had provided the youth with an orienting, if also agonized, world view. Of late this youth, who had not enjoyed the advantages of a stable upbringing by a mother and father, found his orthodox framework, which gave order to the universe about him, crumbling before his eyes. In the mental fray at Daventry Priestley now found "reason to embrace what is generally called the heterodox side of almost every question."[23] Then one of the tutors read a lecture by Doddridge that made reference to Observations on Man. As might have been expected, young Priestley scrupulously looked up Hartley's book. Checking out this reference proved to be no ordinary student task. With the reading of what he later called, "without exception, the most valuable production of the mind of man,"[24] Joseph Priestley found a new intellectual home. At twenty-one with this reading of Hartley Priestley took on the materialist world view that would orient his life and work.

The work of the eminent contemporary psychoanalyst Erik Erikson sheds a revealing light on the recesses of the

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chapter, J. W. Ashley Smith, The Birth of Modern Education; the Contribution of the Dissenting Academies, 1660-1800 (London: Independent Press, 1954), pp. 148-49, a work which concentrates on curriculum, is able to supply very little more than does Priestley in his Memoirs about the precise subjects then taught at Daventry.

[23] Priestley, Memoirs, 1:19.

[24] Joseph Priestley, Institutes of Natural and Revealed Religion, 3 vols. (London: J. Johnson, 1772-4), 3:xxi.

twenty-one year old mind of Joseph Priestley at that critical period in late 1754. Out of his studies of contemporary young men and women Erikson has come to define a widely accepted, almost cliché, stage in the development of youth which is encapsuled in the term "identity crisis." Erikson has gone on to describe such a phase in the lives of a number of important historical figures.[25] While the use of the psychoanalytic tool in historical studies is not without considerable problems and continues to have its harsh critics,[26] surely there is sufficient merit in applying our best modern understanding of ourselves to figures from the past to justify at least brief consideration of Erikson's insights here.

Erikson's work on human development has led him to stress the importance of the development of ego identity, or, to put it more concretely, the growth of an integrated, meaningful and positively valued image of one's self. In emphasizing the formation of "some central perspective and direction, some working unity,"[27] Erikson has not abandoned

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[25]The three most significant of his books in relation to this are his first book: Childhood and Society, 2d ed. (New York: W. W. Norton & Co., 1963; originally published 1950), Young Man Luther; A Study in Psychoanalysis and History (New York: W. W. Norton & Co., 1962; orig. pub. 1958), and Identity: Youth and Crisis (New York: W. W. Norton & Co., 1968).

[26]See, for example, Jacques Barzun, "History: The Muse and Her Doctors," American Historical Review 77 (1972): 36-64. Especially valuable for their clear explanations and footnotes which serve as a guide to the literature in this area are two articles by Peter Loewenberg in volume 76 (1971) of the same journal (pp. 612-64, 1457-1502). This remains true whether or not one can accept the theses of the articles.

[27]Erikson, Young Man Luther, p. 14.

the stages of psycho-sexual development which constitute the Freudian revolution in man's understanding of his own nature. He has, however, retreated from a too-exclusive emphasis which tended to view every adult thought and action as a manifestation of the remnant of some difficulty in one of the stages of infantile sexuality. Erikson supplies a corrective balance by adding to the classic Freudian oral, anal, and genital stages a series of descriptive stages in the development of man's self-conception, steps in the growth of the vital image of oneself as purposeful, meaningful, and valuable.[28]

In Erikson's view special emphasis is placed on the period which occurs sometime in the late teens or in the twenties when, in the "identity crisis," youths orient their future self-identity toward some ideology, some way of life, some Weltanschauung. Erikson perceives that in certain cultures, classes, periods, or individuals this stage in the development of the ego proceeds more or less painlessly as the person involved finds his meaning in a relatively unassailed ideology he has found in a stable environment about him. For others, however, to use a term from William James, there is a traumatic "second birth." For these persons there is indeed a "crisis" in this period of their lives; some endure neurotic or even psychotic symptoms before finding their integrating identity. The suggestion here is that

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[28]For Erikson on Freud, see especially Childhood and Society, pp. 64, 279-83.

Joseph Priestley was going through an "identity crisis" in the period between his late teens and age 21, when it was resolved by the adoption of Hartleyan metaphysics as his orienting world view.

Priestley's ordeal began when he attempted to form a self-conception of himself as a "saved" individual in a Calvinistic framework. This he was unable to do, and as a result he went through nearly neurotic self-deprecation. We know about this period in which Priestley so intensely felt an utter lack of self-worth only through his later recollection, but nonetheless its existential reality seems beyond question. Although Erikson has wisely noted the great danger in literally accepting the truth of "any autobiographical account of a person's childhood,"[29] and although Priestley in his mature rationalist years could well have had his axe to grind in vividly portraying the agonies endured under orthodoxy, nevertheless Priestley's tale of his youthful suffering has a convincing ring. For one thing, Priestley's character was always peculiarly open and honest; as a noted Calvinist opponent put it, "I love a man whom I can hold up as a piece of crystal, and look through him. For this I have always admired Dr. Priestley."[30] Moreover, what details we have of Priestley's upbringing and such casual references as his admitting his fear of the dark dovetail with his story of having endured the agonies of the damned.

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[29] Erikson, Young Man Luther, pp. 53-54.

[30] Augustus Montague Toplady quoted in a note by Rutt in Works of Priestley, vol. 1, pt. 1, p. 32. See also pp. 122-23, 135, below.

We can only speculate on why Priestley had such a poor self-image, on why he was unable to think of himself as one of God's elect, but perhaps the clue lies in his unsettled childhood. Shuffled from relative to relative, young Priestley may well have felt unwanted and therefore unworthy. Be that as it may, Priestley exhibited the classic symptoms of Erikson's "identity crisis." Following the period of intense self-deprecation, Priestley seems to have gone through the "moratorium" phase which Erikson has delineated in other youths. Unable to find an acceptable self-image in the Calvinistic framework, Priestley for a time submerged himself in his studies while questioning some of the tenets of orthodox Calvinism. Then, late in 1754, the youth found a world view and an identity. With his discovery of Hartley, his "identity crisis" was resolved. As he read "the most valuable production of the mind of man," Joseph Priestley became a materialist.

The twin theories of vibrations and association stand at the core of Hartley's Observations on Man. While Hartley held that the doctrine of association could stand regardless of that of vibrations, he considered the two theories as admirably suited for each other.[31]

Hartley developed a full-blown theory of vibrations from hints contained in at least two of the writings of Sir

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[31]David Hartley, Observations on Man, His Frame, His Duty, and His Expectations, ed. Theodore L. Hugulet (Gainesville, Florida: Scholars Facsimiles & Reprints, 1966), 1:72. This is a facsimile (2 vols. in 1) of the 1st edition of 1749, which was the only edition until Priestley published his abridged version in 1775.

Isaac Newton.[32] The essence of the doctrine of vibrations was a materialistic explanation of sensation. A sound, for instance, set the auditory nerve vibrating and the vibration traveled to the brain, composed of the same substance and continuous with the nerves. A tendency towards this vibration in a miniature way remained in the substance of the brain and served as the basis of memory. All sensations were explained in a similar way. Heat, for example, also caused vibration which proceeded to the medullary substance of the brain, thus causing the sensation of heat and leaving a tendency for the miniature of this vibration to reappear (memory of this heat). The vast differences in sensation were to be accounted for by differences of degree, kind, place, and line of direction in the vibrations.[33] Hartley, who practiced medicine although he did not have a medical degree,[34] gave innumerable explanations of bodily effects

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[32]Hartley, Observations, 1:5; Joseph Priestley, "A General View of the Doctrine of Vibrations," Introductory Essay I, Joseph Priestley, ed., Hartley's Theory of the Human Mind, on the Principle of Association of Ideas; With Essays Relating to the Subject of It (London: Printed for J. Johnson, 1775), pp. viii-x. The 2d (1790) edition of Priestley's Hartley's Theory has only slight differences, mainly in arrangement, from the first.

[33]Priestley provided an excellent brief summary in his "A General View of the Doctrine of Vibrations"; Hartley, Observations, 1:7-34 and passim.

[34]R. E. Anderson, "Hartley, David," DNB. There has not been much scholarship on Hartley. A good secondary account of his basic ideas can be found in Chapter VIII of Basil Willey, The Eighteenth Century Background; Studies on the Idea of Nature in the Thought of the Period (Boston: Beacon Press, 1964). The spread of his influence is briefly discussed at the end of the last chapter of this dissertation; scattered material in other chapters is also relevant.

which he thought showed the logic of his system. A palsy, for example, was explained by supposing that the nervous system became opaque and unable to transmit vibrations.[35] The nausea and unusual appetites of pregnancy, Hartley felt, were caused by the distension of the uterus, making the stomach unusually liable to vibrations.[36] In typically Enlightened fashion Hartley proceeded to explain practically every conceivable phenomenon in light of his theory.

Hartley explained pleasure and pain by imagining a continuum of degrees of vibration. Up to a certain point an increase in vibration would increase pleasure. At that certain point the vibration would become sufficient to cause pain which would increase with further degrees of vibration. Heat, which by degrees passes from a pleasant sensation to pain, was a concrete example here. This origin of pleasure explained its being more frequent in experience than pain by the greater degree of vibration needed to cause pain.[37] The surplus of pleasure over pain conveniently fitted the Enlightenment optimism in which Hartley so strongly shared.

It was from the work of the Reverend John Gay, who further developed some ideas of John Locke, that Hartley got the impetus for his elaboration of the theory of association. Gay abandoned the idea of an innate or implanted moral sense, but an original love of happiness postulated in his work

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[35] Hartley, Observations, 1:133.

[36] Ibid., pp. 164-65.

[37] Ibid., p. 40.

prevented Gay from holding the view that all thought developed by association from sensation. It remained for Hartley to extend the principle, used in a more limited way by Locke and Gay, to all mental action.[38]

The theory of association in its simplest form is that one idea while present in the brain will be related to other ideas present at the same time. Using his theory of vibrations, Hartley held that one vibration caused by sensation would become associated with another present at the same time. A later introduction of the one would have the power of stirring the miniature vibrations of the other. Thus memory would simply consist of some vibration from sensation giving rise to other vibrations which had been associated with it. By being presented to the mind together a sufficient number of times various clusters of vibrations would associate into more complex ideas. To take a classic example: The small child burns himself on a flame. The vibrations of pain become associated with those caused by the sight of the flame, although the painful vibrations recur only in less degree. With repetition they are also associated with the words for the circumstances (flame, fire, etc.). Thus out of physical sensation mental pleasures and pains are formed.[39] By the

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[38]Joseph Priestley, "A General View of the Doctrine of Association of Ideas," Introductory Essay II, Hartley's Theory, pp. xxii-xxiv. Hartley, Observations, 1:v; Willey, Eighteenth Century Background, p. 140.

[39]Hartley, Observations, 1:56-84, 143-45, and passim.

ongoing process of association, the desires, judgment, and passions all derived from sensation. Pleasant odors, for example, through association helped to account for the pleasure of contemplating rural scenes. The mental uneasiness of shame with respect to the sex organs was partially to be accounted for by their being located near the organs of excretion with their offensive odors.[40] Thus Hartley developed elaborate causal chains to show how many mental processes develop, and affirmed that every action, the seemingly voluntary powers of calling up ideas and of exciting and restraining affection, and in the end all human mental powers arose from sensation through association. Even if the mechanism of vibrations be rejected, Hartley felt that association would hold true with some other mechanism of the nervous system.[41] For Hartley there was no innate or implanted mental ideas or powers. The human mind followed the same mechanistic rules of cause and effect as the rest of the universe.

The crisis in 1754 in which Joseph Priestley adopted this materialistic view of the operation of the human mind was not an all or nothing affair. Young Priestley had previously been exposed to some of the elements that went into Hartley's scheme[42] and would later change his ideas on some

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[40] Ibid., p. 185.

[41] Ibid., pp. 501, 503.

[42] His acquaintance with both Newton and Locke is shown above. It may have been no minor coincidence that Priestley was reading Newton at the same time that the reading of Hartley had such an effect. Priestley had also read

matters. The reading of Observations on Man, with its "greatest" effect on his life, did not embed Priestley's mental patterns in concrete. It did, however, jell the ideas Priestley had been pondering and provided a focus, an orientation, a world view, that was to remain at the core of Priestley's thought for the half century of incredibly productive intellectual endeavor that was the very essence of the rest of his life. In 1754 Priestley, as he put it, was "established" in a mechanistic and determined world view.[43] This Hartleyan perspective provided unity and cohesion in the mature thought of Joseph Priestley, despite the variety of his undertakings. Subsequent chapters both will show how various subject areas reflect his central commitment to materialism and will delineate the details of his thought in those areas. The remainder of this chapter will briefly describe Priestley's strenuous efforts as a propagandist for Hartleyan materialism.

The published writings of Joseph Priestley are literally salted from end to end with praise for and recommendation of Observations on Man. The denomination of the book as "without exception, the most valuable production of the mind of man,"[44] is only the most extreme of hundreds of

Anthony Collins' A Philosophical Inquiry Concerning Human Liberty (Memoirs, 1:19), and he later (1790) saw to the republication of Collins' tract with himself as editor. Next to Hartley, Collins' pamphlet probably had the greatest immediate effect in Priestley's conversion to a deterministic outlook.

[43]Priestley, Memoirs, 1:19.

[44]Priestley, Institutes, 3:xxi.

such references. Later chapters will point out a few of the multitude of times when Priestley explicitly brought Hartley to the fore while writing on a variety of subjects. Although Priestley was liberal with praise for his intellectual forebears, none of them appear so frequently in Priestley's pages as does the author of Observations on Man. Priestley did not, however, limit his advocacy of Hartley to frequent citation and praise.

The most obvious of Priestley's efforts in behalf of his ideological mentor was the publication of an edition of Hartley's great work. Like many a convert, Priestley was absolutely convinced that the views he had taken up would ultimately prevail.[45] Hartley's magnum opus, however, existed only in the little-read original edition. Priestley hoped that an abridged version of the approximately one thousand page work might bring it wider acceptance. Accordingly, in 1775 he brought out an edition of Hartley containing mainly those sections relating to the theory of association. In doing so Priestley made it clear that he was not rejecting the theory of vibrations even though he largely eliminated those sections of the book. Priestley explained that he was "far from being willing to suppress the doctrine of vibrations; thinking that Dr. Hartley has

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[45]For example, Joseph Priestley, Disquisitions Relating to Matter and Spirit (London: Printed for J. Johnson, 1777), p. 356, and Joseph Priestley, editor, Anthony Collins, A Philosophical Inquiry Concerning Human Liberty (Birmingham: Thomas Pearson, 1790), pp. xv-xvi.

produced sufficient evidence for it,"[46] but that he hoped the abridged work would find a larger audience. In one of the introductory essays Priestley explained the theory of vibrations, and he left some references to it in his abridgment. Priestley also eliminated the moral and religious matter that composed the second part of the original work, not because it was not excellent, but because doing so left an easier and more compact volume. Priestley's strategy of pruning down Hartley's work may have been correct, for Priestley's Hartley went to a second edition in 1790.[47]

Priestley brought even wider attention (or notoriety) to Hartley with a publication of his own in 1777. In his Disquisitions Relating to Matter and Spirit Priestley took Hartley's system beyond the point to which Hartley himself was willing to commit himself in print. With the Disquisitions Priestley took the ultimate step and denied the existence of an immaterial soul. At least to the popular mind of the day, Hartleyan materialism thus reached its widest circulation in the image of "no soul Priestley."

Hartley's materialist system had no real need for a soul, that vaguely defined seat of the thinking, conscious, reflecting, moral, and religious attributes of man. Hartley had developed the love and knowledge of God by association

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[46]Priestley, Preface, Hartley's Theory, pp. iii-iv.

[47]Chapter VIII discusses Priestley's success in spreading Hartley's views. For Priestley's editions of Hartley see footnote 32 above.

from sensation like everything else.[48] Nevertheless Hartley posited the possibility of an "infinitesimal elementary Body" which stood between the brain and an immaterial soul. In an ultimate sense, he suggested his materialist system might only present sensation and ideas through the intermediary body to the soul, while in a practical sense his theories were true.[49] He was not willing to take a stand one way or another on whether matter could be endued with sensation and closed his first part of the Observations on Man with the opinion that the evidence was inconclusive on the matter of an immaterial soul.[50]

When he adopted the Hartleyan system, Priestley, like most of his age, had taken it for granted that man possessed an immaterial soul, but had thought it incapable of acting independently of the body. The question however concerned him,[51] and by the time of his publication of his edition of Hartley in 1775, he was willing to state that he was inclined to believe that man was not composed of the duality of matter and spirit, but rather that all mental powers were to be attributed to the organic brain. Priestley felt this would much improve Hartley's theory.[52] The furor resulting from

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[48]Hartley, Observations, pp. 486-92.

[49]Ibid., p. 34.

[50]Ibid., pp. 511-12.

[51]Priestley, Disquisitions, pp. xi-xiii.

[52]Priestley, "A General View of the Doctrine of Vibrations," Hartley's Theory, pp. xix-xxi.

this expression of doubt on the existence of an immaterial soul led Priestley to consider the matter further.[53] By 1777 he was ready to publish in his Disquisitions his famous arguments asserting an unmitigated materialism.

The metaphysicians of Priestley's day wrote of the immaterial soul as something which shared no properties with matter. Matter possessed the properties of extension (length, breadth, and thickness), solidity or impenetrability, and inertia and was lacking in all other powers. The immaterial soul possessed none of these powers and was capable of perception, intelligence, and self-motion. In strict usage such an immaterial substance, sharing none of the properties of matter, could not reside in any one place any more than another, "for properly speaking it is no where."[54] How an immaterial soul which in essence was nowhere, could reside in a specific body located in space presented a considerable problem. Priestley found none of the attempts of metaphysicians to solve it satisfactory.[55]

This, however, was but one of many problems that this concept of the soul raised. For Priestley one of the most pressing was the question of how an immaterial substance possessing no properties in common with matter could act upon matter. Many had struggled with the problem. Leibnitz had

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[53]Priestley, Disquisitions, pp. xiv-xv. Priestley also describes this development in Memoirs, 1:79-80.

[54]Priestley, Disquisitions, p. 54.

[55]Ibid., pp. 55-60.

postulated the "pre-established harmony" by which the Deity had ordained that the volitions of the soul would conveniently coincide with the motions of the body. Priestley found it "very amusing"[56] to contemplate such attempts at circumventing the problem. Newton, after all, had proclaimed that the first of the "rules of philosophizing" was to allow no more causes than was necessary to explain phenomenon. This, Priestley held, should be applied here as elsewhere.[57] Priestley stated that the simplest explanation did not require an immaterial soul at all, let alone the intermediary bodies which many postulated between the soul and the body. The intermediary bodies, to Priestley's mind, did not really solve the problem of no common properties, but merely made three bodies to deal with. The preposterous lengths to which such needless multiplication of causes went, felt Priestley, was well illustrated in the theory of Wollaston, who made this intermediary body lighter than air, thus allowing it to fly off carrying the soul at death.[58]

Priestley eliminated all the complications caused by the theory of an immaterial soul by denying its existence and holding the simplest explanation to be the incorporation of the properties ascribed to the soul into a newly defined matter. Priestley had adopted the theory of John Mitchel

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[56]Ibid., p. 62.

[57]Ibid., pp. 1-2.

[58]Ibid., pp. 74-79.

and Father Boscovich and had earlier explained it in his History of Discoveries Relating to Vision, Light, and Colours. This theory held that matter was composed of atoms, themselves divisible, and possessed of the powers of attraction and repulsion. Matter was not impenetrable and solid. While it had always been held that sensation, perception, and thought were not compatible with matter as previously defined, Priestley felt the new definition removed the difficulty. After all, it had been the inertness of matter that had given it its low estimation. If capable of other powers, why could it not be capable of perception?[59] Hartley's theory of the mind seemed "most admirably simple" without the encumbrance of an immaterial soul and an intermediary body.[60]

While the denial of the soul's existence seemed to solve a number of problems in metaphysics, it also appeared to create a number of others in the religious sphere. Priestley, however, felt that even in these areas it actually removed difficulties. If the properties usually assigned to the soul were now assigned to the body, would they not die with the body? Priestley had already confronted the problem earlier before he purged the possible existence of a soul from Hartley's system. For, as has been mentioned, he had earlier held that the operations of the soul depended in

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[59]Priestley, Disquisitions, pp. xxxviii, 19-23, and passim. For more on this theory of matter see Chapter V, below.

[60]Priestley, Disquisitions, p. 79.

some way upon the body. He had then used the affirmation that God would be capable of restoring that which had lapsed.[61] Now he emphatically asserted that that which had decomposed at death could certainly be recomposed by the being who had first set the system in motion. He did not doubt that "the same body that dies shall rise again."[62] After all, Priestley maintained, the Scriptures presented the true system as one of resurrection, not the continued survival of a separate soul. The common idea of the soul surviving the body was obtained from Oriental and Greek philosophy and had been a chief source of a great many corruptions of Christianity.[63] Priestley was only amused at the oft-quoted lines of the Welsh poet David Davis:

> Here lies at rest
> In oaken chest
> Together packed most nicely,
> The bones and brains,
> Flesh, blood and veins,
> and soul of Dr. Priestley.[64]

Upon death the entire man decomposed, but the hope of Christianity was in the resurrection.

Questioning the existence of an immaterial soul was by no means original to Priestley. The issue had been raised

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[61]Priestley, Institutes, 1:156-58.

[62]Priestley, Disquisitions, pp. 160-61.

[63]Ibid., pp. 123, 127, 156. The entire last section of this volume is an essay on the history of the ill influence of the Greek notion of the soul.

[64]Quoted in Holt, Priestley, p. 124.

in the deist controversy early in the century. Also, some Biblical scholars of note had made arguments against the notion from the study of the scriptures, arguments which Priestley drew upon and acknowledged in his work.[65] Despite the fact that some of the issues had been raised before, Priestley's advocacy of Hartley's materialism and his denial of the soul stirred up considerable heated opposition. Because he thought the subject "of great importance," and because he was so centrally committed, Priestley openly announced himself ready to argue his Hartleyan views "with any person who shall appear to me to have ability and learning equal to the discussion."[66] Indeed, "No Soul Priestley"[67] fomented and participated in a noteworthy controversial literature. While the Priestleyan materialism debate did not spill as much ink as did some of Priestley's more strictly theological controversies, it did, nonetheless, help to bring wider attention to Hartleyan metaphysics.

Priestley opened the campaign on the offensive. At the same time that he had his edition of Hartley in the press, he published his An Examination of Dr. Reid's Inquiry

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[65] A good review of the Eighteenth Century literature on the soul can be found in Thomas Cooper's "Appendix No. 2; Of Dr. Priestley's Metaphysical Writings," Memoirs, 1:299-310, 312.

[66] Joseph Priestley, A Free Discussion of the Doctrines of Materialism, and Philosophical Necessity, In a Correspondence Between Dr. Price, and Dr. Priestley (London: J. Johnson and T. Cadell, 1778), Introduction, p. xxxiii.

[67] For discussion of hostile caricatures of Priestley the reader is referred to Chapter VI.

Into the Human Mind on the Principles of Common Sense; Dr. Beattie's Essay on the Nature and Immutability of Truth; and Dr. Oswald's Appeal to Common Sense in Behalf of Religion (1774). Priestley's attack on these three representatives of the Scottish "common sense" school of moral philosophy[68] was filled with assertions that the essence of the "common sense" philosophers' method was simply to ascribe anything that they could not explain to an innate instinct in man. Priestley maintained that, to the contrary, Hartley's system could explicate the origin of the various emotions, feelings, and instincts which the Scottish philosophers, since they could not describe their origin, claimed were inherent in man's nature. Studying Hartley, Priestley explained, was like "entering upon a new world" and was far more enlightened that the "avowed ignorance" that he claimed was the core of the "common sense" method.[69] A good deal of ridicule and contempt pervaded Priestley's treatment of the Scotch philosophers.

Although Priestley himself came to regret the tone of this attack,[70] it is the vehemence and energy that Priestley put into defending his views that is really of more interest than the details of the argument. Volumes might be

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[68]Thomas Reid (1710-1796), the leading representative of the school, and James Beattie (1735-1803), a second rate common sense philosopher, are in the DNB. James Oswald, D.D., a clergyman who died in 1793, is not.

[69]Priestley, An Examination, Preface, pp. xix-xx.

[70]Priestley, Memoirs, 1:73.

filled with the quibbling minutiae of Priestley's controversial writing. We shall see that he felt obliged to defend his views in both theology and science in endless pamphlet wars. Such debating in print was a widespread eighteenth-century phenomenon, but there is in Priestley's outpouring of controversial writing a sense of almost desperate defense. Priestley was to find himself distinctly in the minority on many issues. His intellectual positions, despite their unpopularity, were of clearly vital importance in Priestley's mind. Indeed, the energy that he expended in their defense seems to add credence to the thesis that young Priestley actually had undergone an "identity crisis." For the stream of pamphlets add depth to a portrait of Priestley as a man whose life in a real sense was a life of the mind, a man whose ideology provided his identity. As he defended his intellectual positions, Joseph Priestley defended his very being.

Not all of Priestley's controversial writing in defense of materialism and its corollary determinism had the haughty tone of the Examination of "common sense" philosophy. Priestley replied to six of the writers who published against him on this subject.[71] The most gentlemanly of these was also

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[71]Joseph Berington, Richard Price, William Kenrick, John Whitehead (1740?-1804), Samuel Horsley, John Palmer (1729?-1790), and Jacob Bryant are all in the DNB. Priestley's controversial writings, like all his separate publications (not periodical articles) can be found in the chronology in Appendix B.

the one that has received the most attention. In A Free Discussion of the Doctrines of Materialism, and Philosophical Necessity in a Correspondence Between Dr. Price and Dr. Priestley (1778), he engaged in amicable dispute with his close friend Richard Price. Both authors remained unconvinced of each other's position. What stands out in reading their debate is that argument seldom comes to resolution when the opposite sides operate from totally different basic perspectives. Price, who remained one of Priestley's closest friends, could not share in the mechanistic view of man that permeated all of Priestley's thought. And Priestley, on the other hand, as their arguments missed each other in mid-air, remained locked within his own world view.

The great efforts Priestley put into his campaign in behalf of Hartleyan materialism showed that something more fundamental was involved than simply intellectual assent. Indeed, Priestley, who corresponded with Hartley briefly before Hartley's death in 1757, exhibited other symptoms similar to those of the religious convert. Priestley derived "very great satisfaction" from meeting with those who had known Hartley personally, and sought to discover if Hartley had left any unpublished parts of his materialist canon.[72]

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[72]Priestley, Leeds, April 20, 1772, to Theophilus Lindsey, "Original Letters from Dr. Joseph Priestley, F. R. S., to the Rev. Theophilus Lindsey, 1766-1803, and to the Rev. Thomas Belsham, 1789-1803," Dr. Williams Library, London. This important manuscript collection, which also includes a few miscellaneous items not indicated in the title, is available in the series British Records Relating to America in Microform (East Ardsley, Yorkshire: Micro Methods in conjunction with the British Association for American Studies,

Priestley's feelings about the Observations on Man were hardly distinguishable from those of fervent Christians for the Bible. When grave adversities came upon him late in life, Priestley turned to Observations on Man (in addition to his daily reading of the Bible), as a "never failing recourse" when trouble most pressed upon him.[73]

"Will Priestley assert the Materiality of God?" queried John Adams in a marginal note to one of Priestley's later works.[74] Adams' bemused remark strikes a particularly resonant chord, for Priestley, above all else, surely was a consistent materialist. As time went on Priestley became only more convinced and more consistent. When he issued a second edition of his Institutes of Natural and Revealed Religion in 1782, Priestley carefully removed his section on the spiritual attribute of God and all later references to it.[75] While Priestley was quick to affirm that men could not possibly presume to know what the absolute nature of God was with any certainty, he was not unwilling to assert the

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1965). It is cited hereafter as "Priestley--Lindsey Letters." Although many of these letters appear in Rutt, ed., Works of Priestley, they are very badly bowdlerized in that set.

[73]Priestley, May 9, 1800, to Theophilus Lindsey, "Priestley--Lindsey Letters." Chapter VII treats this subject in detail.

[74]Adams marginal note in An History of Early Opinions, printed in Zoltan Haraszti, John Adams & The Prophets of Progress (Cambridge, Mass.: Harvard University Press, 1952), p. 285.

[75]The second edition (Birmingham: Pearson & Rollason, 1782) drops the section that appeared on pp. 15-16 of volume one of the first edition and also references that appeared on pp. 18, 38, and 40-41.

possibility that some material essence for the Deity was "much more consistent" with the scriptural notion of omnipresence than a God, who, by being strictly immaterial, could not properly exist anywhere and could not act as a cause on matter.[76]

Joseph Priestley had come a long way from an agonized adolescent in mortal fear that the righteous Calvinist God had condemned him to hell. An unsettled childhood and ideological doubt had come to a resolution. Priestley could in his mature years affirm that the notion that the Deity was material was "an easy and very innocent manner of conceiving concerning God."[77] Even Priestley's God had come within the compass of his all-embracing world view. Whether "identity crisis" or intellectual event, David Hartley's Observations on Man in the late fall of 1754 had catalyzed the creation of the mind of a materialist.

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[76]Priestley, Disquisitions, pp. 103-13, quotation on p. 112.

[77]Ibid., p. 113.

CHAPTER III

THEORY AND PRACTICE

JOSEPH PRIESTLEY AND EDUCATION

The Hartleyan metaphysics that was at the core of all of Joseph Priestley's thought is nowhere more conspicuous than in his considerable efforts in the field of education. Indeed, when one looks beneath the numerous obvious instances where Priestley brought his Hartleyan theory into practice in his work as a teacher, it becomes clear that a corollary of Hartleyan determinism was actually a primary motivating factor behind these educational efforts. Since, according to the Hartleyan epistemology, the mind was a tabula rasa at birth, ready to be shaped by the physical sensations of the environment, nothing could be more important than seeing that the best possible influences would form the minds and characters of the young. In fact, Priestley was convinced that by the age of thirty or forty "a person's mode of thinking and his habits of life" had already been so determined by the impact of his environment that in most cases almost nothing could be done to change a person's ideas or manner of living.[1] Because this was

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[1]Joseph Priestley, "An Essay on the Best Method of Communicating Religious Knowledge to the Members of Christian Societies," Institutes, 1:xxix-xxx.

the case, because he firmly believed in these logical derivatives of his determinist world view, Priestley devoted "a great part of my life" to the furtherance of a "liberal and virtuous education."[2]

The spirit in which Priestley expended vast energies on education can be more vividly seen if we take a brief look at the remarkable motives of his long-time friend Anna Laetitia (Aikin) Barbauld when she and her husband adopted a child in 1776. Mrs. Barbauld, who achieved contemporary fame as a poet, educator, and literary editor, was unable to bear any children of her own. Her brother John Aikin, however, had a growing family, and the Barbaulds adopted one of his children, Charles Rochemont Aikin. While Mrs. Barbauld did not neglect to mention the love and affection that would develop, another consideration was also clearly in the forefront of her thoughts when she proposed the adoption to her brother. Although they had temporary charge of a number of students in their school, as committed environmental determinists the Barbaulds regretted not having "the disposal" of any child early enough and long enough to completely "follow our own plans and schemes in their education."[3] Joseph Priestley was more fortunate in the

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[2]Joseph Priestley, Miscellaneous Observations Relating to Education More Especially as it Relates to the Conduct of the Mind (Bath: Printed by R. Cruttwell for J. Johnson, London, 1778), Dedication.

[3]Anna Laetitia (Aikin) Barbauld, letter, [1776], to John Aikin, Grace A. Ellis, ed., Memoir, Letters, and a Selection from the Poems and Prose Writings of Anna Laetitia

numbers of minds that he could hope to shape. In addition to having "the disposal" of four children of his own, Priestley was to have a role in the education of vast numbers of other Anglo-American youth.

Priestley began his lifelong endeavors to favorably form youthful minds very shortly after he adopted his Hartleyan views at Daventry Academy. After a short unsuccessful pastorate in Needham Market in Suffolk,[4] in 1758 Priestley moved to Nantwich in Cheshire. Nominally pastor to a congregation at Nantwich, Priestley was principally "engaged in the business of a school-master" for the three years he remained in the village. The congregation had fewer than sixty members including many traveling Scotsmen and few children, leaving Priestley with "no scope for exertion with respect to my duty as a minister." Priestley repeated many of the sermons he had used at Needham Market.

Barbauld, 2 vols. (Boston: J. R. Osgood and Co., 1874), 1:81-85, and a later letter, p. 87. See her essay "On Education," 2:245-60. They became friends while Priestley was at Warrington. Priestley related in his Memoirs that Mrs. Barbauld told him that she was "first induced . . . to write any thing in verse" by reading some verses written by Priestley. Perhaps the best known of the number of poems by Mrs. Barbauld which relate to Priestley or his wife is "The Mouse's Petition," which was prompted by a mouse destined for scientific experiment seen on a visit to the Priestleys' house. Mrs. Barbauld's taking temporary care of one of Priestley's grandchildren when Priestley's son-in-law went bankrupt prompted Priestley to remark, "A friend in need is a friend indeed"; Joseph Priestley, Northumberland, Dec. 23, 1798, to Mrs. Barbauld, Hampstead, near London, in Thomas Edward Thorpe, Joseph Priestley (London: Dent & Co., 1906), pp. 160-62, and Priestley, Northumberland, Sept. 14, 1797, to the Rev. Theophilus Lindsey, "Priestley--Lindsey Letters."

[4]See pp. 76-77, below.

He contented himself with respect to religious education by giving some assistance in their own homes to the few families which had children.

Priestley was therefore free to devote great efforts to secular education in Nantwich. Day after day Priestley began teaching at seven a.m. and did not finish until seven in the evening. About twenty boys in one room and six girls in another received instruction until four o'clock, with only an hour's break for dinner. Priestley was proud of his efforts "to regulate it [his school] in the best manner"; he boasted in his Memoirs, "I think I may say with truth, that in no school was more business done, or with more satisfaction, either to master or the scholars, than in this of mine."[5] After completing his day of teaching at Nantwich, Priestley went about a mile to Dorfold, the family seat of James Tomkinson, a wealthy squire who achieved some eminence as a lawyer. At Dorfold Priestley spent the early evening as the private tutor to the children of the family.[6]

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[5]Priestley, Memoirs, 1:38-42. William Wilkinson is the only identifiable pupil of Priestley's school at Nantwich; this was the beginning of Priestley's acquaintance with this important ironmaster family and led to his marriage to Mary Wilkinson in 1762.

[6]Priestley in his Memoirs calls "Mr. Tomkinson" "an eminent attorney, and a man of large fortune." Tomkinson died at Dunstable on his way to London on March 5th or 7th, 1794, at age 83; Gentlemen's Magazine 64 (1794) : 283 and European Magazine and London Review 25 (1794) : 247. Presumably it was his son ("James Tomkinson, eldest son of James T., of Nantwich, Ches., gent.") rather than he who was admitted to the Middle Temple Nov. 7, 1757. Barristers, not attorneys, were normally admitted to the Inns of Court in this period, and he would have been 46 at the time:

Despite the Herculean efforts that Priestley put into these three years of teaching, little documentary evidence remains about his educational work in this period, the only time in which he was directly and primarily involved in pre-university level secular teaching. In his Memoirs Priestley noted only that he purchased a small air-pump, an electrical machine, and some other apparatus on which he taught his oldest students to duplicate some standard scientific experiments.[7] The only other sources for the content of Priestley's teaching at Nantwich are two letters which Priestley wrote a number of years later when he was asked for advice about teaching school. In them Priestley wrote that he had used an easy Latin grammar, and that he had his students begin with Latin editions which also included literal English translations before having them read the classics with only the aid of a dictionary.[8]

Middle Temple, London, Register of Admissions to the Honourable Society of the Middle Temple from the Fifteenth Century to the Year 1944, 3 vols. (London: Honourable Society of the Middle Temple, 1949), I:352. See Robert Robson, The Attorney in Eighteenth Century England (Cambridge: University Press, 1959) and, for the location of the family seat, Dorothy Sylvester and Geoffrey Nulty, eds., The Historical Atlas of Chester (Chester: Cheshire Community Council, 1966).

[7]Priestley, Memoirs, 1:41-42.

[8]Joseph Priestley, Warrington, May 18, 1766, to Rev. Caleb Rotheram, Rutt, ed., Works of Priestley, vol. 1, pt. 1, pp. 64-65. Priestley used the popular A New Grammar of the Latin Tongue by John Holmes, master of the grammar school at Holt in Norfolk, "not because I altogether liked it, but because I thought it easy for beginners." The Latin with English editions of John Clarke (1687-1734) [see the DNB] and the Latin collections made for the use of the Eaton school were among the texts Priestley utilized.

Priestley thought that having the pupils actually write English compositions and then correcting the errors was by far the best method of teaching English; he urged the use of every opportunity to make them "write in their own language." The practicality and modernity that was reflected in teaching science by experiment and English grammar by writing was also evident in his strong recommendation: "Do not fail to teach geography along with the classics, for by this means your pupils will indirectly acquire much real knowledge." Priestley had a little school library of books of travel and natural and civil history which he had the students read "with the maps before them" to supplement instruction from John Newbery's modern Geography.[9]

Although Priestley continued to have interest in primary and secondary education, after these three years at Nantwich his pedagogic efforts were chiefly in the radically modernizing world of collegiate instruction. Anglo-American higher education in the eighteenth century was changing from a curriculum primarily consisting of Aristotelian subjects taught in Latin to a diverse offering of modern and relevant as well as classical subjects taught in English. The English dissenting academies which had

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[9]Joseph Priestley, Warrington, Jan. 7, 1767, to Rev. Caleb Rotheram, Rutt, ed., Works of Priestley, vol. 1, pt. 1, p. 67, and the letter cited in footnote 8. Priestley recommended a number of works published by John Newbery (1713-1767), the first English publisher to deal extensively in books for children, some of which were at least partially authored by Oliver Goldsmith and Dr. Johnson (see DNB). Priestley recommended Robinson Crusoe for the pupils "at leisure hours."

emerged after the Restoration, when religious tests excluded dissenters from Oxford and Cambridge, were in the lead in many of these developments.[10] In September 1761 Priestley left Nantwich to become Tutor of Languages and Belles Lettres at one of the most noted of these institutions, Warrington Academy in Lancashire.

"The whole plan of education, from the grammar-school to the university," Priestley wrote in his An Essay on a Course of Liberal Education for Civil and Active Life (1765), had for centuries been "calculated" for the clergy, who were thought to be the only persons "to have any occasion for learning." "Rhetoric, logic, and school divinity, or civil law" had "comprised the whole compass of human learning for several centuries." Now, however, the world was a vastly different place where "the objects of human attention are prodigiously multiplied." The educational system, however, had not yet been altered sufficiently to provide a "proper course of studies" for those who were destined to be industrialists, merchants, or political figures. Like Benjamin Franklin and other proponents of educational modernization, Priestley argued, "the studies of youth should tend to fit them for the business of manhood."[11]

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[10] Smith, Birth of Modern Education; Bernard Bailyn, Education in the Forming of American Society (Chapel Hill: University of North Carolina Press for the Institute of Early American History and Culture, 1960), pp. 89-90; and Lawrence A. Cremin, American Education: The Colonial Experience, 1607-1783 (New York: Harper & Row, 1970), pp. 326, 510-14.

[11] Joseph Priestley, An Essay on a Course of Liberal Education for Civil and Active Life. With Plans of Lectures

Joseph Priestley made his most noted contribution to this changing educational curriculum with his advocacy of the teaching of modern history (including "the theory of laws, government, manufactures, commerce, naval force, &c.")[12] At Warrington Academy Priestley introduced a course on history and general policy along with courses on the history of England and the English constitution and laws. Priestley's views reached a larger audience when he published his Essay on a Course of Liberal Education in 1765. This volume contained outlines of the three courses in addition to his brief Essay advocating a reformed curriculum for "liberal education." The argument in that Essay, which has just been noticed in the preceding paragraph, of course pointed to the eminent practical value of these particular courses in fitting students for "the business of manhood." The more general course on history and general policy, which was the only one of the three to be published in full, brought wider attention to this new academic discipline. Priestley was not the first to introduce modern history; as early as 1681 Francis Tallents of Shrewsbury Academy published his View of Universal History,[13] an historical chart for his

on I. the Study of History and General Policy. II. The History of England. III. The Constitution and Laws of England, To Which are Added Remarks on a Code of Education Proposed by Dr. Brown, in a Late Treatise Intitled, Thoughts on Civil Liberty ([London: Printed for C. Henderson, etc.], 1765), pp. 1-5.

[12]Ibid., p. 10.

[13]Smith, Birth of Modern Education, pp. 51-52.

students that included modern as well as ancient persons and occurrences. It was not until Priestley's day, however, that this addition to the curriculum became widespread, to a considerable degree as a result of Priestley's efforts.[14]

Priestley's Lectures on History and General Policy, which were published over two decades later (1788), were a guide to the study of history, not a chronological narrative of major historical events. Priestley opened the lectures with a brief discussion of the value of history in (1) invigorating the mind by amusing the imagination and interesting the passions, in (2) improving the understanding and strengthening judgment, and, above all, in (3) strengthening morality by showing that in the long span of history virtue is always productive of desirable results and vice is not.[15] Priestley thus devoted the three introductory lectures to such considerations as the need for knowing history of battles to avoid mistakes in warfare, to more general uses of history like the value that the knowledge of history has in freeing "the mind from many foolish prejudices, particularly an unreasonable partiality for our own country,"[16] and to the argument that nothing shows "true greatness of mind" better and inspires emulation of it more

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[14]See Chapter VIII.

[15]Joseph Priestley, Lectures on History and General Policy (Birmingham: Printed by Pearson and Rollason for J. Johnson, London 1788), pp. 1-37.

[16]Ibid., p. 10.

than "a simple narration of some incidents in history."[17] Priestley then filled a massive 29 chapters with an encyclopedic treatment of the sources, methodology, and standard works of history. This manual for the study of history, which stood at the core of the Lectures, provided a sensible summary of seemingly every topic of use to perceptive reading and writing of history. Priestley's work here, as in so many of his publications, was to compile synopses (with citations) of principal authorities on various subjects. For example, Priestley noted that his account of Greek and Roman coins and rates of interest had been collected "almost wholly" from John Arbuthnot's Tables of Ancient Coins, Weights, and Measures, explained and exemplified,[18] and "a great part" of his description of the sources for English history came from Bishop William Nicolson's classic The English Historical Library, or a Short View and Character of Most of the Writers, Now Extant . . . Which May be Serviceable to the Undertakers of a General History of this Kingdom.[19] Priestley's Lectures on History and General Policy

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[17]Ibid., p. 21.

[18]Ibid., p. 125. Arbuthnot (1667-1735) may be found in the DNB. His Tables, 2d ed. 1727, had originally been published about 1705.

[19]Priestley, Lectures on History, p. 189. Nicolson (1655-1727) [misspelled Nicholson by Priestley] is in the DNB. The 1st ed. was published in London in three parts, 1696-99; the 2d ed., corrected and augmented (which Priestley doubtless used), came out in 1714.

were rounded out with a number of lectures on the theory of government and economics. Much of this material also was of the nature of a compendium. A number of the views Priestley expressed in this part of the Lectures are discussed in a later chapter.[20]

Besides his Essay on a Course of Liberal Education and the Lectures which he published later, Priestley made two further contributions to the new academic subject of modern history in this period. While he was at the Academy in 1765 he published his A Chart of Biography, which he had begun to draw earlier while a schoolmaster at Nantwich. The chart had an accompanying Description of a Chart of Biography; With a Catalogue of all the Names Inserted in It, and the Dates Annexed to Them. In 1769, two years after he had left Warrington Academy, his A New Chart of History (with its Description) appeared.

In introducing his Chart of Biography Priestley explained, "The proper employment of men of letters is either making new discoveries, in order to extend the bounds of human knowledge; or facilitating the communication of the discoveries which have been made already." Although

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[20]Priestley did not publish anything more than the outlines of the other two sets of lectures he had introduced (on the history of England and on the English constitution and laws) because the subsequent publication of Blackstone's Commentaries (beginning in 1765), Francis Stoughton Sullivan's An Historical Treatise on the Feudal Law, and the Constitution and Laws of England (1772) and Robert Henry's History of England (beginning in 1771) rendered these lectures less necessary. Priestley, Preface, Lectures on History, p. vi.

Priestley (who was not always known for great modesty) admitted that the latter role could be played by "persons of inferior abilities" compared to those who made "new discoveries of importance,"[21] he pointed out that systematizing and spreading knowledge was a sine qua non of its advancement. The Chart of Biography and the Chart of History are intriguing examples of Priestley's many efforts at "facilitating the communication" of the thought of the later years of the Enlightenment.

Priestley argued that his charts were of special value because they were consonant with the way the mind actually functioned. Hartleyan epistemology, which Priestley accepted as literal truth, established that all ideas in the mind were the result of physical impressions on the nerves of the body.[22] Nothing could be more advantageous to the learning of historical data than to have it in a form that was identical with the way the mind represented time. Because the abstract idea of time is probably represented in the minds of "all persons whatever" by the idea of a perceptible line of varying lengths, expressing "intervals of time by lines, facilitates an operation, which

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[21]Joseph Priestley, A Description of a Chart of Biography; With a Catalogue of all the Names Inserted in It and the Dates Annexed to Them (London: Printed for J. Johnson, 1785), pp. 3-4. Because of the retention of several outdated statements and the way in which some matters are noted in footnotes, it is clear that the text of this edition is still that of the first edition.

[22]See Chapter II above.

the minds of all men have recourse to, in order to get a just and clear idea of them."[23] In short, Priestley maintained that his charts presented chronology in precisely that form which Hartley had shown to fit the way the mind operated.[24]

The Chart of Biography, which was the more original of the two productions, contained about two thousand names arranged both in columns according to their principal achievements (statesmen and warriors, poets and artists, etc.) and linearly (with lines to show the length of their lives) on a scale running from 1200 B.C. to 1800 A.D. Various devices like dotted lines indicated uncertain or unknown dates. The accompanying Description provided an alphabetical list with a bit more exact data than could be included on the chart.

Priestley's A New Chart of History used the identical scale that he had developed for his earlier Chart of Biography. As the latter part of the title of its Description indicated, the chart was intended to show a View of the Principal Revolutions of Empire, that have taken Place in the World. A careful scheme of spaces, colors, and lines portrayed the duration, type of demise (conquest or

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[23]Priestley, Description of a Chart of Biography, pp. 6-7.

[24]Ibid., pp. 6-10; Joseph Priestley, A Description of a New Chart of History, Containing a View of the Principle Revolutions of Empire that Have Taken Place in the World . . . Sixth edition, corrected (London: Printed for J. Johnson, 1786), pp. 7-8, 11-12.

peaceful) and extent of various kingdoms, empires, and states. Priestley went to some pains to point out the virtues of regularity, accuracy, and method that made this chart superior to two other historical charts that were in circulation at the time.[25] Short summaries of the governmental history of various states were alphabetically presented in the Description that went with the chart.

Although the bare bones of Priestley's charts do not tell a great deal about his historical thought, they at least do provide some clues to the scope of what he believed ought to be included in the study of history. History for Priestley clearly included more than just war and politics; while the Chart of History illustrated only the sheer facts of the various changes of government and empire, his earlier and complementary Chart of Biography allotted just one of its six divisions to statesmen and warriors. That division was, as Priestley admitted, "very full,"[26] but the other five divisions were all given over to mathematicians and scientists, divines and metaphysicians, historians and geographers, and various other types of intellectuals and artists. Although the charts were most inclusive and detailed for the classical era of Greece and Rome and for the history of Western Europe, other areas were not neglected. While the western areas of Asia and the

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[25]Priestley, Description of a New Chart of History, pp. 5-11, 15, 99-102.

[26]Priestley, Description of a Chart of Biography, p. 19.

Near East received better treatment, there was at least some material on China, Japan, Korea, and a few other oriental nations. Priestley justified including "rather more Englishmen in proportion, than those of other nations" in the Chart of Biography with the argument that the chart was designed to fit the needs of English students.[27]

Chronology was a subject of considerable interest and debate in the eighteenth century. Indeed, there was all-out international "scientific war" among theologians, historians, astronomers, and amateur scholars over the fine points of various schemes of dating historical and Biblical events.[28] Priestley's popular charts did not, however, enter the fray. Although a great deal of careful work went into their construction, they were designed as teaching aids, not as a contribution to these scholarly controversies. For the early sections of both charts Priestley utilized the chronological work of Sir Isaac Newton.[29] While Newton's work was neither avant-garde nor the most recent, many of the same assumptions pervaded the rest of the vast quibbling over the calculation of solstices and comets and the dating of demythologized Greek and Latin mythology and Biblical

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[27]Ibid., p. 18.

[28]Frank E. Manuel, The Eighteenth Century Confronts the Gods (Cambridge: Harvard University Press, 1959), p. 97.

[29]Priestley, Description of a Chart of Biography, p. 14; Priestley, Description of a New Chart of History, p. 7.

"history."[30] Doubtless for the generations of youth who used the charts in learning their history, such matters made little difference.

Although Priestley's efforts on behalf of the new academic subject of modern history claimed considerable time and effort while Priestley was at Warrington Academy, he did not neglect the disciplines that were traditionally the concern of a Tutor in Languages and Belles Lettres. Priestley's efforts in the area of linguistics in these years are of special interest.

In the field of English grammar in eighteenth-century Britain there was a strong movement towards authoritarianism. Many persons concerned with the structure of the English language favored the establishment of a national academy to set hard and fast rules of what was correct and what was not. Among Priestley's contemporaries, Bishop Robert Lowth, who gained fame for his study of the Hebrew poetry in the Old Testament, was but one of those to produce grammars incorporating much of this outlook. Lowth's grammar was widely adopted, and the authoritarian stance also appeared in the popular grammars of William Ward and in the grammar of the historian and biographer Charles Coote.[31] During his years as a tutor

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[30] Chapter III of Manuel's excellent The Eighteenth Century Confronts the Gods discusses the chronological disputes. Priestley is not mentioned in this context.

[31] John Cameron McLaughlin, Aspects of the History of English (New York: Holt, Rhinehart, and Winston, 1970),

at Warrington Academy, Joseph Priestley brought an opposing minority view to some notice.

Before Priestley went to Warrington, while he was still teaching school at Nantwich, he wrote an English grammar. This grammar, however, was not in print in time for use in his school there. Now that he was teaching linguistics at the Academy, Priestley produced A Course of Lectures; on the Theory of Language, and Universal Grammar (1762). This Course of Lectures, which was printed for the use of his Warrington students but not published, expanded the outlook on language expressed in the earlier The Rudiments of English Grammar (1761). Priestley's position at Warrington gave a certain currency to the views expressed in these volumes and in the eight other editions of the Rudiments that appeared in England during his lifetime.[32]

Grammar, wrote Priestley in a statement of his basic position, "admits of no standard but that of custom."[33] In

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pp. 77-84; George H. McKnight, Modern English in the Making (New York and London: D. Appleton and Company, 1928), pp. 377-91.

[32]Priestley, Memoirs, 1:44-45, 48; Priestley, letter of May 18, 1766, cited in footnote 8 above. R. C. Alston, A Bibliography of the English Language from the Invention of Printing to the Year 1800; a Systematic Record of Writings on English and on other Languages in English (Leeds: Printed for the Author by E. J. Arnold, 1965--), 1:40-41. Ronald E. Crook, A Bibliography of Joseph Priestley, 1733-1804 (London: the Library Association, 1966), pp. 111-14. There was also a Paris: Batilliot, 1799 edition translated by Ferdinand Bayard.

[33]Joseph Priestley, The Rudiments of English Grammar; Adopted to the Use of Schools, With Observations on Style, English Linguistics, 1500-1800 (A Collection of Facsimile Reprints), No. 210 (Menston, England: The Scolar Press,

taking this stance in support of usage as the standard of language, a position that is accepted as fundamental by most modern linguists, Priestley knew that he was running counter to prevailing trends of the time. Nonetheless he was sure "a publick Academy, invested with authority to ascertain the use of words"[34] was not a viable or advisable method of establishing correct forms for English grammar. Language was not something that could be fixed. From its very origin writing had a natural history; indeed, contrary to the belief of Newton and Hartley, it had not been originally God-given.[35] For Priestley, language developed, grew, and changed by material causes and effects just like the rest of the structure of his Hartleyan universe. Language responded to the needs of communication and would continue to change as those needs changed in the ongoing machinery of the cosmos. Just as Priestley had brought the soul, which Hartley had left as an exception outside the operation of his mechanistic system, into that system, so did Priestley bring language fully into the realm of environmental determinism. Grammar was made consistent with Priestley's fundamental world view; "The general prevailing custom,

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1969; facsimile of 1st ed.: London: R. Griffiths, 1761), p. vi. Several of Priestley's other linguistic works also appear in this series.

[34]Ibid., p. vii.

[35]Joseph Priestley, A Course of Lectures on the Theory of Language and Universal Grammar (Warrington: Printed by W. Eyres, 1762), pp. 23-30.

where ever it happen to be, can be the only standard for the time that it prevails."[36]

Priestley's advocacy of usage as the guide to correctness and his naturalistic explanations of the history and theory of language did not, however, cause him to undervalue the study of language. To the contrary, he strongly urged scientific study of "that art which is the means of preserving and bringing to perfection all other arts."[37] Neither did it mean that effort should be spared trying to improve the native tongue. Rather, improvements would come when the majority of better writers were convinced by rational arguments showing ways in which the structure of grammar could be made more consistent. Betterment should come through this study of the "analogy of the language," through making it congruent with itself,[38] not through vain attempts of "hypercritics" who with their too-rigid rules would only hinder literary excellence by constraining a rich and welcome diversity.[39]

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[36]Ibid., p. 184.

[37]Ibid., p. 8.

[38]Ibid., pp. 180, 185; Priestley, Rudiments, pp. vi-vii.

[39]Priestley, Rudiments, "Observations on Style," pp. 54, 56-58, 62. Priestley thought a number of grammatical terms were superfluous and berated those who were overly fussy about such things as ending a sentence with a preposition (in many cases he thought this was preferable).

While he was at Warrington Academy Priestley "intended to have composed a large treatise on the structure and present state" of the English language. Although he began work on the project, after resigning as tutor Priestley largely dropped his interest in linguistics as other activities crowded in on his time. Subsequent efforts were confined to an addition to the later editions of The Rudiments of English Grammar based on his Warrington notes; in the late 1780's Priestley gave the materials he had assembled for his "large treatise" to Sir Herbert Croft, an impecunious litterateur who projected a major dictionary and grammar but never completed the project.[40] The nine editions of Priestley's Rudiments of English Grammar were thus his major contribution to the minority viewpoint that usage should be the standard for language. John Fell's Essay Towards an English Grammar (1784) and the work of the Scottish rhetoricians Hugh Blair and George Campbell also chiefly followed this position, but authoritarianism in the main triumphed. The millions of copies of over 50 English and American editions of Lindley Murray's An English Grammar (1st ed. 1775), which leaned heavily towards the majority's dogmatic position, stand witness to that victory.[41]

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[40] Priestley, Memoirs, 1:44-45. On Croft see the DNB.

[41] See the sources cited in footnote 31. For Priestley's efforts in particular see Dwayne Sidney Strasheim's short (83 pp.) and none too inspired "Joseph Priestley on Grammar and Usage" (Ph.D. dissertation, Ohio University, 1970). Strasheim does not find any previous

In addition to the lectures in the areas of history and linguistics which have been discussed, Priestley taught a number of other courses during the six years he was at Warrington Academy. These courses in Latin, Greek, Hebrew, French, Italian, logic, oratory and criticism, civil law, and even anatomy need not long detain us here. Priestley only taught the logic and Hebrew when he first went to Warrington; soon he traded them with another tutor. He taught anatomy for just one year.[42] There is no evidence to indicate that there was much worthy of special note about Priestley's teaching of most of these courses, except perhaps for the very fact that Warrington Academy included some of them (like anatomy for general students) at all. Warrington, however, was well ahead of its time in offering a widely diverse curriculum from which students could choose those items that fitted their needs.[43] Priestley's introduction

grammars to which he can trace Priestley's departure from linguistic orthodoxy, but argues that the general context of Priestley's life, thought, and other efforts must have been the liberalizing factor. One influence of Priestley's efforts in this field has not been forgotten since Priestley recorded it in a note in later editions of the Rudiments: Priestley urged minimal use of French words in English, and David Hume told a bookseller that reading Priestley's Rudiments made him notice the Gallicisms and peculiarities of his own style.

[42]Joseph Priestley, Warrington, Feb. 14, 1766, to Rev. Caleb Rotheram, extract printed in a note, Rutt, ed., Works of Priestley, vol. 1, pt. 1, p. 50; Priestley, Memoirs, 1:48-49.

[43]Smith, Birth of Modern Education, pp. 160-68; Herbert McLachlan, Warrington Academy; its History and Influence, Remains Historical and Literary Connected with the Palatine Counties of Lancaster and Chester, n.s. vol. 107 (Manchester: Printed for the Chetham Society, 1943).

of modern history discussed earlier was thus part of a broader curricular reform at Warrington Academy.

Only one set of lectures from these other courses which Priestley taught at Warrington appeared in print, and that volume, A Course of Lectures on Oratory and Criticism (published later in 1777), is not of as much significance as Priestley's historical and linguistic work. In these Lectures Priestley retained a good deal of the classical orthodoxy of rhetoric, a legacy which reached back to Aristotle. While Priestley did utilize the work of John Ward, the leader of the classical school of rhetoric, there were, nonetheless, some noteworthy innovations in Priestley's course. He incorporated the writing of history, science, and fiction as well as learned argument and dialectical reasoning into what had been traditionally the more limited discipline of effective public speaking. More important, however, was Priestley's rejection of the classic six-part or four-part oration and the substitution of scientific method as the recommended structure of argumentation. In Priestley's view a tightly argued geometric proof was a good model for the communication of knowledge. Another major difference that separated Priestley's book from other works on rhetoric was his repeated use of Hartleyan theory to explain why certain methods of speaking and writing worked best; as he put it in his preface, there was "constant reference" to the "doctrine of the association of ideas" which he had "of late endeavoured to draw [to] some degree

of attention. . . ." A Course of Lectures on Oratory and Criticism was nevertheless not a central factor in Priestley's quite successful attempt to popularize Hartley; these Lectures did not achieve any marked popularity and appeared in only two editions during Priestley's lifetime.[44]

In 1767 Priestley moved to Leeds and ended the nine-year period in which he had been primarily a secular educator, first as a school teacher, then as a tutor in a dissenting academy. In that year Priestley again became primarily a Christian minister. Warrington Academy was in a financial difficulty, and Priestley needed more money for his growing family than the "bare subsistence" provided by a salary of £100 a year and a house and any profit made from the £15 a year paid by each student who boarded with the Priestley's.[45] In becoming pastor of Mill-Hill Chapel in Leeds, however, Priestley was not abandoning his great commitment to the education of the young. To the contrary, Priestley believed that the single most important function of the Christian minister was religious education.

The next chapter shows that Joseph Priestley considered his primary and most important role in life as that of theologian and Christian minister; a preponderant portion

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[44]Joseph Priestley, A Course of Lectures on Oratory and Criticism (New York: Garland Publishing Co., 1971; facsimile of London: Printed for J. Johnson, 1777), pp. i-vi (for the quote) and passim; Wilbur Samuel Howell, Eighteenth Century British Logic and Rhetoric (Princeton: Princeton University Press, 1971), pp. 632-48.

[45]Priestley, Memoirs, 1:55-56.

of the vast bulk of his multitudinous efforts went into the duties of that role. As we shall see in that chapter, religion was of paramount importance for Priestley because he believed that its function in the Hartleyan universe was to inculcate virtue. Within this realm of religion, the church and the Christian minister did not serve "magical," "superstitious," or sacerdotal functions, but rather were chiefly instructional institutions. After 1767 Joseph Priestley thus continued his devotion to a "liberal and virtuous education" in the sphere of the church. If his time was now mainly involved in religious education, Priestley was nonetheless just as deeply committed to the effort to favorably form youthful minds. As Priestley put it,

> The business of instruction, both promiscuous to all descriptions of persons from the pulpit, and what for my own part, I deem to be more really useful still, the instruction of young persons of different ages separately, is almost all that can be undertaken with propriety, and good effect, by any person in the situation of ministers.[46]

A brief description of the whole of what Priestley saw as the institutional role of the church will serve to point up this continuing centrality of education in his lifework.

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[46] Joseph Priestley, "The Proper Constitution of a Christian Church, Considered in a Sermon, Preached at the New Meeting in Birmingham, November 3, 1782," in Discourses on Various Subjects, Including Several on Particular Occasions (Birmingham: Printed for the author by Pearson and Rollason, 1787), p. 118. Priestley's educational concept of his ministry was stressed by Henry Ware, Jr. in his memoir of Priestley in Henry Ware, ed., Views of Christian Truth, Piety, and Morality Selected from the Writings of Dr. Priestley, With a Memoir of his Life (Cambridge, Mass.: James Munroe & Co., 1834).

In Priestley's ecclesiology the church as an institution served at least two other valid functions in addition to religious education. Priestley himself, however, did not much focus his energies on either of these other roles. Priestley felt that one of these, the duty of admonishing (and in extreme cases excluding) wayward members of the congregation, should be performed by the people of the congregation, not the minister.[47] The second additional role of the church, public worship, was not neglected by Priestley, but never claimed the central focus of his attention. In 1792 Priestley published a pamphlet defending public worship against the objections to it offered by Gilbert Wakefield,[48] and earlier Priestley had issued a book of worship pruned of all references to the Trinity and other "superstitions."[49] Because such pruning also was applied wholesale by Priestley to some traditional roles of the church, the main growth of religious education stood out all the more on the tree of useful purposes comprising the institutional church.

Priestley's rationalist ecclesiology had no place in it for the mysterious. The church did not dispense grace

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[47]Priestley, "The Proper Constitution of a Christian Church," pp. 133-43.

[48]Joseph Priestley, Letters to a Young Man Occasioned by Mr. Wakefield's Essay on Public Worship: to which is Added, a Reply to Mr. Evanson's Objections to the Observance of the Lord's Day (London: Printed for J. Johnson, 1792).

[49]Joseph Priestley, Forms of Prayer and Other Offices for the Use of Unitarian Societies (Birmingham: Printed by Pearson and Rollason, for J. Johnson, London, 1783).

through sacraments, and it was "superstition" for a congregation to believe that ministers have "any more of a spiritual character than themselves."[50] In his An History of the Corruptions of Christianity Priestley described how the Lord's Supper and baptism had been corrupted from simple memorials and signs of commitment into sacraments conveying special powers and merits.[51] While the Protestant Reformation had done a great deal towards purging the institution of the church from these and other unwarranted accretions, Priestley felt that there was clearly more to be done. For evidence that "superstition" was still rampant in many minds with regard to the nature of the church and its ministers Priestley argued that one only had to look at the "great disgrace" that "most of our congregations" still believed baptism and the Lord's Supper could only be administered by ordained ministers, and most also believed that "the service of regular ministers" was "so very necessary, that if any minister be indisposed, or necessarily absent from his place, the congregation should either engage the services of another minister, or not meet for public worship at all." For Priestley, ministers were chiefly just educated religious teachers. When a minister

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[50] Priestley, "The Proper Constitution of a Christian Church," pp. 130-31.

[51] Joseph Priestley, An History of the Corruptions of Christianity, 2 vols. (Birmingham: Printed by Piercy and Jones, for J. Johnson, London, 1782), 2:1-91. See also Joseph Priestley, A Free Address to Protestant Dissenters on the Subject of the Lord's Supper, and a Letter to the Author of the Protestant Dissenters Answer to it, 3d ed. (London: Printed for J. Johnson, 1774).

could not be had, printed sermons should be read: "For living instructors are, in many respects, preferable to dead ones. But the living instructions of dead men are certainly preferable to none."[52]

Priestley had begun to develop a complete program of religious instruction long before he resumed being primarily a Christian minister in 1767. While he was still a student at Daventry Academy he started to compose a systematic treatise on religion for use in teaching young men.[53] This treatise, his Institutes of Natural and Revealed Religion, now began to appear in print in the years Priestley was at Leeds.

Priestley had also earlier tried to put his ideas about the importance of religious education into practice. In the one brief period prior to his coming to Leeds when he had been chiefly occupied with his role as a Christian minister, Priestley had labored arduously on his "schemes

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[52]Priestley, "The Proper Constitution of a Christian Church," pp. 129-33. See also Joseph Priestley, An Address to the Unitarian Congregation at Philadelphia, Delivered on Sunday, March 5, 1797 (Philadelphia: Printed by Joseph Gales, 1797), pp. 11-13. Priestley himself was not ordained until May 18, 1762, although he had already served two congregations. This was not unusual among dissenters, some liberal dissenters even completely dispensing with ordination. Priestley believed that as long as there was no superstition involved ordination was desirable as a simple special occasion for prayer and exhortation. See his preface on this subject in Joseph Priestley, A View of Revealed Religion; a Sermon Preached at the Ordination of the Rev. William Field of Warwick, July 12, 1790 (Birmingham: Printed by J. Thompson and sold by J. Johnson, London, 1790).

[53]Priestley, Memoirs, 1:22.

for promoting the interest of religion." As has been alluded to earlier, on completing his studies at Daventry Academy Priestley served for three years as assistant to an aged minister at a small congregation in Needham Market in Suffolk. His efforts at religious education at Needham, however, had only negative results. In addition to catechising the children, Priestley initiated a course of lectures on religion using the manuscript of his Institutes. Unfortunately the only result was dissension and division in the congregation as they began to discover his heterodox views. These problems and a consequent small salary led to his leaving Needham and the beginning of the period in which much of Priestley's time was occupied in secular teaching.[54] Fortunately, when Priestley at Leeds again spent a large portion of his time with religious education the results were much more favorable.

An extensive system of religious education was the noteworthy feature not only of Priestley's six year pastorate at Mill-Hill Chapel in Leeds (1767-1773), but also of his ten years (1781-1791) with the New Meeting at Birmingham as well as his years (1791-1794) at Gravel-Pit Meeting in Hackney

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[54] Ibid., pp. 24-26. There is no truth in Priestley's brother Timothy's assertion that Priestley tried to hide his real views at Needham Market. On the untrustworthiness of Timothy Priestley as a source see footnote 5 in Chapter II above. For other evidence about Priestley's honesty about his opinions at Needham (even though throughout his life he felt that he should not stress polemic theology from the pulpit during services), see the note in Rutt, ed., Works of Priestley, vol. 1, pt. 1, pp. 30-32.

near London.[55] Priestley wrote a number of publications for the system of religious education that he practiced in these congregations; published sermons and prefaces advocating his scheme brought wider attention to this central aspect of Joseph Priestley's career as a Christian minister.

Although he varied some of the elements of the system slightly over these years, the basic structure of Priestley's plan of religious education was based on a series of separate classes for different age groups. The first of these classes, that for children between about five and twelve or fourteen years of age, Priestley taught from a simple and easy catechism. For this class Priestley published A Catechism for Children and Young Persons (1767). The second class in Priestley's scheme was devoted to the study of the scriptures and contained youth in their teenage years. Priestley's A Scripture Catechism, Consisting of a Series of Questions, with References to the Scriptures Instead of Answers (1772) was published for this second class. Priestley's principal class was for young men in their late teens and in their twenties. This "academical class" crowned the system and was the group which received a thorough and systematic course on the elements of religion from Priestley's Institutes and his History of the Corruptions of Christianity.[56]

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[55] As noted in Chapter VIII, Priestley did not have much success as a Unitarian minister in the home of his last years, Northumberland, Pennsylvania, although he did have a class of young men for a time which he instructed from his Institutes.

[56] Priestley, "Essay on the Best Method of Communicating Religious Knowledge," pp. xxxi-xxxix; Joseph Priestley,

Although he thought that the sermon had decided limitations as a teaching device, Priestley proposed that every four or five years a minister might also present a systematic series of sermons as a form of religious education, especially if the young women of the congregation were not included with the young men in the principal academic class.[57] Additional efforts by Priestley for his system of religious education included the publication of an altered and revised version of Isaac Watt's A Short View of the Whole of Scripture History for the use of his first and second classes and having special maps engraved to use in teaching scriptural geography.[58]

To make time for these extensive classes in religious education, Priestley recommended that a variety of weekday services, especially those in preparation for the Lord's Supper, be abolished.[59] The matter of the minister's time, however, Priestley felt should never prevent the religious instruction of the young. As he told the Gravel-Pit Meeting

Preface, to his A Particular Attention to the Instruction of the Young Recommended in a Discourse Delivered at the Gravel-Pit Meeting, in Hackney, December 4, 1791, on Entering the Office of Pastor to the Congregation of Protestant Dissenters Assembling in That Place (London: Printed for J. Johnson, 1791).

[57]Priestley, "Essay on the Best Method of Communicating Religious Knowledge," pp. xxxv-xxxvi.

[58]Priestley, Preface to A Particular Attention to the Instruction of the Young Recommended. Joseph Priestley, ed., Dr. Watt's Historical Catechism, with Alterations (2d ed.; Birmingham: 1788) is omitted entirely in the Crook bibliography.

[59]Priestley, "Essay on the Best Method of Communicating Religious Knowledge," pp. xl-xli.

in his first sermon as their pastor, "Having undertaken the office of pastor in this congregation, I am willing to submit to any personal inconvenience rather than that which I conceive to be the most important part of the ministerial duty should not be discharged."[60] Over the years Priestley surely did not spare his own efforts on religious education, but rather devoted great energy to the furtherance of this "most important part of the ministerial duty."

While much of the educational efforts of the later part of Priestley's career were thus devoted to getting correct religious and moral ideas into the impressionable minds of those under thirty, Priestley did not abandon secular education. While Priestley was pastor at Gravel Pit meeting, he gave both his lectures on history and general policy and a course on science[61] at Hackney College, a tiny institution filled with both Hartleyan thought and notable intellectual figures. Hackney College was a hot bed of liberal and radical thought as well as an educational institution of outstanding quality during its brief existence (1786-1796). Priestley's lectures, which he gave without pay, did not long assist this short-lived dissenting academy. The school lost Priestley's help when he emigrated to America in

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[60]Priestley, A Particular Attention to the Instruction of the Young . . . , in Rutt, ed., Works of Priestley, 15:470.

[61]Joseph Priestley, Heads of Lectures on a Course of Experimental Philosophy, Particularly including Chemistry, Delivered at the New College in Hackney (London: J. Johnson, 1794). For Priestley's science see Chapter V.

1794.[62] Giving these two courses for a couple of years at Hackney College was to be Priestley's last active role in secular education, even though Priestley himself did not expect that to be the case.

In going to America Priestley had great hopes for a collegiate institution which was to be set up in the near-frontier area on the Susquehanna that was to be Priestley's final home. He expected his last years to be filled with active teaching at this proposed college. Priestley was appointed President of the ill-fated Northumberland College or Academy, and even proposed that temporarily he could teach almost all the subjects except the biological sciences. Priestley had offered the use or even the gift of his impressive library and scientific apparatus, and the state of Pennsylvania finally passed an act to aid the institution in 1804, but a half-finished building was the only tangible result of Priestley's expectations of spending his last years in the all-important work of educating the young.[63]

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[62]Herbert McLachlan, "The Old Hackney College, 1786-1796," Unitarian Historical Society Transactions 3, no. 3 (Oct. 1925) : 185-205. Richard Price, Gilbert Wakefield, and William Hazlitt the essayist are perhaps the most widely known of a considerable number of figures of some note who were connected in one way or another with Hackney College.

[63]Aside from the various series of private correspondence used in Chapter VII, which trace much of the effort and hopes on behalf of the Northumberland Academy, most of the pertinent sources are quoted extensively in part 2 of Joseph Samuel Hepburn, "The Pennsylvania Associations of Joseph Priestley," The Journal of the Franklin Institution 244 (1947) : 95-105.

Late in 1794, while he still was hopeful about being involved in forming youthful minds and characters at the college in Northumberland, Priestley turned down the offer of the professorship of chemistry at the University of Pennsylvania. The Priestleys found Philadelphia expensive and distasteful; Priestley's wife was particularly unwilling for him to accept the position; and they had just gone through the considerable difficulties of getting their huge quantity of belongings into the Northumberland wilderness.[64] Priestley thus pinned his hopes of teaching on Northumberland Academy and unfortunately ended his days with little opportunity to personally expend his efforts in behalf of "a liberal and virtuous education."

We have seen that Priestley was not alone in many of his educational interests and concerns. In early 1800 one of Priestley's most famous contemporaries with a strong interest in education wrote to ask for advice. Thomas Jefferson, who would be elected president later in the year, was deeply involved in planning a "modern" university for Virginia and hoped that Priestley would assist in drawing up "a good plan" for the school.[65] The brief "Hints for Public Education"

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[64] Joseph Priestley, Northumberland, Nov. 11, 1794, to Doctor [Benjamin] Rush, Philadelphia, Schofield, ed., Scientific Autobiography, pp. 282-83; Priestley, Northumberland, Nov. 12, 1794, to Rev. Theophilus Lindsey, "Priestley--Lindsey Letters."

[65] Thomas Jefferson, letters of Jan. 18, 1800 and Jan. 27, 1800 to Joseph Priestley, Paul Leicester Ford, ed., The Works of Thomas Jefferson, 12 vols. (New York and London: G. P. Putnam's Sons, 1904-5), 9:95-99, 102-105.

that Priestley sent in reply[66] urged a broad curriculum for the "gentlemen and those who are designed for offices of civil and active life" who would attend the university in addition to those seeking professional training (e.g. medical students, et al.) Priestley's "Hints" appear to have had no great importance in Jefferson's educational thought, but only because Jefferson already had been imbued with a similar zeal for a reformed curriculum.[67] Indeed, in asking for advice Jefferson had told Priestley that "no one in the world" was better qualified than Priestley was to suggest what courses the proposed university should offer.[68]

Despite the failure of Northumberland Academy, there could be no doubt of the continuing truth of Priestley's assertion that he had devoted "a great part of my life" to education. Because he believed that men's minds were formed by their environments before they reached middle age, Priestley would have thought himself derelict to an obvious duty if he had not. Joseph Priestley was a man of the intellect, and from his central intellectual commitment had come considerable efforts to see that the best secular and religious education possible would be among the environmental factors determining the thoughts and characters of youth.

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[66]Printed in Smith, Priestley in America, pp. 116-22.

[67]Roy J. Honeywell, The Educational Work of Thomas Jefferson, Harvard Studies in Education, vol. 16 (Cambridge: Harvard University Press, 1931; reprint ed., New York: Russell and Russell, 1964).

[68]Jefferson to Priestley, Jan. 18, 1800, as cited in footnote 65 above.

CHAPTER IV

IN DEFENSE OF A "SCANTY CREED"

THE MORALITY-ORIENTED THEOLOGY OF JOSEPH PRIESTLEY

Joseph Priestley saw the defense and purification of revealed religion as the central commitment and accomplishment of his life. Time and again Priestley reiterated that theological studies were his chief occupation. In his last major scientific work he noted,

> I give a decided preference to theological studies; and . . . here, as in Europe, I give the greatest part of my time to them. They are unquestionably of unspeakably more importance [than scientific studies] to men, as beings destined for immortality. . .[1]

In his first large theological volume he had asserted, ". . . comparatively speaking, no kind of knowledge, besides that of religion deserves the name. . . ."[2] Priestley was very familiar with the view that he should not have wasted his time on theology and should have devoted his energies to his scientific studies and other endeavors. While he was used to hearing this judgment both from enemies like Gibbon[3] and

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[1]Joseph Priestley, The Doctrine of Phlogiston Established and That of the Composition of Water Refuted (Northumberland: Printed for the Author by A. Kennedy, 1800), Preface, p. vii.

[2]Priestley, Institutes, vol. 1, Dedication, p. iv.

[3]". . . Give me leave to convey to your ear the almost unanimous, and not offensive, wish of the philosophic

from certain of his friends,[4] his response was always the same. After the Birmingham Riots the Philosophical Society at Darby sent him an address of condolence which expressed the hope that Priestley would "leave the unfruitful fields of polemical theology, and cultivate that philosophy [i.e. science] of which you may be called the father."[5] He responded with his characteristic "Excuse me, if I still join theological to philosophical [i.e. scientific] studies; and if I consider the former as greatly superior in importance to mankind to the latter."[6] Priestley proved this endlessly professed loyalty by the production of a staggering quantity of theological publications.

Priestley's great efforts fall into both of the long standard divisions of theological study: natural theology and revealed religion. He devoted two large works to the explication of the religious knowledge that could be derived from consideration of the universe alone. The first of these works on natural theology, volume one[7] of his Institutes of

world: that you would confine your talents and industry to those sciences in which real and useful improvements can be made. E[dward] Gibbon, Jan. 28, 1783, to Joseph Priestley, printed in J. E. Norton, ed., The Letters of Edward Gibbon, 3 vols. (London: Cassell and Co., 1956), 2:320-21.

[4]See Priestley, Disquisitions, pp. xxiii-xxiv.

[5]"An Address to Dr. Priestley," Priestley, Appeal on Riots, pt. 1, Appendix 2, pp. 179-81.

[6]Priestley to the Philosophical Society at Derby, Appeal on Riots, pt. 1, Appendix 2.

[7]In the first edition. Later editions did not have this format of three separately bound volumes.

Natural and Revealed Religion, was a rehearsal of the standard arguments about the structure of moral law built into the machinery of the cosmos and proofs of the existence of God from natural phenomena. "The best of all possible worlds" was, for Priestley, providentially designed so that virtue resulted in happy consequences and vice in misery. Priestley offered many illustrations of this moral ordering of creation. For example, he asserted that promiscuous sexual relations led to the misery of an old age filled with "the idea of pleasures which cannot be enjoyed; and which ought to have been long abandoned for entertainments more suited to years. . . ."[8] Priestley believed that it was an undeniable fact that the structure of the world was designed to impress the minds of men with the advantages of morality. Demonstrations like this and such standard arguments for the existence of the Deity as the necessity for a First Cause also received attention in Priestley's other major work on natural religion, part one of his Letters to a Philosophical Unbeliever (1780). This second publication was more specifically directed against the attacks upon natural theology by Hume and Holbach.

Both of these volumes echoed Priestley's central commitment to a mechanistic world view. Most of their arguments were based on unbroken chains of material causes and effects. Although part one of Letters to a Philosophical

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[8]Priestley, Institutes, 1:194-95.

Unbeliever attempted to come to grips with Hume's refutation of materialism's basic proposition, the connection between effects and causes, Priestley's materialist-determinist outlook did not allow a very penetrating critique of Hume. Thoroughly caught up as he was in Hartley's epistemology, Priestley simply could not really fathom Hume's attack on such a matter-of-fact explanation of how man perceives the universe about him. Priestley asserted that Hartley's doctrine of the association of ideas[9] could supply answers for all of the problems raised by Hume. "Compared with Dr. Hartley," he wrote, "I consider Mr. Hume as not even a child."[10] As Kant noted, Priestley's fundamental assumptions could at times narrow his understanding.[11]

These two volumes and Priestley's other writings on natural theology, however, were but a very small part of his voluminous religious publications. Despite the affinity of Priestley's mind for the religion of the Great Clockmaker of the deists, there was always in Priestley's work a clear proviso that what could be discovered of God by studying his works was manifestly insufficient and that special

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[9]Discussed in Chapter II above.

[10]Joseph Priestley, Letters to a Philosophical Unbeliever, Pt. I, 2d ed. (Birmingham: Printed by Pearson and Rollason for J. Johnson, London, 1787; orig. pub. 1780), p. 126. Several additions to this work were published by Priestley, but bibliographic complexity makes it easier to cite them separately.

[11]Immanuel Kant, Prolegomena to Any Future Metaphysics in T. V. Smith and Marjorie Green, eds., Berkeley, Hume and Kant (Chicago: The University of Chicago Press, 1960), p. 265.

divine revelation was both a moral necessity and an historical fact. In the preface to part one of his Letters to a Philosophical Unbeliever Priestley was careful to quote his own earlier stipulation that he was treating what might have been discovered concerning the Deity from the contemplation of nature. In actual historical fact revelation had been necessary, and it was probable that reason unaided by revelation would never have reached such a state of knowledge.[12] History shows, Priestley asserted, that without divine revelation men had "ideas of God, of virtue, and of a future state" that were "very lame and imperfect."[13]

The great bulk of Priestley's theological writings were therefore devoted in one way or another to the revealed tenets of the Judeo-Christian tradition. It must be quickly pointed out, however, that Priestley definitely did not consider the realm of revelation to be one of ineffable mystery. Rather, it was a sphere in which the same rational rules that applied to other historical facts could be used to demonstrate that the Deity had, because it was necessary to promote the morality of the human race, intervened in the natural world.

There must have been, Priestley believed, some primal divine revelation of the crucial doctrine of the resurrection of the dead and condign punishment for vice

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[12]Priestley, Letters to a Philosophical Unbeliever, Pt. I, pp. xvii-xviii quoting Priestley, Institutes, 1:3.

[13]Priestley, Institutes, 1:167.

in an afterlife. Although traces of this tenet remained throughout human cultures, religious knowledge became progressively corrupted.[14] It became necessary for the Deity to intervene in the mechanistic structure of the universe he had created, in order to enlighten the incredibly immoral pagan world. The Old and New Testaments contained, for Priestley, firm historical records of these divine revelations.

Priestley's voluminous defense of the historical truths of revealed religion had two main parts. One mode of defense was the pruning of unreasonable corruptions from Christian dogma. The essentials which remained could then be successfully defended in the reasonable world of the eighteenth century. The other was the defense itself, using such methods as historical reasoning and comparative religion. Both aspects formed an essential part of Priestley's Institutes of Natural and Revealed Religion, which he had planned and began to write at Daventry Academy when his central outlook was being formed. Both aspects were intertwined throughout the rest of his career, although many of Priestley's major publications of the 1780's were devoted to the purgation of corruptions, while the last decade of his life saw a flood of works in defense of revelation. This

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[14]Priestley, Institutes, 1:158-59; Joseph Priestley, Socrates and Jesus Compared (Philadelphia: Printed for the Author and sold by P. Byrne, 1803), pp. 24-25; and Joseph Priestley, The Doctrines of Heathen Philosophy Compared with those of Revelation (Northumberland: Printed by John Binns, 1804), pp. 4, 25, 273-75. The Doctrines of Heathen Philosophy included a reprint of Socrates and Jesus Compared.

dual aspect of Priestley's writings on revealed religion is clear from his earliest theological writings. Some of the details would change, but the basic stance would remain the same throughout his career.

Immediately after leaving the Academy, while he was in his first pastorate (1755-8), Priestley wrote a piece that criticized the reasoning of the apostle Paul. The manuscript was anonymously submitted to the great Biblical scholar Nathaniel Lardner and to Lardner's neighbor and friend Caleb Fleming, a liberal dissenting polemicist. Both men urged the publication of a part of the manuscript.[15] This became Priestley's first theological publication, The Scripture Doctrine of Remission, which shows that the Death of Christ is no Proper Sacrifice, nor Satisfaction for Sin; but that Pardon is Dispensed Solely on Account of Repentence, or a Personal Reformation of the Sinner (1761).[16] Part of the manuscript, however, Lardner did not approve. While the published portion is of some interest, the unprinted portion is of greater significance.

The Scripture Doctrine of Remission was essentially a collection of Scripture citations and commentary designed to prove that the doctrine of the atonement of Christ in any form was unscriptural. As such it is of interest chiefly in

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[15]Priestley, Memoirs, 1:30-33.

[16](London: Printed for C. Henderson under the Royal Exchange, R. Griffiths, and P. A. DeHondt in the Strand, 1761). Priestley's name did not appear on the title page.

documenting a stage in Priestley's changing Christology.[17] In collecting these Bible passages, however, Priestley came across other verses which caused him to make the considerably more radical and significant remarks that Lardner objected to. While reading Pauline epistles, Priestley noted several places where he felt Paul clearly did not reason correctly. Lardner decidedly disapproved of the publication of these demonstrations of Paul's fallibility. Later when Priestley was at Nantwich his enlarged version of these objections was almost published, but Dr. Andrew Kippis, a prominent liberal dissenter and literary figure, persuaded Priestley to wait until his reputation was more secure.[18] Thus "On the Reasoning of the Apostle Paul" did not finally appear in print until it was published in sections in 1770 and 1771.[19] Nevertheless, the crucial stance Priestley takes in this piece, the stance which was to be at the core of his defense of revelation, dates from the

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[17]See below, pp. 93-95.

[18]Priestley, Memoirs, 1:33-34.

[19]Priestley included it in parts in vols. 2 and 3 of the Theological Repository which he started to edit in 1769. All contributions appeared under pseudonyms, but Priestley acknowledged which were his own when he brought vol. 3 to a close and temporarily suspended the Repository in 1771. Sales and financial contributions had not been sufficient to enable him to continue publication. See Herbert McLachlan, "The Earliest Unitarian Periodical," chap. 3, The Story of a Nonconformist Library (Manchester: The University Press, 1923).

studies he made at Needham Market between 1755 and 1758 and echoes down through all his writings.

Paul, Priestley contended, had gone beyond the bounds of correct reasoning in order to argue certain points which he wished to make. For example, Paul magnified Melchizedeck, an obscure Old Testament figure, into the head of an order of priests superior to the Levites in order that he could make Christ a priest of Melchizedeck. Also Paul went to great lengths to argue that Christians were successors to the Jewish nation in the Abrahamic covenant.[20] Refuting Paul's reasoning on such obscure theological questions might seem of little importance, but actually it had sweeping implications. Priestley was denying the divine inspiration of the Scripture writers, and had adopted his stance of defending the Bible only as written history that was to be judged like all other histories. "Many mistakes in Livy or Tacitus," he noted, "do not make us disbelieve the principal facts of the Roman history."[21] The inspiration of the Scriptures was a doctrine which Priestley believed could only hinder the effort to convince unbelievers. Men of the eighteenth century could see mistakes and unreasonable things in the Bible. If they had to take all or nothing, Priestley argued, they would take nothing. Christianity could only be defended by allowing historical

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[20] Priestley, "On the Reasoning of the Apostle Paul," reprinted in Rutt, ed., Works of Priestley, 7:370-84.

[21] Ibid., p. 369.

truths to stand on the basis of rational evidence free from mistakes, dated reasoning, and accumulations of corruption. "I cannot help thinking," Priestley wrote, "that the defence of revelation is greatly and unnecessarily encumbered with the defence of the inspiration of the sacred writers. . ."[22]

Priestley's most famous and most voluminous theological undertaking was his advocacy of the doctrine of the simple humanity of Christ. Here, as elsewhere, his basic method was to treat revealed religion as a form of history that must stand the test of rational inquiry. Priestley had emerged from his critical intellectual crisis at Daventry Academy with a qualified view of the doctrine of the atonement and with an Arian view of Christology (i.e. Christ was more than a simple man, but was not one person of a triune God). The former view, as we have seen, was rapidly discarded even before Priestley came into print in 1761. As noted above, The Scripture Doctrine of Remission, which resulted from Priestley's theological studies during his first pastorate at Needham Market (1755-58), denied that sharing in the propitiation of the death of Christ had anything to do with salvation. His second pastorate at Nantwich and his tutorial position at Warrington filled much of his time with teaching. Only when he took over the Mill-Hill Chapel in Leeds in the fall of 1767 did he again devote more

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[22] Ibid., p. 368. These full statements may not have been in the original remarks written before 1761, but the import of denying Paul's infallibility as a writer clearly had these implications.

of his energies to "speculative theology." Soon after settling in Leeds he carefully studied Nathaniel Lardner's Letter on the Logos and adopted what is known as the Socinian position.[23] Priestley now joined the sixteenth-century religious reformer Faustus Socinus in arguing that Christ had been fully human, even though especially appointed by God.

Lardner's Letter on the Logos had been written in 1730 but was published (anonymously) in 1759. It argued for the humanity of Christ on grounds that might have been expected from a respected, rather conservative, Biblical scholar. Basically Lardner cited the many Scripture passages which said Christ was a man or asserted the unity of the Deity, and then explained (or explained away) those passages cited by defenders of the doctrine of the Trinity. Numerous Biblical scholars were cited on various texts.[24]

A considerable element of wanting to believe may well have been a major factor in Priestley's conversion to Socinianism by Lardner's pamphlet. As a materialist, he had long since discarded religious elements involving mystery and what he saw as irrational etherealism. Doubtless Priestley was relieved to find such eminent and concrete grounds for the rejection of the ambiguities of the Arian

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[23] Priestley, Memoirs, 1:57.

[24] Nathaniel Lardner, A Letter Written in the Year 1730, Concerning the Question Whether the Logos Supplied the Place of an Human Soul in the Person of Jesus Christ reprinted in The Works of Nathaniel Lardner, D.D. With a Life by Dr. Kippis, 10 vols. (London: W. Ball, 1838), 10:73-185.

position. At any rate, once converted by the Letter on the Logos, Priestley himself for the most part used arguments other than Lardner's Scripture citations to prove the doctrine of the total humanity of Christ.

Priestley, of course, in various publications against the doctrine of the Trinity did cite the familiar Bible passages long used by Unitarians. He also frequently pointed up the typical rationalist complaint about the impossibility of three persons being one God.[25] His own special contribution, however, was to attempt to demonstrate that the Socinian position had been the doctrine of the early church, and that the divinity of Christ had been a corruption brought into the church over a century later through the influence of Greek Platonism. As Priestley put it in his summary of the huge Trinitarian controversy which he aroused,

> We all agree to be determined by the sense of scriptures; but, on account of our preceding prejudices, we are not agreed what this sense is; and experience shows that, when any controversy is to be decided by an attention to words and phrases only, the decision will long remain in doubt. . . . But . . . there is another . . . easier and surer method of ascertaining the true meaning of the scriptures; and that is, to inquire in what sense they were actually understood by [the early Christians] . . .[26]

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[25]See especially his pamphlet overview of the arguments in Joseph Priestley, A General View of the Arguments for the Unity of God, and Against the Divinity and Pre-Existence of Christ; From Reason, From Scriptures, and From History (Philadelphia: Thomas Dobson, 1794). This went through a multitude of editions, the first being in 1783.

[26]Joseph Priestley, "Letters to the Bishops," printed in Thomas Belsham, ed., Tracts in Controversy with Bishop Horsley, by Joseph Priestley . . . With Notes by the Editor, to Which is Annexed a Review of the Controversy in Four

The Priestleyan Trinitarian controversy, which was to encompass a huge section of the eighteenth-century theological world, had a small prelude in Leeds starting in 1770. Priestley became concerned that advocates of Methodist viewpoints were gaining considerable attention among those of the "lower sort" even in his own congregation.[27] As a result, starting with An Appeal to the Serious and Candid Professors of Christianity on the Following Subjects, viz. i. The Use of Reason in Matters of Religion, ii. The Power of Man to do the Will of God, iii. Original Sin, iv. Election and Reprobation, v. The Divinity of Christ, and vi. Atonement for Sin by the Death of Christ, in 1770 Priestley published a series of three inexpensive pamphlets which he hoped would promote his rationalist, drastically pruned, creed among the poorer classes.[28] As their titles indicated, these pamphlets

Letters to the Bishops by the Same Author, Never Before Published (London: Printed by R. and A. Taylor for the London Unitarian Society, 1815), pp. 471-72. Priestley promised to review the controversy in the form of a serious address to the bishops and legislature in several of his contributions, esp. the preface of Defences of Unitarianism for the Years 1788 & 1789. However, he did not publish the manuscript before leaving England, at which time he left it with Belsham. Belsham published four of the six letters when the controversy was renewed a decade after Priestley's death.

[27] Priestley, Memoirs, 1:60.

[28] [Joseph Priestley], An Appeal to the Serious and Candid Professors of Christianity . . . (Leeds, 1770); [Joseph Priestley], A Familiar Illustration of Certain Passages of Scripture Relating to the Power of Man to do the Will of God, Original Sin, Election and Reprobation, the Divinity of Christ, and Atonement for Sin by the Death of Christ (Leeds, 1770); [Joseph Priestley], The Triumph of Truth; Being an Account of the Trial of Mr. E. Elwall for Heresy and Blasphemy, at Stafford Assizes, 1726 (Leeds, 1770). First editions of these tracts are very rare or

had a considerably wider scope than the advocacy of Priestley's recently acquired Socinianism. Indeed, they summarized many aspects of the sort of faith that resulted from Priestley's injunction, "We, therefore, as dissenters, shall be absolutely inexcusable . . . if we do not give the most unbounded scope to the use of our reason in matters of religion."[29]

Priestley's pamphlets, which were originally published under the pseudonym "a Lover of the Gospel," but which quickly became known as his, were intended chiefly for local consumption. A number of the flurry of replies came from authors who lived nearby.[30] Nonetheless, one of

nonexistent. The Trial of Elwall was appended to several of the later editions of the Appeal to Serious and Candid Professors.

[29]Joseph Priestley, "The Importance and Extent of Free Inquiry in Matters of Religion: A Sermon Preached before the Congregations of the Old and New Meetings of Protestant Dissenters at Birmingham, November 5, 1785," in Discourses on Various Subjects (1787), p. 170.

[30]These included the following: a pamphlet by Cornelius Cayley, a Methodist with Leeds connections, which could not be traced even in the early nineteenth century when Rutt was editing Priestley's Works; Richard Elliot, Vicarious Sacrifice: or the Reality and Importance of Atonement for Sin by the Death of Christ. Asserted, and Defended against the Objections of Dr. Priestley, in his Appeal, Familiar Illustrations, &c. (London: Printed for the Author and sold by J. Johnson and J. Marsom, 1783); [William Hey] ("A Lover of the Bible"), A Short Defence of the Doctrine of the Divinity of Christ, with Some Remarks Upon a Late Appeal to the Serious and Candid Professors of Christianity. The Second edition. To Which is Added a Supplement, Containing Observations Upon a Late Familiar Illustration of Certain Passages of Scripture (Leeds: John Binns, 1772) [first ed. also published by Binns in 1772]; [William Hey], A Short Defence of the Doctrine of Atonement for Sin by the Death of Christ. With Remarks upon Some Late Publications Upon that Subject (Leeds: J. Binns, 1774); Rev. Thomas Morgan [of Morley, near

the Methodist-leaning anonymous replies (by Priestley's friend William Hey, a Leeds surgeon) came to be noticed in divinity lectures at Cambridge,[31] and by 1787 more than thirty thousand copies of the various editions of the Appeal to the Serious and Candid Professors of Christianity had been distributed.[32] Compared to the flood of controversial writing after the publication of Priestley's An History of the Corruptions of Christianity in 1782, however, this was a distinctly small affair.

Leeds], An Appeal to the Common Sense of Plain and Common Christians, in Behalf of the Old Christianity of the Gospel (Leeds: J. Bowling, 1771); Rev. Thomas Morgan, Letters to the Rev. Dr. Priestley, of Leeds, in Defence of an Appeal to the Common-Sense of Plain and Common Christians, in Behalf of the Old Christianity of the Gospel, and in Defence of the Author (Leeds: G. Wright, 1772); [Thomas Reader], A Letter to a Lover of the Gospel Occasioned by his Appeal to Serious and Candid Professors of Christianity (London: J. W. Pasham, 1772); [Ambrose Serle], An Address to the Serious and Candid Professors of Christianity on the following Subjects . . . Occasioned by an Appeal, Lately Published on the Same Subjects, 2d ed. (London: J. Buckland, 1773); and a tract under the pseudonym Philagathus, A Practical Improvement of the Divinity and Atonement of Jesus, Attempted in Verse, Humbly Offered as a Supplement to the Tracts Lately Published by Mr. Cayley . . . [and others] (Halifax, 1772). Ambrose Serle, a minor British official, Secretary to Lord Howe, 1776-78, and writer of strongly Calvinistic publications [see Edward H. Tatum, ed., The American Journal of Ambrose Serle (San Marino: The Huntington Library, 1940)], is the only one of these authors besides Hey of any prominence. Priestley replied in Letters and Queries Addressed to the Anonymous Answerer of an Appeal to the Serious and Candid Professors; to the Rev. Tho. Morgan, and to Mr. Cornelius Caley (Leeds: John Binns, 1771).

[31]John Pearson, The Life of William Hey, 2d ed. (London: Printed for Hurst, Robinson, & Co. [etc.], 1823), pp. 38-45. Hey's pamphlet was highly recommended in lectures by his brother John, Norrisian professor of Divinity.

[32]Priestley, Memoirs, 1:60.

"He is certainly one of the most dangerous enemies of Christianity that is now in the world," wrote John Wesley in urging a Methodist answer to Priestley in 1785.[33] By 1789 the Gentleman's Magazine was "so overwhelmed with letters for and against Dr. Priestley . . ." that they hoped for a respite from the vitriolic Priestleyan Trinitarian controversy.[34] Before it was over an Anglican had been made a bishop, a Presbyterian had received a Princeton D.D., and the theological school at the Hague had published a prize dissertation, all for opposing Priestley's Unitarian arguments. Priestley was denounced and his arguments controverted in Cambridge's 1786 commencement sermon, in Oxford's Bampton lectures, and in a host of other publications by Roman Catholics, Methodists, an Arian, a large number of Anglicans, and others. The final tally showed a staggering total of over fifty publications attempting to refute Priestley's equally voluminous defense of his position.[35]

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[33]John Wesley, Manchester, April 3, 1785, to Rev. John Fletcher, John Telford, ed., The Letters of the Rev. John Wesley, 8 vols. (London: The Epsworth Press, 1931), 7:264-65.

[34]Gentleman's Magazine 69 (May 1789) : 447.

[35]See Appendix C for the bibliography of the controversy. For John Jamieson's Princeton D.D., see David Donaldson, "Memoir of Dr. Jamieson," Supplement to Jamieson's Scottish Dictionary (London and Paisley: Alexander Gardner, 1887), p. 11. The Dutch prize dissertation and a Dutch response defending Priestley's views will be found in Appendix C. For one telling of the story of Samuel Horsley's reward of the bishopric of St. Davids see the account (strongly favorable to Horsley) in John Nichols, Literary Anecdotes of the Eighteenth Century Comprising Memoirs of William Bowyer, Printer, F. S. A. and many of his Learned Friends, 9 vols. (London: Printed for the Author by Nichols, Son, and Bentley, 1812-16), 4:678-81.

An History of the Corruptions of Christianity had spurred the major theological debate of the 1780's in England.

"We find nothing like divinity ascribed to Christ before Justin Martyr. . . ."[36] Priestley's citations of church fathers and account of dogmatic history in support of this assertion formed only the first section of his An History of the Corruptions of Christianity. Further sections went on to trace the history of the development of such other corruptions as the atonement, the mass and other sacraments, and other established Christian dogmas. It was Priestley's treatment of the historical development of Trinitarian doctrine, however, which was the focus of the ensuing controversy, a controversy which enveloped the English (and to some extent, foreign) theological world.

An History of the Corruptions of Christianity, Priestley admitted in its preface, still had marks of its origin as an intended closing section of the Institutes he had started in his early 20's at Daventry Academy as a text for the young.[37] Growing like Topsy into two large volumes, it did not have as much scholarly paraphernalia as it might otherwise have had. The bitter attacks Priestley faced, however, should not be much blamed on that circumstance. Both sides in the debate that raged from the publication of

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[36]Joseph Priestley, An History of the Corruptions of Christianity, 2 vols. (Birmingham: Piercy and Jones, for J. Johnson, London, 1782), 1:32.

[37]See Chapter III, p. 76, above.

the History of Corruption in 1782 until beyond the end of the decade engaged in vitriolic accusations of conscious deceit in the use of evidence, quotation out of context, bad logic, and other breaches of good method. During the controversy Priestley did publish An History of Early Opinions Concerning Jesus Christ with over 1,300 pages of more careful citations in four volumes,[38] in addition to the large number of replies that he published in answer to the specific arguments of his opponents. Priestley's larger work did not stop the heated charges of slipshod scholarship on both sides of the debate, and the History of Corruptions remained his most widely known and influential anti-Trinitarian work.

From early in the controversy Priestley freely admitted that "a great majority of learned men" were against him,[39] but, as with the many minority opinions he held in his lifetime, throughout the controversy he expressed optimism that his views, since they were correct, would prevail. The size of the controversy forbids a detailed treatment of the arguments here, but an overview shows a

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[38]Joseph Priestley, An History of Early Opinions Concerning Jesus Christ, Compiled from Original Writers; Proving that the Christian Church was at First Unitarian (Birmingham: Printed for the Author by Pearson and Rollason, 1786).

[39]Joseph Priestley, Remarks on the Monthly Review of the Letters to Dr. Horsley; in Which the Rev. Mr. Samuel Badcock, the Writer of the Review, is Called Upon to Defend What He Has Advanced in It (Birmingham: Printed by Pearson and Rollason, for J. Johnson, 1784), p. 27.

clear case of both sides straining to deploy arguments to prove what they already believed. An example will suffice to illustrate the nature of the debate.[40]

In the History of Corruptions, as one of his many textual arguments, Priestley cited a passage from Justin Martyr to demonstrate his central position that Christ was not considered divine before the time of that church father. Priestley inferred from the passage that Justin Martyr acknowledged that the majority of Christians did not then believe in the divinity of Christ.[41] Samuel Badcock[42] quickly objected that the passage in its original form actually meant the exact reverse of Priestley's construction.[43] Badcock's review in the Monthly Review was followed by similar objections from Samuel Horsley, the Anglican who would gain a bishopric from his efforts as the most widely read of Priestley's opponents. Priestley found grievous errors in Badcock's reading of Justin as well, and said Badcock was "as ignorant of Ecclesiastical History, as he appears to be of Greek."[44]

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[40]The author plans a separate study of the Priestleyan Trinitarian controversy.

[41]Priestley, History of Corruption, 1:16-18.

[42]A dissenting cleric who formerly was a disciple of Priestley but who eventually took Anglican orders; see Priestley's summary of the relationship reprinted in Rutt, ed., Works of Priestley, 19:533-38.

[43][Samuel Badcock], review of History of Corruptions, Monthly Review; or Literary Journal 68 (June 1783) : 521-23.

[44]Priestley, Remarks on the Monthly Review, p. 15.

Subsequent Biblical scholarship has proved Priestley to have been correct in some of his assertions, and in error on others. For example, during the progress of the Trinitarian controversy Priestley came to express his doubts about the authenticity of the opening sections of the gospels of Matthew and Luke. The stories, including the miraculous conception, which appear there, were of course a great difficulty for advocates of the simple humanity of Christ. Priestley published anonymous observations indicating grave doubts as to the truth of that dogma in the Theological Repository in 1786.[45] Later the same year he reprinted the remarks in his An History of Early Opinions Concerning Jesus Christ.[46] While modern scholarship has reached the same conclusion as Priestley on these interpolated passages, such has not been the case on the question of the authorship of the various books of the Bible, to take an opposite example. Despite the many orthodoxies excised from Priestley's creed, he retained belief in the traditional authorship of the various books from Moses on through the New Testament writers. Since Priestley based much of his defense of revelation on the Scriptures being eyewitness historical accounts, it is

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[45]Ebionita [Joseph Priestley], "Observations on the Roman Census, mentioned Luke ii, I, unfavorable to the Miraculous Conception," The Theological Repository; Consisting of Original Essays, Hints, Queries, Etc. Calculated to Promote Religious Knowledge 5 (1786) : 91-99. See footnote 19 above about this periodical.

[46]Book 3, chap. 20.

not surprising that he continued to believe that the writers really were these eyewitnesses.[47]

Priestley's flood of theological publications continued unabated from the early 1770's until his death in 1804. While there continued to be a considerable variety in them, from 1794 on many of them were devoted to the other prong of his two-sided defense of revealed religion. More of them concentrated on the actual arguments attempting to prove the validity of the Judeo-Christian revelations than on the pruning away of irrational dogmas in order to make that defense possible. Shortly before leaving England, and then after arriving in the United States, Priestley published three sets of Discourses on the Evidence of Revealed Religion,[48] and then followed them with a series of works more specifically using comparative religion to show the

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[47]A good treatment of this point can be found in Chapin, "The Theology of Joseph Priestley," pp. 116-23. Other secondary works that offer details on some aspects of Priestley's theology are Ira V. Brown, "The Religion of Joseph Priestley," Pennsylvania History 24 (April 1957) : 84-100, and the present author's "The Religious Views of Joseph Priestley, 1755-1804" (Masters thesis, The Pennsylvania State University, 1968).

[48]Joseph Priestley, Discourses on the Evidence of Revealed Religion (London: J. Johnson, 1794); Joseph Priestley, Discourses Relating to the Evidences of Revealed Religion, Delivered in the Church of the Universalists, at Philadelphia, 1796, and Published at the Request of Many of the Hearers (Philadelphia: Printed by John Thompson, 1796); and Joseph Priestley, Discourses Relating to the Evidences of Revealed Religion Delivered in Philadelphia, vol. 2 (Philadelphia: Printed by Thomas Dobson, 1797). These are the first editions. Slight changes in title and at least two editions of each of these leads to confusion, but they are three separate series of lectures.

superiority, and thus the truth, of his cropped version of the Judeo-Christian faith. These works, along with all Priestley's publications, are listed in the chronology of his life contained in Appendix B. Priestley himself long before he laid down his pen admitted some difficulty in saying anything new, "as I have published so much on that subject. . ."[49]

Much of this writing on comparative religion was devoted to demonstrating that Christian moral doctrine was very remarkably better than that of non-Christians. For example, Priestley believed,

> [Socrates] did not express a sufficient indignation (such as those who are acquainted with the purer and more severe precepts of revealed religion relating to them) at some particular vices, especially sodomy, which the laws of God by Moses justly punished by death.[50]

Using evidence like this, Priestley argued that careful historical research showed that all pagan faiths had grossly inferior moral tenets. Judeo-Christian morality was so inherently better that the only reasonable conclusion was that it had to be part of a true divine intervention. Although Priestley paid some lip service to the problems raised by the question of the relativity of morality in a determined world, he nonetheless continued to endlessly argue that Christian moral doctrine was so absolutely superior that therefore divine revelation must have actually occurred.

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[49]Priestley, Northumberland, Nov. 9, 1795, to Rev. Theophilus Lindsey, "Priestley--Lindsey Letters."

[50]Priestley, Socrates and Jesus Compared, p. 17.

Priestley's use of this argument in his defense of revealed religion should not leave the impression that he was an advocate of a rigid Wesleyan type of morality. A concern for morality was a widespread element in the western culture of the Enlightenment. Priestley's version was more moderate than that of his older contemporary John Wesley. While Priestley insisted on absolute truthfulness in any circumstance,[51] and wrote a pamphlet presenting arguments why men must wait until married to have sexual relations,[52] he thought the Mohammedans were "very absurd" in absolutely prohibiting alcoholic drinks,[53] and even enjoyed off-color jokes as well as alcoholic beverages.[54] Moderation was the keynote of many of his views on morals. Although he felt there could be too much attention spent on the arts, a moderate enjoyment of them was recommended. Indeed, he felt a person with only mediocre taste in the arts was fortunate since he could best enjoy the vast mediocre bulk of "the pleasures of the imagination."[55] Priestley's system of

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[51] Priestley, Institutes, 1:122-23.

[52] [Joseph Priestley], Considerations for the Use of Young Men, and the Parents of Young Men (London: Printed for J. Johnson, 1791).

[53] Priestley, Institutes, 2:242.

[54] See his enjoyment of Franklin's joke about the need for science to deal with gaseous disturbances of the bowels and the resultant odors, Carl Van Doren, Benjamin Franklin (New York: The Viking Press, 1965), pp. 151-52.

[55] Priestley, Institutes, I:97.

morality was not the austere ethics of a Wesley or a Fox. Despite this, however, it was not any less essential to the structure of his thought.

Indeed, it was surely appropriate that much of Priestley's theological writing at the end of his life used considerations of morality to defend a greatly purged version of revealed religion. Morality had been the very reason he had devoted such a great portion of his life to the cause of theology. For some contemporaries like Gibbon Priestley's religious faith and his incredibly profuse corpus of theological publication were simply beyond comprehension. "The miraculous conception is one of the last articles which Dr. Priestley has curtailed from his scanty creed,"[56] wrote Gibbon in a bemused note to The History of the Decline and Fall of the Roman Empire. While such a "scanty creed" made no sense to many of those around him, for Priestley it had great advantage. Once Christianity had been disencumbered of such irrational corruptions as the atonement of Christ, the Trinity, the inspiration of the Scriptures, the existence of an immortal soul, original sin, arbitrary predestination, and the immaculate conception, the resultant defensible core could serve the essential moral purpose of religion. Once the "manifestly absurd" corruptions which had made Christianity indefensible to rational men were

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[56]Edward Gibbon, The History of the Decline and Fall of the Roman Empire, J. B. Bury, ed., 7 vols. (London: Methuen & Co., 1908-1914), vol. 5, p. 105, n. 4.

removed, the "great principles" of religion could provide the all-important motive for virtuous behavior.[57]

The function of religion, for Priestley, was essentially utilitarian. By offering the sure prospect of a life after death with reward for virtue and retribution for vice, Christianity supplied the motivation for moral living. It was the "great moral purpose"[58] of religion that was Priestley's concern. "This doctrine, therefore, viz. that of the resurrection of the human race to a future life of retribution," he wrote, "I consider as the great doctrine of revelation, to which everything else belonging to the system is introductory, or in some other respect subservient."[59] For Priestley, "the great object of our Lord's mission was to teach the doctrine of a resurrection to a future immortal life,"[60] and his own object was to rationally defend the historicity of that morality-oriented mission. The principles of Christianity, he asserted, were "properly practical ones."[61]

Giving primacy to the moral effect of religion was, of course, not peculiar to Priestley among English

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[57]Joseph Priestley, Letters to a Philosophical Unbeliever, Pt. II (Birmingham: Printed by Pearson and Rollason for J. Johnson, London, 1787), pp. iii-iv, 32-33.

[58]Priestley, Letters to a Philosophical Unbeliever, pt. 1, p. 176.

[59]Ibid., pt. 2, p. 35.

[60]Priestley, History of Corruptions, 1:173.

[61]Priestley, Letters to a Philosophical Unbeliever, pt. 2, p. viii.

Enlightenment figures. Indeed, both that and the reduction of dogma to rational essentials were common themes in many writers on theological subjects from John Locke to William Paley. Priestley's commitment to this emphasis, however, provides the key to understanding his vast theological efforts. In the mechanistic cause-and-effect universe that he saw about him, for Priestley the paramount doctrine of the resurrection served as "the great sanction of virtue."[62]

Priestley's views on the question of damnation serve well to sum up the centrality of morality in his theological thought. Early in his career Priestley in his Institutes had asserted that it was not reasonable that the proper punishment of finite vice should be an infinity of hell. Perhaps, he speculated, some persons are eventually annihilated.[63] By the latter part of his life, however, he felt it likely that the damned would be reformed by "the sufferings of a future state" and thus all could enjoy ultimate bliss.[64] Indeed, he confessed to his closest friend, in his worst trial of his last years it was a great comfort to believe that even his dreadfully erring son William would eventually be reformed, even if only after death, and brought

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[62]Priestley, Doctrines of Heathen Philosophy, pp. 25-26.

[63]Priestley, Institutes, 1:159-66.

[64]Joseph Priestley, Notes on All the Books of Scripture, For the Use of the Pulpit and Private Families, 4 vols. (Northumberland, Pa.: A. Kennedy, 1803-4), 4:431-32.

into heaven.[65] The universe was structured to bring man to virtue and happiness. Historically provable divine intervention had interrupted that structure to further the same purpose, so doubtless even hell's torments served to bring all men to morality and eternal joy. "If we consider the great object and end of all the parts of revelation," he had written, "we cannot but see that it was intended to promote the practice of moral virtue, in order to men's attaining to the greatest degrees of perfection and happiness."[66] Indeed, for Priestley, the importance of the "scanty creed" that was his major commitment in life, lay exactly in this "great object and end" not only of revealed doctrines, but of all things.

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[65]For the story of his son William, see Chapter VII below. Priestley, Northumberland, April 15, 1803, to Theophilus Lindsey, "Priestley--Lindsey Letters." The crucial reference to "a person whose relation to myself I cannot forget" is among the omitted sections in the printed versions of this letter. This expression of faith in a form of universalism, which Priestley also expressed on his deathbed (according to his son's account in the continuation of the Memoirs) was grossly misinterpreted after Priestley's death by some of his more orthodox opponents. They claimed that Priestley was saying that he knew that he himself was going to hell, but consoled himself that his suffering would not be eternal. A small debate followed as Priestley's partisans correctly interpreted his remarks. See Monthly Repository 1 (1806) : 132-36; 7 (1812) : 510-11 and 639-41; 8 (1813) : 227; and 9 (1814) : 20-21.

[66]Priestley, Institutes, 3:55.

CHAPTER V

AN OUTMODED PARADIGM AND A MECHANISTIC WORLD VIEW THE LIMITATIONS OF MATERIALISM IN THE SCIENCE OF JOSEPH PRIESTLEY

On a November day in 1802 just a little over a year before he died, Joseph Priestley sat with pen in hand in his backwoods home. As he sat, he was writing the last of a lengthy series of contributions on chemistry that he sent to the New York Medical Repository during his American years. For the final time Priestley reiterated arguments against the new theory of chemistry, introduced by Lavoisier, which was by then almost universally accepted. Priestley's own momentous discoveries of the 1770's in the area of the chemistry of gases had played an important role in the development of this new theory, but he himself obstinately clung to the outmoded phlogiston system that had preceded the great French revolution in chemical theory. As he concluded, Priestley paused to reflect. For some years most chemists had simply ignored his endless defense of the old phlogiston theory. Recently, however, an opponent had bothered to combat his views, and Priestley's perennial optimism welled up. "It is now near twenty years since this new theory was advanced," he wrote,

> and from that time to the present I have not ceased to express my opinion of its fallacy, and to give my reasons for that opinion, but I have not till very lately been able to draw much attention to the subject. Now, however, that I have succeeded in this, I flatter myself that the controversy will come to a speedy termination.[1]

Priestley's optimism was not warranted. The phlogiston controversy did indeed come to "a speedy termination," but only because with Priestley's death the last traces of its defense quickly expired. It had become a sorry spectacle: Joseph Priestley, once one of the most prominent, important, and productive men in the international scientific community, reduced to a nearly solitary defense of an antiquated theory from a wilderness home. How this came to be is one of the more interesting questions of Priestley's varied career.

Joseph Priestley in modern times has been most widely known as a scientist; his chemical work in particular has received the most extensive scholarly attention of any of his multitudinous intellectual activities. Though only a small portion of the bulk of his writings, Priestley's accounts of his experiments have been studied in considerable detail. While such minutiae as whether an impure reagent or putrid water in his pneumatic trough was the cause of error in a particular experiment, or whether the famous oxygen experiment of August 1, 1774, was performed in London

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[1]Joseph Priestley, Northumberland, Nov. 15, 1802, to the Editor, New York Medical Repository 7 (1803) : 271-73.

or at Calne[2] need not concern us here, the general outline of Priestley's scientific work and thought is of considerable interest. For not only was the same mechanistic perspective that underlay the rest of his thought clearly evident in his scientific efforts, that mechanistic world view also helps to account for Priestley's inability to accept the chemical revolution to which he had made such an important contribution. As we trace his scientific career to its unfortunate end, the limitations of the Priestley brand of materialism become apparent.[3]

Joseph Priestley appeared at center-stage of the Western European scientific theater with almost no advance publicity at the age of thirty-four. This occurred with the publication of the first edition of his The History and Present State of Electricity with Original Experiments in 1767. He maintained a leading role for about the next fifteen years, then took an increasingly minor part for the rest of his life.

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[2]For more discussion of the so-called "discovery" of oxygen see below, p. 134. For debate over the place: Douglas McKie, "Joseph Priestley (1733-1804), Chemist," Science Progress 28 (1933) : 24 and letters to the editor by R. M. Caven and P. J. Hartog under the title "Date and Place of Priestley's Discovery of Oxygen," Nature 132 (1933) : 25-26. Of these P. J. Hartog is a worthwhile treatment.

[3]Although there are differences on some points, in the main the interpretation of Priestley's science in this chapter follows that of the most important living student of Priestley's scientific career, Robert E. Schofield. F. W. Gibbs popular treatment in Joseph Priestley in the British Men of Science series, despite its virtues, is sometimes uncritical and/or erroneous and is without interpretive depth.

Priestley, of course, was not unacquainted with science before he emerged into the spotlight with the History of Electricity. As has been noted in Chapter II, before Priestley went to Daventry Academy he had studied both mathematics and Gravesande's textbook of Newtonian physics. Although little evidence is extant about the details of curriculum at Daventry at the time Priestley was there,[4] we do know that earlier under Doddridge the predecessor academy at Northampton had included both mathematics to the level of trigonometry and conic sections and the study of Newtonian physics as well as the performance of some experiments. Evidently this practice continued at Daventry. The fragments that survive of Priestley's diary attest that in the summer of 1754 he began to read A Treatise of Algebra by the eminent mathematician Colin Maclaurin after having read another work on the subject.[5] That summer he also read something on electricity.[6] In the fall and winter that followed the future scientist studied both Newton's Optics itself and expositions of Newtonian science and calculus written by others.[7] In 1755 Priestley also read some Euclid and a large

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[4]See footnote 22 of Chapter II above.

[5]"Sanderson's Algebra," which he began to read on June 29, but which this author has been unable to further identify. For discussion of the diary, see footnotes 1 and 2 of Chapter II above.

[6]Entered only as "Electricity" in the July 16 entry.

[7]Priestley began the Optics Oct. 3, 1754, and worked on it steadily. He also read Humphrey Ditton's An Institution of Fluxions Containing the First Principles, Operations, and Applications, of that Admirable Method as Invented by Sir

part of Herman Boerhaave's chemistry text as well as some more "popular" works. By the time he left Daventry Academy, young Priestley had what was a noteworthy scientific education for the time.[8]

Despite this training, Priestley did not do any scientific work of any consequence until he began to prepare the History of Electricity. For a full decade (1755-1765) Priestley maintained an interest in science, but did not advance beyond repeating standard experiments for educational purposes. Towards the end of his unsuccessful first pastorate at Needham Market,[9] Priestley gave "about twelve lectures on the use of the Globes, at half a guinea" to a class of about ten adults and planned to go on to give scientific courses in order to supplement his income and accumulate some apparatus. However, the opportunity to move to Nantwich intervened in 1758.[10] As has been noted in Chapter III, in conjunction

Isaac Newton (1706; 2d ed., 1726) and read in John Rowning's popular A Compendius System of Natural Philosophy, of which he read further sections in 1755. Ditton and Rowning are in the DNB.

[8]It is not known whether he read the Elementa Chemiae in the original, or in English translation. The best account of Priestley's scientific education and reading is Robert E. Schofield, "The Scientific Background of Joseph Priestley," Annals of Science 13 (1957) : 148-63, but Schofield did not know of the existence of the 1754 diary. Schofield's thesis (i.e., the explanation for the fate of Priestley's scientific career is not provided by ignorance and lack of scientific education) is considerably strengthened by the evidence from the 1754 diary included in this paragraph.

[9]See Chapter III, pp. 76-77, above.

[10]Priestley, Memoirs, 1:37-38.

with his school at Nantwich Priestley bought a small air pump, an electrical machine, and other instruments and together with his students organized lecture-demonstrations in science for their parents and friends. When Priestley became tutor at Warrington Academy in 1761, he would have liked to have continued his educational work in the field of science in a bigger way; Priestley told the school's authorities when they invited him to join the faculty that he would "have preferred the office of teaching mathematics and natural philosophy."[11] The Academy already had a science tutor, however, and the closest the future chemist came to scientific education at Warrington was teaching anatomy once and assisting a bit while attending a short course in chemistry that was offered at Warrington by a visiting physician in 1762.[12] Thus far in his career there was nothing to indicate that this young dissenting minister and educator was to become a leading scientist.

Young Priestley's forte at this time, and the source of his reputation, lay in the organization and compilation of knowledge for educational purposes. Intensely committed

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[11] Ibid., pp. 45-46.

[12] The course was given by the atheist Matthew Turner who later (under the pseudonym William Hammon) wrote an answer to Priestley's Letters to a Philosophical Unbeliever. Priestley's only reference to the 1762 course is in his pamphlet of 1775 Philosophical Empiricism. All of the evidence on Priestley's participation is discussed in Schofield, ed., Scientific Autobiography, pp. 8-10, although Schofield probably inflates both Priestley's role and his chemical interest and abilities at this period.

to the belief that further advances in knowledge would be facilitated by the easy accessibility and extensive spread of what was already known, Priestley by 1765 had published his Chart of Biography and was giving his students a guide to the best sources and literature for the study of history.[13] Priestley's talent at summarizing the state of knowledge in a particular discipline was considerable. Late in 1765 he applied this talent to a new field when he began to compile The History and Present State of Electricity.

"An intimate knowledge of what has been done before us," Priestley wrote, "cannot but greatly increase our future progress, if it be not absolutely necessary to it."[14] Recognizing that what was known about electricity was scattered in books and transactions of scientific societies of many nations, dates, and languages, and that it was therefore exceedingly difficult for an individual who wished to pursue that branch of science to begin on the foundation of previous knowledge,[15] Priestley set about rectifying the situation. Late in 1765 Priestley began to collect

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[13] See Chapter III.

[14] Joseph Priestley, "The Preface to the First Edition," p. vii in Robert E. Schofield, ed., The History and Present State of Electricity with Original Experiments, 2 vols. (New York and London: Johnson Reprint Corporation, 1966; a facsimile of the 3d edition, London: C. Bathurst, T. Lowndes, J. Rivington, J. Johnson [and five others], 1775). The prefaces of the first and second editions were carried along with another added preface in the third edition.

[15] Ibid.

multivolume sets of transactions and other publications, to compile abstracts of various historic electrical experiments from them, and on some of the more interesting or disputed points to attempt to replicate those experiments.

Never a modest or retiring man, Priestley thought his project was of the greatest importance and proceeded to push himself into the company of the leading electrical researchers of the English-speaking world. He obtained a letter of introduction to John Canton which contained a postscript mentioning his desire to also meet Benjamin Franklin and set out for London in December 1765. There he got the assistance for his project of the three most noted "electricians" then in Britain--Canton, Franklin, and William Watson--and was also aided by the actuarial expert and liberal dissenting minister Richard Price. Price took Priestley as his guest to the Royal Society on January 9. Throughout 1766 these men helped Priestley to obtain scarce publications and criticized drafts of various sections of Priestley's manuscript. Early in 1767 Priestley's History was published, and almost immediately he gained international prominence as a scientist.[16]

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[16]The circumstances of the visit to London and the beginning and preparation of The History and Present State of Electricity may be followed in the letters and commentary of Chapter Two of Schofield, ed., Scientific Autobiography. The critical point that Priestley had already started the History, and that it was not begun only on Franklin's suggestion (as is related in a number of accounts) is also made in detail in W. Cameron Walker, "Beginnings of Joseph Priestley's Scientific Career," Isis 21 (1934) : 81-97. Walker's article, which is not included in Schofield's

Priestley's new fame was richly deserved. The History and Present State of Electricity contained clearly written, accurate summaries of nearly all the important experiments in the course of the advance of electrical knowledge. By the time he had made a number of additions from German works in the second edition (1769),[17] his scholarship was so complete that even modern historians have been unable to uncover significant omissions.[18] Priestley's contribution, however, was not limited to his thoroughly annotated scholarship. Priestley began the work, "without having the least idea of doing any thing more than writing a distinct and methodical account of all that has been done by others."[19] Nonetheless, this educational purpose was soon joined by original scientific research. From his initial efforts at electrical experimentation for the purpose of clearing up some points in the historical experiments he was describing, Priestley went on to perform original

bibliography, is, however, marred by his serious error in placing Priestley in London on February 3, 1766, for Franklin's examination on the Stamp Act. Priestley's letter of November 10, 1802, to the editor, Monthly Magazine 15 (1803) : 1-2, which Walker cites, actually contains Priestley's account of Wedderburn's famous abuse of Franklin before the Privy Council January 29, 1774. Priestley was present for that event, but was not for the 1766 occurrence, which Walker erroneously thought was described in Priestley's 1802 letter.

[17] Priestley, "Preface to the Second Edition," Schofield, ed., History and Present State. See also the preface to the third edition, which announced that few further additions were made.

[18] Schofield, Introduction, pp. xxii-xxvii, History and Present State.

[19] Priestley, Memoirs, 1:50-51.

experiments of his own.[20] By the time he published his History, Priestley had thirteen sections of his own investigations to include in the volume. Before he discontinued his work on electricity in 1770, Priestley contributed five papers of further experiments to the Philosophical Transactions of the Royal Society.[21]

Priestley's electrical work revealed that he was adept both in designing experiments and in making careful and accurate observations of their results. Even though his efforts in electricity lasted only from late 1765 through 1770, Priestley's discoveries were of more than incidental importance. Early in this period Priestley was the first person to find that carbon was a conductor of electricity. He then went on to do other important work on conductivity. Despite the distinctly non-quantitative style that marked much of his experimental work, Priestley's considerable skill and acumen led him to recognize that substances could be ranked on a continuum from non-conductors on through varying degrees of conductivity to the best conductor. His own such ranking of metals was not surpassed

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[20] In the preface to the first edition of the History Priestley stressed the role of his London mentors: "It was from conversing with them that I was first led to entertain the thought of attempting any thing new in this way, and it was their example, and favourable attention to my experiments, that animated me in the pursuit of them" (p. x). See also 2:173.

[21] Three of which were added to later editions of the History; the other two appeared in his volumes of chemical experiments. The five first appeared in Philosophical Transactions 58:68-74; 59:57-62, 63-70; and 60:192-210, 211-27.

for over half a century. Priestley also performed experiments that caused him to discern that the resistance of wires was proportional both to length and the square of diameter.

In addition to his work on conductivity, Priestley investigated a wide variety of other electrical phenomena. Probably the most significant was his deduction that the force of attraction of electricity varies inversely with the square of the distance. Repeating an earlier experiment done by Franklin involving the suspension of pith balls inside an electrified metal vessel, Priestley inferred this law of attractive force between electric charges. Even though this inference (which was suggested by the analogy to Newton's laws of gravity) was neither proved nor quantified in Priestley's own work and had been investigated a few years earlier on the continent, it was nonetheless a significant accomplishment and a measure of Priestley's noteworthy abilities. Indeed, Franklin rated those abilities and discoveries so highly that late in 1767 he tried unsuccessfully to have Priestley awarded the Royal Society's Copley Medal on the merits of only the earlier part of Priestley's electrical experiments.[22]

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[22]Robert E. Schofield, "Electrical Researches of Joseph Priestley," Archives Internationales d' Histoire des Sciences, No. 64 (1963), pp. 277-86; Duane Roller and Duane H. D. Roller, The Development of the Concept of Electrical Charge, Harvard Case Histories in Experimental Science, case 8 (Cambridge: Harvard University Press, 1954), pp. 68-72; Schofield, ed., Scientific Autobiography, chapters two and three; and Myron Robinson, "A History of the Electric Wind," American Journal of Physics 30 (1962) : 366-72.

As would also be the case in his later and more famous chemical experiments, Priestley to a considerable degree eschewed wider theories in providing clear, matter-of-fact accounts of both historical experiments and his own electrical researches. Taking a Baconian stance, he announced:

> It may be said, that I ought, at least, to have waited till I had seen the connection of my new experiments with those that were made before, and have shown that they were agreeable to some general theory of electricity. But when the facts are before the public, others are as capable of showing that connection, and of deducing from them as myself. If but the most inconsiderable part, of the temple of science be well laid out, or a single stone proper for, and belonging to it be collected; though at present it be ever so much detached from the rest of the building, its connection and relative importance will appear in due time, when the intermediate parts shall be completed. Every fact has a real, though unseen connection with every other fact: and when all the facts belonging to any branch of science are collected, the system will form itself. In the mean time, our guessing at the system may be some guide to us in the discovery of the facts; but, at present, let us pay no attention to the system in any other view; and let us mutually communicate every new fact we discover, without troubling ourselves about the system to which it may be reduced.[23]

Having adopted this posture, Priestley proceeded to report his experiments just as they had occurred. Believing that an account that included full disclosure of errors, mistaken assumptions, and the role of chance occurrences would encourage others to try their hands at science, he provided exactly that in announcing his own work. Only through such honesty, Priestley felt, could the misleading impression that great brilliance and extraordinary abilities

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[23]Priestley, History and Present State, 2:172-73.

were needed for scientific discovery be avoided. Priestley hoped that by using such an "artless manner" to report his own work, and by providing his compendium of the "present state" of knowledge he would assist in spurring a proliferation of experimentation and new discoveries.[24]

Even though such a reportorial style marked Priestley's scientific writing, he did not, of course, do his remarkable research in a theoretical vacuum. Neither his electrical work nor his later experiments with gases consisted of random fact-gathering uninformed by basic underlying theoretical frameworks. Indeed, The History and Present State of Electricity with Original Experiments, despite its Baconian commitment to the facts themselves, occupies a significant place in the history of electrical theory. Prior to the work of Franklin, research on electricity had gone on without any generally accepted theory of what electricity was. Experiments were done with a background of a great variety of competing and quite different concepts of what was happening. Only with the electrical work of Franklin did the view that electricity was a single fluid, which went from positive to negative, gain wide acceptance and provide a focus for further experimental advances.[25] Adopting the theory of his London advisors as "the most probable of any that have been

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[24]Ibid., pp. 165-70.

[25]Thomas S. Kuhn, The Structure of Scientific Revolutions 2d ed. (Chicago: University of Chicago Press, 1970), pp. 13-15, 17-18.

hitherto proposed to the world,"[26] Priestley through his popular History added to the triumph of the single-fluid hypothesis. Although his History did not emphasize theory, Franklin's thesis underlay much of the explanation in Priestley's factual and narrative accounts of experiments and also received by far the most favorable treatment in what little discussion of theory there was in the work.[27]

Priestley's emergence as an investigative scientist with his electrical experimentation did not cause him to abandon the educational thrust that had led him to original work in the first place. In 1768 he published a simplified and concise A Familiar Introduction to the Study of Electricity. By the time it reached a fourth edition in 1786, this textbook stood as ample evidence of Priestley's continuing impact on scientific education. Furthermore, Priestley's efforts in producing this guide for the beginner in electrical studies and his earlier History made him see the need for yet another compendium, this time one "wholly within the sphere of mathematical science."[28] Priestley as

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[26]Priestley, History and Present State, 2:26.

[27]Priestley did, however, "not withstanding the preference I have given to Dr. Franklin's theory, endeavour to represent . . . [with] as much advantage as possible" the two fluid theory of Robert Symmer, which continued to have adherents in competition with Franklin's theory for some time to come. Symmer's theory was a variant from Franklin's that had few practical consequences. Priestley, History and Present State, 2:41; Kuhn, Structure of Scientific Revolutions, p. 18, note 9.

[28]Joseph Priestley, A Familiar Introduction to the Theory and Practice of Perspective (London: Printed for J. Johnson, and J. Payne, 1770), pp. iv-v.

a matter of necessity had drawn his own illustrations for his electrical works. That experience brought home the need for an introduction to the use of perspective in making drawings. Priestley therefore produced such a guide to assist both scientists who needed to illustrate apparatus and travelers who wished to accurately preserve the images of the objects and views they encountered.[29]

A Familiar Introduction to the Theory and Practice of Perspective, which Priestley published in 1770, demonstrates both the weaknesses and the strengths of its author. Once again Priestley's Hartleyan credo is immediately obvious; pointing out the advantages of drawings over words in communicating many things, Priestley argues that this is the case because of the way the mind functions. Although in this particular instance Hartley is not explicitly mentioned, Priestley once more has the mechanical psychological doctrines of vibration and association in mind in accounting for the virtues of lineal rather than verbal description.[30] Again Priestley produces an excellent summary of the current knowledge in a particular field, this time carefully and extravagantly crediting the work on perspective of the eminent mathematician Brook Taylor.[31] Priestley's Perspective

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[29]Ibid., pp. vii-viii.

[30]Ibid., pp. iii-iv; see his identical argument for the virtues of his biographical and historical charts as discussed in Chapter III.

[31]Taylor (1685-1731), who was indeed as important in this field as Priestley makes him out to be, is in the DNB.

was to remain a popular guide used by drawing masters into the nineteenth century.

Although Priestley's abilities are evident in the success of the Perspective, so are some of its author's liabilities. Neither a profoundly brilliant nor a strikingly original thinker, Priestley never had much success in the more abstruse areas of mathematics and theory. Before publishing this compendium in 1770, he must have himself at least partially recognized these limitations. In his Preface Priestley emphasized the virtues of minimizing theory in such a practical guide. More strikingly, he announced that he had not himself written those portions of the work in which such matters could not be avoided. Instead, those parts of the book concentrating on theory and on geometric proofs had been written by an engineer from Halifax who also bore the name Joseph Priestley. This other Joseph Priestley as well assisted by "revising and correcting the whole work."[32] Priestley's Perspective probably would not have been an acceptable work without such aid.[33]

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[32]Priestley, Introduction to Perspective, pp. xii-xiii; quotation at p. xiii. This Joseph Priestley (1743-1817) and his son of the same name, who was the author of Historical Account of the Navigable Rivers, Canals, and Waterways of Great Britain, are briefly discussed in footnote 15 in Chapter II and in the source there cited.

[33]Although Priestley's mathematical limitations have long been recognized, it is surprising that previous scholars have not noticed this matter and have instead tended only to note that A Familiar Introduction to the Theory and Practice of Perspective contained perhaps the first published advocacy of the use of rubber erasers: Schofield, ed. Scientific Autobiography, pp. 119-20 and Thorpe, Priestley, p. 72. Gibbs,

Priestley's continuing efforts in the field of scientific education were not limited to these outgrowths of his History and Present State of Electricity. In that work Priestley had expressed great hopes for increased scientific advance if such histories could be compiled for all the branches of science. He had also urged the formation of individual scientific societies devoted to each of these particular subjects.[34] Encouraged by the great success of his compilation on electricity, Priestley was presumptuous enough to project writing histories of all the other areas of experimental science. In 1772 he published The History and Present State of Discoveries relating to Vision, Light, and Colours. Priestley's History of Optics (as the work is usually called), however, did not have the same success as his classic History of Electricity. Indeed, the History of Optics was a serious failure; its one and only edition marked the end of Priestley's ambitious project.[35]

Priestley's weakness in mathematics was but one of the causes that made his History of Optics a less than satisfactory work. Although Priestley announced a policy of

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Priestley, p. 37 has only one sentence that says practically nothing about the work. There was a second edition of the Perspective in 1780.

[34]Priestley, "Preface to the First Edition," pp. xvii-xix.

[35]The work did appear in a German translation (Leipzig: J. F. Junius, 1776) as did the Electricity (Berlin and Stralsund: G. A. Lange, 1772). The Electricity, however, also appeared in French (Paris: Hérissant, 1771), which the Optics did not. Crook, Bibliography of Priestley, omits this French edition.

concentrating on experimental discoveries and avoiding "treating of those that are properly mathematical, as much as I possibly can,"[36] the subject was of course one that necessarily involved a great deal of abstruse mathematics and theory. Furthermore, the huge work of over eight hundred folio pages and twenty-three elaborate plates seems to have been too hastily prepared. Priestley began the compilation about the first of November 1770 and already had six hundred pages through the hands of his printer before a year had expired. The list of errata in the front of the volume, the seven pages of additions at the rear (which also include corrections), and the fact that one of the figures is entirely missing on the plates[37] are but some of the indications that more care should have been exercised on the volume. Priestley became greatly dismayed as he received very large quantities of objections and corrections from his London advisors John Canton and Richard Price, to whom he sent bundles of pages as they were printed. Clearly discouraged, Priestley nonetheless decided that the book "must take its chances with many imperfections about it . . ."[38]

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[36]Joseph Priestley, The History and Present State of Discoveries relating to Vision, Light, and Colours (London: J. Johnson, 1772), p. 230. Hereafter cited as History of Optics.

[37]Figure 166 which goes with the discussion on page 737 should have appeared on plate XXIII but does not.

[38]Joseph Priestley, Leeds, Nov. 23, 1771, to Richard Price, Schofield, ed., Scientific Autobiography, p. 93. See also the other correspondence discussing the History of Optics printed in Chapter Three and Schofield's commentary on pp. 120-23.

and published the work early in 1772 without doing anything about most of their criticisms.

The state of Priestley's text on a subject that was probably beyond his abilities was not, however, the only reason for Canton's and Price's strong objections. In addition, The History and Present State of Discoveries relating to Vision, Light, and Colours introduced a relatively unknown new conception of the nature of matter. Although (in keeping with his Baconian stance of stressing facts rather than theory) Priestley did not devote much space to the issue in either this volume or his later scientific writings, he had adopted the "ingenious hypothesis" of Roger Joseph Boscovich and John Michell. With Priestley's History of Optics, it became clear that he now espoused a "scheme of the immateriality of matter, as it may be called."[39]

Boscovich, a Serb by birth, was a cosmopolitan Jesuit mathematician, astronomer, and theoretician. His major work, Theoria Philosphiae Naturalis, which was published in 1758, contained elaborate geometrical proofs and discussion of Newtonian laws all designed to demonstrate the thesis that matter is composed of indivisible points whose most important properties are the powers of attraction and repulsion. This atomic theory, which argued that matter was not the solid impenetrable substance that it was commonly assumed to be, was to have considerable influence on nineteenth-century

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[39]Priestley, History of Optics, pp. 390-94.

British scientists, but had not yet achieved much notice.[40] As Priestley labored on his compilation on optics, however, his only local advisor was a man who also advocated this theory of matter. John Michell, the rector of Thornhill in Yorkshire, was an Anglican cleric of independent wealth whose most important scientific work was on astronomy. A member of the Royal Society and a man of great ability, Michell had independently reached conclusions almost identical to those of Boscovich. It is not known whether Priestley had encountered these views earlier, or whether Michell introduced them to Priestley. In any case the History of Optics, with which Michell gave Priestley considerable assistance, contained the first notice that Priestley had adopted Boscovichian theory with its emphasis on matter as force rather than as materiality.[41]

Priestley discussed Boscovichian theory in the History of Optics only in considering some problems about the nature of light, and in his later scientific writing he continued to stick closely to factual accounts of experiments and to minimize theoretical matters. Nonetheless, it is clear that

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[40]Roger Joseph Boscovich, A Theory of Natural Philosophy (Cambridge, Mass. and London: The M.I.T. Press, 1966) and the short life of Boscovich by Branislav Petronievic contained in that volume; Lancelot L. Whyte, ed., Roger Joseph Boscovich, S. J., F. R. S., 1711-1787; Studies of his Life and Work on the 250th Anniversary of his Birth (London: Allen and Unwin, 1961). The English translation I have used is of the 1763 Venice edition, which was more accurate than the 1758 edition.

[41]Michell (1724-1793) is in the DNB; Michell's assistance is acknowledged in the Preface, p. vi and his adoption of the thesis is discussed pp. 392-93 of the History of Optics.

this theory, which he so highly praised in the History of Optics, remained an important feature in the background of his thought. While it remained an intellectual affirmation of considerably less significance than the Hartleyan credo that was at the core of his psyche, this subsidiary argument to the mechanistic psychology that Priestley adopted from Hartley was not insignificant. Certainly, Priestley's mechanistic materialism rose to a more sophisticated level with the addition of this theory.

Priestley's most extensive treatment of Boscovichian theory occurred in his metaphysical arguments denying the existence of the traditional version of the soul. That denial (discussed in Chapter II) brought vitriolic charges of atheism,[42] and Boscovich himself bitterly complained to Priestley's employer Lord Shelburne and then to Priestley about this use of his thesis.[43] While the earlier advocacy of Boscovich in the History of Optics did not cause as violent a reaction, it was an element in the objections that Priestley's London advisors had to that ill-fated volume.

Meanwhile, as Priestley's projected histories of the experimental sciences came to a halt, his own original scientific researches were moving ahead in a new field, the

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[42] Chapter II, pp. 38-44. See also the opening section of Chapter VI.

[43] Shelburne gave the letter of complaint to Priestley who responded in a letter dated Aug. 19, 1778. Boscovich answered on Oct. 17, 1778. The letters are printed in Schofield, ed., Scientific Autobiography, pp. 168-71.

chemistry of gases. Although some minor involvement in a partnership with his brother Timothy for the making and selling of electrical apparatus may have continued into the 1770's,[44] Priestley's electrical work effectively ended with the presentation of his last papers on that subject to the Royal Society in 1770. By the time The History and Present State of Discoveries relating to Vision, Light, and Colours was published early in 1772, Priestley was ready to announce in that volume itself that he had "been lately engaged in a course of experiments" on a new subject. Although he did not go on to write, as he then thought probable, "the history of discoveries relating to AIR," his new researches on gases were indeed "curious and important."[45] The series of histories had come to a bad end with the History of Optics, but by March 1772 Priestley was ready to present his first reports on the chemistry of gases to a series of meetings of the Royal Society in London.[46]

These early experiments, which included his discovery of both nitric oxide and hydrogen chloride, marked only the beginning of an incredibly productive chemical career for Joseph Priestley. In the 1770's and early 1780's Priestley was at the cutting edge of European scientific inquiry as,

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[44]Schofield, ed., Scientific Autobiography, pp. 124-25.

[45]Priestley, History of Optics, p. xi.

[46]Henry Guerlac, "Joseph Priestley's First Papers on Gases and their Reception in France," Journal of the History of Medicine and Allied Sciences 12 (1957) : 1.

with his famous burning lens and pneumatic trough and other apparatus, he isolated a series of hitherto unknown gases. Those were sunny days for scientific advance when Priestley could focus the sun's rays with one of his burning lenses, produce high temperatures, and observe the unknown. With this process and other careful experimental research Priestley was able to obtain not only the gases mentioned above but also those that are now known as ammonia, nitrous oxide, nitrogen peroxide, and sulphur dioxide. Although these other achievements have been overshadowed by the popular vision of his "discovery" of oxygen on August 1, 1774, they were not of small importance.

Furthermore, in addition to his isolation of a remarkable number of gases, Priestley's acute observation uncovered a variety of other important phenomena. To name but a few, Priestley showed that "nitrous air" (i.e. nitric oxide) could be used as a measure of the fitness of air for respiration, a discovery which in other hands led to the science of eudiometry and which spared many a mouse from Priestley's experiments. In addition, one of Priestley's earliest and most famous successes on gases was the development of a method for artificially carbonating water, an invention which made possible all those millions of gallons of carbonated beverages consumed by twentieth-century Americans. Furthermore, Priestley was the first person to begin to discover the role of vegetation in restoring "vitiated air" in the atmosphere (or, in modern terms,

producing oxygen from carbon dioxide) and did other important work on photosynthesis.[47]

Although both in Priestley's own day and in the centuries since a considerable amount of ink has been spilled debating who had priority in making several of the discoveries claimed by Priestley, neither then nor now was there any serious question of the very great importance of his chemical work. The Swedish scientist Karl Wilhelm Scheele surely did isolate oxygen before Priestley's famous experiment with his twelve inch burning lens and mercurius calcinatus per se (red oxide of mercury) on August 1, 1774, but he did not publish his results until after Priestley. For that matter, Priestley himself had obtained the gas without realizing it by 1771 and did not really recognize its importance until March 1, 1775. Such disputes about a few of Priestley's "discoveries" are really beside the point. In the latter part of the eighteenth century chemistry was the most rapidly advancing of the sciences, and Priestley was one of the most fruitful and important researchers. In addition to the

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[47] Secondary treatments of Priestley's chemical experiments are numerous, but the detailed scholarly accounts in the following are the best: James R. Partington, A History of Chemistry, vol. 3 (London: Macmillan and Co., 1962), pp. 237-83 (this has, however, several very bad errors in its brief biographical introduction and should be used only for the very extensive treatment of the experiments themselves and their relation to the work of other scientists) and Leonard K. Nash, Plants and the Atmosphere, Harvard Case Histories in Experimental Science, case 5 (Cambridge: Harvard University Press, 1959), pp. 36-55. It would be inane to footnote each of the factual matters here and in the next paragraph in detail as they can even be found in the best of the modern treatments for a popular audience.

Royal Society membership and large international scientific correspondence that began in his electrical period, his chemical work now brought the Royal Society's Copley Medal, one of eight foreign memberships in the Academy of Sciences at Paris, membership in a large variety of other European and American scientific societies, and a host of other honors.

Priestley announced the experiments that led to these honors in the same "artless manner" that he had used earlier. Between 1774 and 1786 he published six volumes of Experiments and Observations that gave full narrative and descriptive accounts of his researches, including even those things he had come to see as errors.[48] Only after his best work was over, did he produce the sort of systematized, abridged, and organized record of his results that was the more common form of scientific publication.[49] This absolute honesty in detailing his experimentation just as it had occurred did not always elicit the praise accorded it by some contemporaries and by most modern scholars. For example, Jan Ingen-Housz, a Dutch physician who quite correctly claimed priority over Priestley on some aspects of his work on photosynthesis,

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[48] Experiments and Observations on Different Kinds of Air (London: J. Johnson, 1774, 1775, 1777) and Experiments and Observations Relating to Various Branches of Natural Philosophy; with a Continuation of the Observations on Air (London: J. Johnson, 1779, 1781, 1786). Due to the similar titles of Priestley's volumes of chemical experiments, I have supplied the publication date in subsequent citations.

[49] Experiments and Observations on Different Kinds of Air and other Branches of Natural Philosophy 3 vols. (London: J. Johnson, 1790).

found the Experiments and Observations both tedious and inadequately indexed. Priestley, he thought, hastily rushed his experiments into print, "fearing probably that anybody [sic] would get ahead of him."[50] Although this motive was involved, and Priestley surely was most jealous of his discoveries,[51] nonetheless more laudable motives also played a part. The concern for education and the advancement of knowledge that was so central in Priestley's thought and which formed the matrix out of which his original scientific research began, was a central factor. Even when he finally did issue an organized and concise version of his experiments in 1790, he left the record of some of his errors in the account to encourage

> young adventurers, by showing them that, notwithstanding the many errors to which even the most sagacious and most cautious are incident, their labours may be crowned with considerable success.[52]

And again Priestley urged that "speedy publication"[53] which he believed assisted in the more rapid advancement of knowledge.

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[50] Jan Ingen-Housz, Vienna, Jan. 17, 1783, to Sir Joseph Banks, calendared in Warren R. Dawson, ed., The Banks Letters; a Calendar of the Manuscript Correspondence of Sir Joseph Banks Preserved in the British Museum, the British Museum (Natural History) and other Collections in Great Britain (London: British Museum, 1958), p. 440.

[51] For a less widely known example of this see his extensive discussion of later apparatus for making carbonated water in the first edition of volume 2 of Experiments and Observations (1775).

[52] Priestley, Experiments and Observations (1790), 1:xvi.

[53] Ibid., p. xvii.

In presenting these descriptive accounts of his chemical work, Priestley clung to the same Baconian stance reflected in his earlier electrical efforts. Again minimizing theory, he wrote,

> If we could content ourselves with the bare knowledge of new facts, and suspend our judgment with respect to their causes, till, by their analogy, we were led to the discovery of more facts, of a similar nature, we should be in a much surer way to the attainment of real knowledge.[54]

Despite the lack of theoretical discussion in the presentation of his results, Priestley's chemical work nonetheless was done within a framework of chemical theory. When that theory, which had for some time been the basic assumption behind most chemical research, came to be challenged and overthrown, Priestley became its most vocal defender.

The phlogiston theory of chemistry in its remote origins can be traced back to Aristotle's four elements of air, fire, earth, and water and four qualities of heat, cold, wetness and dryness. The more immediate background of the theory, however, rested on the work of Georg Stahl and others in the early eighteenth century. Although there were a number of minor variations among the different chemists who wrote on the theory, basically phlogiston was the principle or element of inflammability. Like the alchemists, phlogiston chemists believed metals to be more complex substances than their calxes (i.e. oxides). Metals, they believed, were

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[54] Priestley, Experiments and Observations relating to . . . Natural Philosophy, 1 (1779) : x.

formed by the addition of phlogiston to the metallic calx. Such a conception, of course, is almost exactly opposite from what we now believe to be the case. In modern terms, metals are simple substances and calxes or oxides are formed by the addition of oxygen to a metal, whereas the phlogistonists saw the process as one of the subtraction of phlogiston.

Phlogistonists: metal - phlogiston = calx (i.e. oxide)
Modern Theory: metal + oxygen = oxide

At the time Priestley began his important chemical experimentation in the early 1770's phlogiston theory was nearly universally accepted and was the basic assumption guiding chemical research. To adopt the term of a modern theorist on the structure of scientific thought (Thomas Kuhn), phlogiston theory was a paradigm, one of those "universally recognized scientific achievements that for a time provide model problems and solutions to a community of practitioners."[55]

Despite this general acceptance, there were some serious problems inherent in the phlogiston paradigm. Most notably, chemists knew well that in the process of converting a metal into its calx, a process which they explained as the loss of phlogiston, there was a gain in weight. Simply explained in modern terms by the added weight of the oxygen, this additional weight required torturous explanations by

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[55]Kuhn, Structure of Scientific Revolutions, p. viii. For Kuhn's own section on this paradigm revolution in chemistry, see pp. 69-72. J. R. Partington and Douglas McKie, "Historical Studies on the Phlogiston Theory," Annals of Science 2 (1937) : 361-404; 3 (1938) : 1-58; 4 (1938) : 337-71; and 5 (1939) : 113-49.

phlogistonists. Some chemists went so far as to assign a negative weight to phlogiston. Although a few earlier students of Priestley thought he had adopted this simplistic solution, in actuality he repeatedly rejected the thesis of the levity of phlogiston though he did not himself offer a satisfactory solution to this difficulty.[56]

Just at the time Priestley was making his momentous chemical discoveries in England Antoine Lavoisier and a group of other French chemists were evolving a new chemical theory which would rapidly displace the phlogiston paradigm. Concentrating on the weight question, which posed such a problem for phlogiston theory, and on the rapidly expanding knowledge of gases, to which Priestley was contributing so significantly, they began to develop what has become the modern oxygen theory of combustion. Priestley had demonstrated his oxygen experiment to Lavoisier during his visit to Europe in October 1774; already by 1789 with the publication of Lavoisier's Traité Elémentaire de Chimie the new thesis had reached both systematic form and wide acceptance.[57]

This French revolution in chemical theory swiftly made its conquest all but complete. Most of the phlogiston chemists of Priestley's generation either died off or rapidly

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[56]Loewenfield, "Contributions to the History of Science," p. 35, note 37; McKie, "Priestley, Chemist," pp. 28-29.

[57]James B. Conant, ed., The Overthrow of the Phlogiston Theory; The Chemical Revolution of 1775-1789, Harvard Case Histories in Experimental Science, case 2 (Cambridge: Harvard University Press, 1955; orig. pub. 1950).

became silent, and a very few announced their conversion to the new paradigm.[58] Priestley, however, did not. After the mid 1780's, as he was increasingly ignored, Priestley devoted more and more of his experiments to disproving the new thesis. Oxygen was to remain for him "dephlogisticated air," while his series of pamphlets and communications to journals attempted to uphold the outmoded paradigm. At the end he became nearly a solitary voice from the American wilderness unwilling to recognize the great revolution to which his work had contributed.[59]

Why was this so? Clearly Priestley's abilities lay more in the field of experiment than in theory. Even Priestley himself could admit, "I am a very bad theorist,"[60] and his very defense of the phlogiston theory was predominately cast in the form of experimental demonstrations rather than theoretical discussions. Even to the last those abilities were not small. One of the critical experiments for the new theory was the production of water from the explosion of

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[58]Robert E. Schofield, "Joseph Priestley, the Theory of Oxidation, and the Nature of Matter," Journal of the History of Ideas 25 (1964) : 286-87.

[59]The details can be followed in Charles William McClelland, "The Chemical Experiments and Theories of Joseph Priestley, 1794-1804" (Ph.D. dissertation, Stanford University, 1962); Tenny L. Davis-Cambridge, "The Last Stand of Phlogiston: Priestley's Defense of the Doctrine after his Removal to America," Studien zur Geschichte Chemie; Festgabe Edmund O. V. Lippman (Berlin: Julius Springer, 1927), pp. 132-47; and Robert Siegfried, "An Attempt in the United States to Resolve the Differences Between the Oxygen and Phlogiston Theories," Isis 46 (1955) : 327-36.

[60]Joseph Priestley, Calne, June 20, 1779, to Giovanni Fabroni, in Schofield, ed., Scientific Autobiography, pp. 171-74.

hydrogen and oxygen. With the impure reagents of the day, however, acid was also always produced. This acid, which Lavoisier's theory said should not be present, could not be ignored by Priestley, the careful experimenter. Such experimental difficulties with Lavoisier's theory, which others explained away,[61] and the real problems that remained in the yet unrefined oxidation thesis,[62] however, had not prevented its nearly universal acceptance. Although these matters together with such considerations as his mathematical weakness and non-quantitative turn of mind tell part of the story, they do not tell it all.

Despite Priestley's Baconian emphasis on facts rather than theory, he ended his life stalwartly combating what he saw as serious theoretical error. His endless defense of the phlogiston theory with evidence that convinced almost no one else must have had something more behind it than that evidence itself. For despite the strength of some of that evidence on its own merits, Priestley remained a sad sight in his almost solitary defense of the outmoded paradigm. Surely something in Priestley's ideological makeup must have played a role as well. And indeed something did. In addition to the other elements that contributed to his theoretical backwardness in

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[61]Schofield, "Priestley . . . Oxidation, and . . . Matter," pp. 289-90.

[62]In these years neither the oxidation thesis nor Priestley's phlogiston theory remained absolutely static. Both he and the advocates of Lavoisier's system made some small changes in their views.

chemistry, Priestley's own special mechanistic world view posed almost insuperable barriers to the new outlook.

As we have seen, Lavoisier's chemical revolution was heavily based on questions of weight in reactions. Priestley, on the other hand, almost always ignored weight in his experimentation. As a matter of fact, his Boscovichian theory of matter did not even consider weight as a fundamental property of matter. It was force, instead, that lay at the heart of creation. A special brand of mechanistic materialism stood at the center of Priestley's thought. His most central credo saw vibration and association as the mechanism of thought. His theory of matter saw force as the essence of reality. No wonder, then, that in his chemical work, weight, which was at the very center of the new outlook, played little part. As he described his great experimental discoveries, his narrative unconsciously revealed the way he saw the universe. Priestley's experiments did not even report the combinations, decompositions, and transformations of substance that are the essence of chemistry. Instead his researches "extract" and "release" substances from the bodies which "contain" them. Restrained within the mechanistic materialism of his world view, Priestley's chemistry demonstrates the limitations of his Hartleyan faith.[63]

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[63]Schofield, "Priestley . . . Oxidation, and . . . Matter," pp. 291-94; Schofield, ed., Scientific Autobiography, pp. 193-95; Robert E. Schofield, Mechanism and Materialism; British Natural Philosophy in an Age of Reason (Princeton: Princeton University Press, 1970).

Despite these real limitations, Priestley's considerable talents made him one of the more important scientific figures of the eighteenth century. As we have seen, from an intense concern for the diffusion and advancement of knowledge Priestley's classic History and Present State of Electricity emerged. His talent at compiling the significant information and recent advances of a particular discipline led to other compendiums in the scientific field. When original scientific research came out of Priestley's background of educational interests, his careful experimentation and thoughtful observation led to spectacular discoveries, first with electricity, and then in the chemistry of gases. Possessed of neither extraordinary brilliance nor great mathematical or theoretical abilities, he nonetheless made noteworthy use of his own particular strengths. If, as he isolated a whole series of hitherto unknown gases, Priestley remained locked within both the outmoded phlogiston paradigm and a mechanistic Weltanschauung, it was as part of an English mechanistic tradition going back to Newton. Priestley never fathomed the chemical revolution to which he contributed, yet within the limits of the world view of the Observations on Man and the Theoria Philosphiae Naturalis he produced creditable results.

CHAPTER VI

"GUNPOWDER PRIESTLEY" : THE SOCIAL AND POLITICAL VIEWS OF AN ADVOCATE OF INTELLECTUAL LIBERTY

> Sedition is their creed;
> Feigned sheep, but wolves indeed,
> How can we trust?
> Gunpowder Priestley would
> Deluge the throne with blood,
> And lay the great and good
> Low in the dust.
> Stanza of a popular parody to the tune of "God Save the King."[1]

The image of a dangerous, evil, and violently radical man was one widespread view of Joseph Priestley both in England and America in the 1790's. Priestley's actual political and social views, however, were based on a firm faith in the gradual progress of knowledge under freedom of thought, not on any commitment to revolutionary change or the innate worth of all men of all social classes. Cartoon

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[1] Printed in full in Thomas Wright, Caricature History of the Georges (London: Chatto and Windus, 1876), p. 448. Priestley reprinted two stanzas of this in Appeal on Riots, pt. 1, pp. xxx-xxxi. Another such parody has the stanza:

> Tom Paine and Priestley are
> More base and desp'rate far
> Than vile Jack Cade,
> He for reform did cry;
> They for equality
> Wou'd stain true liberty
> With British blood.

This parody was also to the tune of "God Save the King"; British Museum, Dept. of Prints and Drawings, Catalog of Political and Personal Satires (London: Printed by Order of the Trustees, 1870--), 6:933-34.

caricatures, speeches and writings by persons of opposing political and religious views, some newspapers and periodicals, and parodies like the stanza quoted above all reflected and helped to create the image of an extreme revolutionary, a view of Priestley which reached its peak in the last decade of the eighteenth century. A modern variant of the image of Priestley as radical has been offered by Staughton Lynd, who has favorably characterized Priestley as one of the intellectual ancestors of the New Left. When these distortions are contrasted with Priestley's real views, both the details and the central thrust of his social and political thought come into focus.

Prints by caricaturists were immensely popular in late eighteenth-century England. These engravings were sold both hand-colored and plain. Actually produced by a combination of etching and engraving, they were widely collected by those who could afford the rather substantial prices. Galleries where they could be viewed also existed in London. Sometimes the caricatures appeared in such periodicals as the Attic Miscellany, Bon Ton Magazine, Anti-Jacobin Magazine & Review, and the Carlton House Magazine. More than thirty-five such prints have survived in which Priestley or an allusion to Priestley appears.[2]

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[2]Draper Hill, ed., Fashionable Contrasts: Caricatures by James Gillray (London: Phaidon Press, 1966), pp. 6-7, 20-24 and the invaluable greatly detailed descriptions in the British Museum Catalog of Political and Personal Satires. I have seen some prints or descriptions of prints in which Priestley appears, which are not in that multi-volume work. See Bolton, "Likenesses," pp. 187-88 and

The earliest known Priestley caricature (February 1780) portrays Priestley along with Richard Price as servants of the Devil supporting Lord Shelburne in such evil designs as the independence of the United States and the taking of the crown by the Prince of Wales. Priestley's notorious materialism is depicted with the words "Dam-----n [damnation] is a Jest, the soul is not immortal."[3] This image of Priestley being in league with Satan became a familiar theme. Edmund Burke in a speech on the floor of the House of Commons opposing the repeal of the English penal laws on religion (May 11, 1792) posed the question whether Priestley and his colleagues "brought airs from Heaven or blasts from Hell."[4] Burke clearly felt the latter to be the case. Later, Priestley as witch was only one of the more vivid visions in the scurrilous attacks of William Cobbett (under the pseudonym Peter Porcupine):

> Franklin, Price and Priestley! A precious trio! . . . like the three Weird Sisters round their caldron brewing
>
> "Double, double, toil and trouble:
> Fire, burn, and caldon bubble."[5]

Loewenfeld, "Contributions to the History of Science," facing p. 41. Cartoon engravings of Priestley advertise both Holland's Caricature Exhibition Rooms and S. W. Fore's Caricature Museum.

[3] British Museum Catalog number 5644, in 5:382-83.

[4] [J. Debrett], The Parliamentary Register, 95 vols. (London: Printed for J. Debrett, 1782-1813), 33:28, reporting Burke's speech of May 11, 1792. Debrett gives somewhat more extensive transcriptions than does Hansard.

[5] Peter Porcupine [William Cobbett], Observations on Priestley's Emigration reprinted in Porcupine's Works, 12 vols. (London: Cobbett and Morgan, 1801), 1:206. Originally published in August 1794.

Although some of the assaults Porcupine made in the United States before returning to England in 1800 were too noxious even for Priestley's opponents to stomach,[6] he was not alone in invoking the witches' scene from Macbeth. A cartoon issued shortly before the various dinners celebrating the second anniversary of the fall of the Bastille (July 14, 1791) has Priestley singing to the spirit of Paine while dancing round a caldron with Fox, Towers, and Sheridan.[7] Fanatical sedition and atheism are coupled in many of the cartoon prints of Priestley, notably in six engravings in which he figured during the controversy over Fox's motion for the repeal of the Test and Corporation Acts in late February and March 1790.[8]

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[6] London Monthly Review, August 10, 1796; Noah Webster, Jun., Ten Letters to Dr. Joseph Priestley, in Answer to His Letters to the Inhabitants of Northumberland (New Haven: Read & Morse, 1800), pp. 3-4. For a reply by a democrat to Observations on Priestley's Emigration see A Brother of the Birch, A Twig of Birch for a Butting Calf; or Strictures upon Remarks on the Emigration of Doctor Joseph Priestley (New York: Printed by J. Buel, 1795). There is a large amount of material on Cobbett. An old and far from definitive specific account is Lyman C. Newell, "Peter Porcupine's Persecution of Priestley," Journal of Chemical Education 10 (1933) : 151-59. See also Pierce W. Gaines, William Cobbett and the United States, 1793-1835; A Bibliography with Notes and Extracts (Worcester, Mass.: American Antiquarian Society, 1971).

[7] British Museum Catalog number 7890, in 6:808-9.

[8] British Museum Catalog numbers 7628, 7629, 7630, 7632, 7635, and 7636, in 6:660-66, 668-70. A redrawing of no. 7629 may be seen in Joseph Grego, Rowlandson the Caricaturist, 2 vols. (New York: J. W. Bouton, 1880), 1:271, with description on pp. 270-72. This is briefer than the British Museum Catalog, which only tentatively ascribes this print to Thomas Rowlandson (1756-1827). A reproduction of number 7630 appears in Henry Duff Trail and J. S. Mann, eds. Social England, illustrated ed., 6 vols. (London, New York [etc.]: Cassel and Co., 1902-4), 5:553.

While satanic connections or Priestley's alleged atheism were important themes in many of the caricatures of Priestley, the related theme of dangerous revolutionary was paramount. Dissenters were prominent among English supporters of the French Revolution and in the reform agitation of the 1790's, providing their opponents the opportunity to make frequent allusion to the excesses of the Puritan Revolution of the seventeenth century. For example, Priestley was portrayed with a firebrand in "Puritanical Amusements Revived."[9] Numerous other cartoons depicted Priestley as actually fomenting violent revolution. Priestley as firebrand was the sole figure in "Doctor Phlogiston," issued as Political Portraiture No. 4 of the Attic Miscellany in early July 1791.[10] A print by James Gillray, the most popular of the caricaturists, pictured Priestley drinking a toast to having the King's head in an empty communion dish,[11] and another Gillray engraving

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[9]British Museum Catalog number 7632, in 6:666.

[10]British Museum Catalog number 7887, in 6:806; reproduced in R. M. Caven, Joseph Priestley, 1733-1804 (London: Institute of Chemistry of Great Britain and Ireland, 1933), facing p. 12, and in Loewenfeld, "Contributions to the History of Science," plate 10, after p. 40. This plate was reissued in November 1794 in the Carlton House Magazine 3:359, as "The Reverend Philosopher."

[11]British Museum Catalog number 7894, in 6:812. Fortunately the Gillray plates survived after his death in 1815, and 12 of the 13 Gillray caricatures in which Priestley figures may be seen in the large folio, James Gillray, The Works of James Gillray, from the Original Plates (London: Printed for H. G. Bohn, 1847) (The date is that of the title page of the copy in the University of Michigan Rare Book Division; it is usually dated 1851), plates 57, 58, 74, 90, 91, 101, 102, 106, 118, 134, and 296, and plate 31 of a slim second folio with the U. of Michigan copy. With the exception of the last the plate numbers correspond with the descriptions

had Priestley serving up a mitre on a dish while Fox brings the steaming head of Pitt and Sheridan serves a broken royal crown.[12] Perhaps only a mention of the portrayal of Priestley along with Goodwin, Price, and others as horse turds in Gillray's "The Apples and the Horse-turds . . ."[13] need be added to indicate the depths to which the caricaturists could go.

Reaching its peak in the 1790's among Englishmen and Americans of more conservative political and religious views, the characterization of Priestley as dangerous revolutionary had its foundation in distortion of both the religious heterodoxy discussed in Chapter IV and Priestley's political writings. Examples might be cited almost ad infinitum from speeches, published replies to his works, reviews, and other sources, as well as the prints which have just been described.[14] The "Gunpowder Priestley" appellation with which this chapter began serves to summarize the basic hostile image of Joseph Priestley current in his mature years.

A 1792 engraving by the patriarch of the well-known Cruikshank family of caricaturists pictures Priestley and

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in the accompanying volume, Thomas Wright, and Robert Harding Evans, Historical and Descriptive Account of the Caricatures of James Gillray (London: Henry G. Bohn, 1851). The descriptions in the British Museum Catalog (not illustrated) supercede this in the main.

[12] British Museum Catalog number 8318, in 7:21-22.

[13] British Museum Catalog number 9522, in 7:611-12. It is there misdated 1808; on the original plate it appears to be 1800, and is so dated in Draper Hill, Mr. Gillray, The Caricaturist: a Biography (Greenwich, Conn.: Phaidon Publishers [1965]), p. 126.

[14] See, for example, the many reviews of works both by Priestley and by his opponents in the 1791 volumes of Gentleman's Magazine (vol. 61, pts. 1 and 2).

Paine at a table with gunpowder and pistols plotting revolutions, treasons, murders, and fires.[15] Priestley had indeed several times made use of a gunpowder allusion. He first did this in an essay appended to a Guy Fawkes Day sermon in 1785. Priestley wrote of the Unitarian efforts to uncover and spread religious truth as the laying of gunpowder grain by grain "to which the match will one day be laid to blow up the fabric of error." It was like sowing seeds that would sprout into a large harvest of Unitarianism, Priestley noted in another image immediately preceding the gunpowder reference.[16] Such an innocent gunpowder allusion was natural fuel for his opponents' fires; Sir William Dolben made use of it to show how extremely dangerous he thought the dissenters were when he

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[15]British Museum Catalog number 8131, in 6:933-34; Edward Bell Krumbhaar, Isaac Cruikshank; a Catalog Raisonne, with a Sketch of His Life and Work (Philadelphia: University of Pennsylvania Press, 1966), number 398.

[16]Joseph Priestley, The Importance and Extent of Free Inquiry in Matters of Religion; a Sermon Preached before the Congregations of the Old and New Meetings of Protestant Dissenters at Birmingham, November 5, 1785, To Which are Added Reflections on the Present State of Free Inquiry in this Country, and Animadversions on Some Passages in Mr. White's Sermons at the Bampton Lectures; Mr. Howes's Discourse on the Abuse of the Talent of Disputation in Religion; and a Pamphlet intitled "Primitive Candour" (Birmingham: Printed by M. Swinney, for J. Johnson, London, 1785), pp. 40-41. There was a 2d ed. in 1787. The reflections and animadversions that contain the famous allusion do not appear with the sermon in Priestley, Discourses on Various Subjects (1787), pp. 149-77 and Joseph Priestley, Discourses on Various Subjects, Intended to Have Been Delivered in Philadelphia . . . To Which are Added, Some Others Selected from the Same Author (Northumberland: John Binns, 1805).

addressed the House of Commons in opposition to the repeal of the Test and Corporation Acts in 1787.[17]

Priestley, perhaps unwisely, persisted in the use of the gunpowder allusion even though he was gaining notoriety as "Gunpowder Priestley." Noting Dolben's misleading use of quotation, he made it perfectly explicit in his Letter to the Right Honourable William Pitt (1787) that his gunpowder "is not composed of saltpetre, charcoal, and sulphur, but consists of arguments."[18] In the preface to his Letters to the Rev. Edward Burn (1790), a part of his heated controversial exchange with Anglican clergymen, Priestley wrote that strong support of orthodox views by friends of the Church of England hierarchy was also analogous to laying gunpowder under the establishment. It would perhaps lead to the sudden disestablishment of the state church since it provoked enlightening free discussion.[19] The use of the

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[17][Debrett], Parliamentary Register, 21:568, reporting Dolben's speech of March 28, 1787; T. C. Hansard, The Parliamentary History of England [Hansard's Debates], 26:831.

[18]Joseph Priestley, A Letter to the Right Honourable William Pitt, First Lord of the Treasury and Chancellor of the Exchequer; On the Subject of Toleration and Church Establishments; Occasioned by His Speech Against the Repeal of the Test and Corporation Acts, on Wednesday, the 28th of March 1787 (London: Printed for J. Johnson, 1787), pp. 17-18.

[19]Joseph Priestley, Letters to the Rev. Edward Burn, of St. Mary's Chapel, Birmingham, in Answer to His "Letters on the Infallibility of the Apostolical Testimony Concerning the Person of Christ" reprinted in Joseph Priestley, Familiar Letters Addressed to the Inhabitants of Birmingham, 2d ed. (Birmingham: Printed by J. Thompson and sold by J. Johnson, London, 1790), pp. 207-8. The Letters to Burn was originally a separate pamphlet issued earlier the same year.

analogy between the slow propagation of truth by reasoned argument and the laying of gunpowder "grain by grain under the old building of error and superstition" was defended by Priestley in his Familiar Letters to the Inhabitants of Birmingham (1790).[20]

At a time when Guy Fawkes Day was still an annual anti-Roman-Catholic holiday in England, a cautious man might not have made allusions to gunpowder. From Priestley's mere use of such an allusion to express his abiding faith in the power of reasoned argument, however, his opponents made him appear as the same type of radical as those in the famous plot to blow up Parliament in 1605. Priestley himself noted "the almost incredible number of times this simple comparison has been quoted, or alluded to, by the enemies of the Dissenters."[21] An unfairly abridged version of the preface to the Letters to Burn was even produced and given to all the members of the House of Commons in 1790. Edmund Burke used the image of "Gunpowder Priestley" from that abridgment to help prevent passage of Fox's motion for the repeal of the Test and Corporation Acts.[22] From the raw material of an advocate

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[20] Priestley, Familiar Letters, pp. viii-ix.

[21] Ibid. A treatment of the gunpowder allusion (with an erroneous citation) can be found in William R. Carden, Jr., "The Political and Historical Ideas of Joseph Priestley" (Ph.D. Dissertation, Emory University, 1966), pp. 144-46.

[22] Hansard's Debates, 28:438-39, reporting Burke's speech of March 2, 1790. The printed paper of misleadingly selective extracts that was put into Burke's hands along with the rest of the House of Commons and the Bishops provoked Priestley to defend himself in a printed letter of March 4,

of intellectual liberty, Priestley's opponents had manufactured a violent revolutionary who in still another engraving was depicted literally plotting explosion by gunpowder.[23]

In sharp contrast to this popular image of Priestley as an advocate of revolution by force, Priestley's political writings from beginning to end assert that violent changes in political establishments were almost certain to be disastrous. As he put it in his "Remarks" annexed to his Essay on a Course of Liberal Education (1765), "I would endeavour to stop the ablest hand that should attempt to reform in this manner; because it is hardly possible but that a remedy so effected must be worse than the disease."[24] While, as we shall see, Priestley's political views would become more radical in some other respects by the 1790's, this position as expressed in his first published political writing of 1765 remained unaltered.

1790, to the Bishops and Members of the House of Commons, which he also included as Appendix 3 of Appeal on Riots, pt. 1, pp. 147-50. Both there and in the Familiar Letters, pp. 38-40 and 207-8 (where italics are used to show the way omissions were made) Priestley clearly demonstrates the unfairness involved in the extracts.

[23]British Museum Catalog number 7636, in 6:668-70. The mixture of the atheism charge with sedition is well illustrated by this strip engraving with 6 compartments; three of the other sections refer to the widely circulated story that Silas Deane on his deathbed confessed that Priestley had converted him to atheism. For the Deane incident with a reply by Priestley see Gentleman's Magazine 60 (1790) : 383-85. An extended refutation of the charge including supporting letters of evidence from others was made by Priestley in Chapter 21 (pp. 173-84) of the Familiar Letters.

[24]Rutt, ed., Works of Priestley, 22:119. The "Remarks" were later incorporated into his Essay on the First Principles of Government. Rutt annotates this as one of the sections from the earlier (and rare) work.

The main reason revolution does not work, Priestley argued, is that the real source of power in any state is the opinions of the majority of the people of the country in question. If the populace has long been of the opinion that an absolute monarchy is a sacred institution, then any revolution, despite its goals, would end in an absolute monarchy. Only when "much previous discussion and reasoning on the subject" precede political change (so that the "generality of the people" are convinced) can "wise and effectual reform" be possible. As he put it in 1791 in his most radical anonymous political publication, "In reality it is opinion that governs the world, and till the general opinion in any country concerning the foundation, the nature, and the uses of government be changed, all useful revolutions will be impossible, or not permanent."[25] Wise men, Priestley asserted, would never wish for "great or sudden change in any existing form of government," but would rather labor to enlighten the people;

> when the minds of the generality of the people are well informed concerning the nature of government, and the true source of all abuses, their only expressing their sense of them may be the means of procuring a redress of their complaints without any violence whatever; or if a crisis should arise in which great changed [sic] must necessarily be made, they will be prepared to make a wise and effectual reform in their government.[26]

Priestley also argued that the fledgling state of political science "makes it so extremely hazardous to introduce any

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[25][Joseph Priestley], Political Dialogues, Number I. On the General Principles of Government (London: Printed for J. Johnson, 1791), pp. 29-31. Last quote at p. 31.

[26]Ibid., pp. 29-30.

material change into an established form of government. No human sagacity can foresee what inconvenience might arise from it."[27]

History, Priestley contended, demonstrated the truth of his position. The observation of the martyrdom of such historical figures as Algernon Sydney (who had been zealous for the "liberties and best interests of mankind") would both raise up more "friends to the same great interests" and make them "more prudent" in their methods.[28] In 1791, when Priestley was most optimistic about the French Revolution, he based his optimism on "the minds of the great body of the French nation" being "thoroughly enlightened on the subject of government,"[29] and by 1803 he felt the unfortunate end to which the French Revolution had come clearly verified the opinion he had been advancing for forty years that revolutionary change was "so extremely hazardous."[30]

Rather than urging political action as would have been expected if he had actually been a revolutionary, Priestley sometimes did exactly the opposite. Speaking to a congregation largely consisting of English emigres in

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[27]Priestley, Lectures on History and General Policy, p. 13.

[28]Ibid., pp. 30-31.

[29][Priestley], Political Dialogues, p. 32.

[30]Footnote added by Priestley on p. 58 of vol. 1 of the 1803 (first American) edition of the Lectures on History and General Policy (Philadelphia: Printed for P. Byrne, 1803). The section footnoted is the one cited in footnote 27 above (in the first ed.).

Philadelphia in 1797, Priestley cautioned that as strangers they should not participate in American politics.[31] While 1797 was a delicate moment in American politics, a true radical might well have thrown such caution to the winds. Earlier when Priestley arrived in the United States he himself scrupulously avoided any political activity and wrote to a friend that he was glad that by leaving England when he did he had avoided involvement with the increasingly more radical activities of his English acquaintances and friends in the Corresponding Societies.[32] While some aspects of the political thought of Joseph Priestley were very liberal for his times, "Gunpowder Priestley" was clearly a distorted image of his actual views.

Another portrait of Priestley as a political and social thinker that is equally a caricature of his actual views has been painted by Staughton Lynd in his otherwise often brilliant Intellectual Origins of American Radicalism. Lynd points to the basic contradiction between natural rights political theory and deterministic psychology in the writings of John Locke. If men's minds were totally formed by their environment as Locke's psychology tended to hold, they could hardly be the innately political beings possessed of natural

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[31]Priestley, Address to the Unitarian Congregation at Philadelphia, p. 22.

[32]Priestley, Philadelphia, July 5, 1794, to Rev. Theophilus Lindsey, "Priestley--Lindsey Letters." For Priestley's reception on his arrival in America and the attempt by the emerging parties to get Priestley politically involved see Chapter VIII below.

rights that Lynd sees postulated in Locke's political writings. Lynd stresses the rejection of the environmental determinist part of the Lockean tradition by a group of English political theorists. In depicting this circle, which included Priestley as well as Richard Price, Thomas Paine, Catherine Macaulay, James Burgh, and others, as the intellectual ancestors of the New Left, Lynd argues that they based their political views on the concept that man was innately able to make correct choices. All men, including those of the lowest classes, Lynd argues, were believed by these writers to be naturally capable of making political decisions and thus to possess natural rights. Their political liberalism was based on this radical egalitarianism resulting from a rejection of the prevailing Lockean view that men were formed from blank tablets by interaction with their environment. Acknowledging only in a footnote that Priestley was in fact a determinist,[33] Lynd argues that Priestley, with the others in this group, developed a political position based on a fundamental belief in the innate worth of all men of every social class.

Priestley's actual and reiterated views on the lower classes completely negate Lynd's interpretation. Priestley's published writings clearly show that he was far from being a radical egalitarian. Indeed, time and again he portrays

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[33]Staughton Lynd, Intellectual Origins of American Radicalism (New York: Vintage Books, 1969 [orig. pub. 1968]), footnote 27, on p. 62. Chapters I and II are the most pertinent here. Some of the specific positions discussed later in the book do indeed adequately fit Priestley.

the lower classes as unreasoning sheep-like followers of those above them on the social scale and as irresponsible and profligate.

Priestley's recommendations for provision for the poor give a characteristic reflection of this outlook. The English poor laws, Priestley felt, only encouraged irresponsibility by assuring a subsistence for those who would not or could not provide for themselves. By making it unnecessary for the working class to provide for the future, Priestley believed all such systems of assured aid to the needy gave no motive for industry and careful saving. All governmental or guaranteed charity, Priestley asserted, ought to be completely ended, and the natural state in which each man had to look out for himself should prevail. While there would be "instances of great distress," this surely would be better than systems under which "the greater is the provision that is made for the poor, the more poor there will be to avail themselves of it."[34]

Rather than encourage irresponsibility in the lower orders by assuring that they would not starve, Priestley

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[34]Priestley, Lectures on History and General Policy, pp. 279-81. The same views are given at more length in [Joseph Priestley], An Account of a Society for Encouraging the Industrious Poor with a Table for Their Use, to Which are Prefixed Some Considerations on the State of the Poor in General (Birmingham: Printed by Pearson and Rollason, 1787), pp. 3-8, and briefly in Joseph Priestley, The Case of Poor Emigrants Recommended, In a Discourse, Delivered at the University Hall in Philadelphia, on Sunday, February 19, 1797 (Philadelphia: Printed by Joseph Gales and sold by W. I. Birch and Booksellers in Philadelphia, New York and Baltimore, 1797), pp. 13-14.

advocated that England pass a law forcing laborers to contribute part of their pay to an annuity or fund in order to provide for their own old age or other need.[35] The Americans, Priestley noted on his arrival in the United States, were following England's model too closely in the matter of provision for the poor.[36] In a sermon encouraging contributions to a Philadelphia emigrant aid society in 1797, Priestley strongly cautioned against any provision by which the emigrants would have a legal claim to assistance. Such an "injudicious system," he warned, would, like the English poor laws, "only encourage idleness, improvidence, insolence, and profligacy of every kind."[37] Instead a select few should decide who was worthy of temporary aid, aid that might preferably be in the form of an interest-bearing loan.

It was part of the providential design, Priestley asserted, for some to be rich and others to be poor. Such

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[35][Priestley], An Account of a Society, pp. 13-15; Priestley, Lectures on History and General Policy, pp. 280-81.

[36]Priestley, Northumberland, July 30, 1794, to Benj[amin] Vaughan, Esq., M. P., London, Priestley Manuscripts, Public Library, Museum Street, Warrington, England. I have used a microfilm of the photostats of these letters in the Library of Congress. This important collection of 69 letters, mostly from Priestley to his brother-in-law, John Wilkinson, will be cited hereafter as "Wilkinson Letters."

[37]Priestley, The Game of Poor Emigrants, pp. 13-14. The Philadelphia Society for the Information and Assistance of Emigrants and Persons Emigrating from Foreign Countries was extant only from about 1793-4 to about 1800. See John Thomas Scharf and Thompson Westcott, History of Philadelphia, 1609-1884, 3 vols. (Philadelphia: L. H. Everts & Co., 1884), 2:1468. Priestley's discourse gives some facts and figures on the work of the organization.

inequality was necessary, in "the best of all possible worlds," to bind society together and was designed to teach the poor such excellent virtues as humility and gratitude, while the distress of the lower orders "softens the heart, and excites to acts of kindness" the more well to do. "Happily for us," Priestley summarized,

> there is such a foundation laid in the course of nature and the order of providence, for that inequality in the conditions of men, which has so excellent an effect . . . that no institutions of man can destroy it; though, as we are in duty bound, we may lessen the evils that necessarily arise from it.[38]

Priestley, of course, strongly urged the Christian virtue of charity. Indeed, there was a positive duty for benevolence by those who had been made trustees of wealth by the gift of God. This was, however, traditional Christian charity for which accounting would be rendered at the last judgment,[39] not by any means a program of radical economic change.

Priestley, to be sure, worked for the abolition of the English slave trade and gradual emancipation, but here again it would be a mistake to attempt to see a man fundamentally motivated by radical egalitarianism. When he was in Birmingham, Priestley participated in a committee working to stop the slave trade,[40] and in a sermon urged his

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[38]Priestley, The Case of Poor Emigrants Recommended, pp. 7-13; first quote at p. 10 and second quote, pp. 12-13.

[39]Ibid., pp. 10-12.

[40]Priestley, Appeal on Riots, pt. 1, p. 10. This section of this work was among those excerpted in Cory, Priestley, at p. 101.

congregation there to join in recommending this to Parliament.[41] Consistent with his determinism, he argued that it was their "wretched degraded condition," not innate mental qualities, that made Negro slaves greatly inferior to Europeans.[42] Briefly relating the horrors of slavery from the works of others, Priestley put special emphasis on the denial of "advantages for improving his nature and preparing for a future state."[43] Priestley was careful to note, however, that immediate emancipation might be improper and inhumane,[44] and that "it is for the interest of the lowest orders, as well as of the highest," that the subordination of master-servant relations should always exist.[45]

Priestley's interpretation of the famous Birmingham Riots of 1791, in which he suffered the loss of his home and his meeting house, vividly illustrates his view of the lower classes. Efforts on behalf of the rights of religious dissenters and their approval of much of the French Revolution had aroused emotions and helped to foment stereotypes of dissenters ("Gunpowder Priestley" was the most prominent of

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[41]Joseph Priestley, A Sermon on the Subject of the Slave Trade; Delivered to a Society of Protestant Dissenters at the New Meeting in Birmingham; and Published at Their Request (Birmingham: Printed for the Author, by Pearson and Rollason, 1788).

[42]Ibid., p. 20.

[43]Ibid., pp. 15-18.

[44]Ibid., pp. 29-30.

[45]Ibid., pp. vii-viii.

these). Mob violence eventually broke out in Birmingham on July 14th. The destruction by ostensible supporters of "Church and King" began after one of the dinners held that day in various English cities in honor of the anniversary of Bastille Day. Burning and looting by a mob that consumed vast quantities of plundered alcoholic beverages prevailed for three days. The damaging or total destruction of three Unitarian and one Baptist meeting house, and the looting, burning, or attacking of the houses of at least twenty-seven persons resulted.[46] This "Church and King" Riot, which was largely directed at Priestley and other dissenters, and from which Priestley escaped with his life only by a harrowing flight to London,[47] resulted in a deluge of transcripts of trials, newspaper stories, and polemical publications.

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[46] R. B. Rose, "The Priestley Riots of 1791," Past and Present 18 (1960) : 76. Rose's account, written with considerable scholarship and in light of the work on mobs of George Rudé, is the best of a considerable secondary literature. See also Bernard M. Allen, "Priestley and the Birmingham Riots," Unitarian Historical Society Transactions 5 (1932-3) : 113-32; Ronald A. Martineau Dixon of Thearne's "Was Dr. Priestley Responsible for the Dinner which Started the 1791 Riots?" in the same vol., pp. 299-323; Eric Robinson, "New Light on the Priestley Riots," Historical Journal, vol. 3, no. 1 (1960), pp. 73-75; and R. E. W. Maddison and Francis R. Maddison, "Joseph Priestley and the Birmingham Riots," Royal Society of London Notes and Records 12 (1956) : 98-113. The last emphasizes the efforts to recover at law the damages to Priestley's property.

[47] Priestley himself describes the three and a half days on horseback, in hiding, and in other transportation in Appeal on Riots, pt. 1, pp. 28-33. The contemporary material on the riots and resultant trials is vast. The issues of the London Chronicle are especially good as a source for the heat of excitement generated, and are also more accurate than the strongly Tory Times. A number of manuscript accounts and later memoirs have found their way into print to supplement the huge pamphlet production, etc. of the time.

"That there were instigators, as well as perpetrators, of these horrid scenes," wrote Priestley in one of his contributions to this flood, "was sufficiently evident."[48] The British lower classes, Priestley asserted, were worse than savages and the most excessive in "profaneness, brutality, and licentiousness" in the entire world.[49] As a result of their ignorance, this "lawless rabble" could be used for any purpose whatever by a skillful leader.[50] In his Appeal to the Public, on the Subject of the Riots in Birmingham, Priestley proceeded to argue that some of his opponents had found reasoned argument insufficient to combat his views and had resorted to "instigating a furious mob."[51] Plans had been laid, and leaders were probably brought from London.[52] In Priestley's mind, religious bigots who worked at inflaming the lower orders against the Unitarians and other liberal dissenters were at the roots of his ordeal.[53] As he

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[48]Priestley, Appeal on Riots, pt. 1, p. 55.

[49]Ibid., p. 77.

[50]Ibid., pp. 86-90.

[51]Ibid., pp. 51-52.

[52]Ibid., pp. 60-61.

[53]Priestley agreed with the strategy that was adopted of pointing chiefly to religious and not to political reasons for the persecution. See ibid., pp. 52-53, and passim. In Priestley, London, July 29, 1791, to James Keir, in Bolton, Scientific Correspondence, pp. 109-11 (an abridged version of the same letter is in Thorpe, Priestley, pp. 139-40) and Priestley, July 29, 1791, to William Russell, quoted in Jeyes, The Russells, pp. 44-45, he noted that "upon the face of it" it was purely religious and discussed his unwillingness to let Fox and others make the issue a political one, rather

put it in the letter he published immediately after he reached London, the rioters had been "misled" by their "superiors" who had done everything to arouse their passions.[54] Priestley presented further evidence and arguments for his position in a second part of his Appeal which he published in 1792.[55] While modern research cannot support the degree of conspiracy in which he believed,[56] Priestley clearly saw the "Church and King" or Priestley Riots as the result of the manipulative use of degraded lower classes by those above them in the social order.

Priestley's view of the lower classes remained unchanged in the United States in the last years of his life. In the American edition of his Lectures on History and

than a case of religious persecution. For the dissenters' pose of sufferers exclusively on account of religious intolerance see Samuel Whitbread's speech in Parliament calling for an inquiry into the riots [Debrett], Parliamentary Register, 23:56-76, esp. at p. 58. Actually motivation against Priestley in the furor was an intricately mixed religious and political hatred and fear.

[54]Joseph Priestley, London, July 19, 1791, "To the Inhabitants of the Town of Birmingham," London Chronicle, vol. 70, from Tuesday, July 19, to Thursday, July 21, 1791, p. 70. Priestley reprinted the letter as Appendix 2 of Appeal on Riots.

[55]Joseph Priestley, An Appeal to the Public on the Subject of the Riots in Birmingham, part II, To Which is Added, A Letter from W. Russell, esq. to the Author (London: Printed for J. Johnson, 1792).

[56]Priestley wrote Lindsey on Aug. 30, "It is not doubted by any body that I converse with that the measure originated with the Court itself. . ."; "Priestley--Lindsey Letters." The Rose article cited above presents the best assessment of causation. Clearly this was not an event directed from London, although local magistrates were at a minimum negligent in attempting to stop the riots and were perhaps involved in greater guilt.

General Policy (1803) he advocated both property and literacy standards for suffrage. Otherwise, he argued, in voting the lowest classes would simply follow the dictates of those on whom they depended.[57] Priestley's attitude toward his servants reflected his continued bad opinion of those beneath him on the social scale. A servant girl "as stately and proud as a queen" while actually poor, sickly, and "perfectly ignorant"[58] was only one of the trials in this respect faced by the Priestleys, who were clearly taken aback by the impossibility of getting good deferential servants in America. Although they brought two servants with them when they emigrated to the United States in 1794, one quickly proved unsatisfactory and the other (a boy) ran away because he wanted to be a sailor.[59] During his first years years in America, Priestley, like other "respectable" English emigres and travelers,[60] often complained with

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[57]Priestley, Lectures on History and General Policy (1803 ed.), 2:92-93. Lynd does note one early Priestley statement of similar import, but argues it took time for the group's egalitarianism to ripen, and then ignores (or does not know about) all the later statements; Intellectual Origins, p. 60.

[58]Priestley, Northumberland, July 12, 1795, to Rev. Theophilus Lindsey, "Priestley--Lindsey Letters."

[59]Priestley, Philadelphia, June 24, 1794, to Rev. Theophilus Lindsey, "Priestley--Lindsey Letters."

[60]For some examples, see William Priest, Travels in the United States of America, Commencing in the Year 1793, and Ending in 1797 (London: Printed for J. Johnson, 1803), p. 24; Isaac Weld, Travels through the States of North America, and the Provinces of Upper and Lower Canada, during the Years 1795, 1796, and 1797 (London: J. Stockdale, 1799), p. 17; and Samuel H. Jeyes, The Russells of Birmingham in

exasperation of the servant problem in America. At one point a black slave was hired by the week,[61] but the impossibility of getting servants remained, and only with time did Priestley begin to adjust and mention less often the difficulties of living in a "state of society . . . such as you cannot well form an idea of"[62] in his letters to friends who remained in England.

If, therefore, Priestley surely was neither a radical egalitarian nor an advocate of revolution by force, what was at the core of his political thought? Clearly he believed that the tabula rasa minds of the lower classes were very badly formed indeed by their environment, yet he did not seem to be much of an activist in trying to change that environment and thus to improve those lower than he on the social scale. What then was the teleology in Priestley's political concern? For Priestley, improvement in the social order would only come through advances in knowledge, and those advances could best occur if the educated few could pursue truth under freedom of thought. It is Priestley's great concern for intellectual liberty that explains the fervor of his commitment to "the cause of science, truth, justice,

the French Revolution and in America, 1791-1814 (London: G. Allen & Co., 1911), p. 249. "Respectable" was a characteristic adjective used by Priestley.

[61]Priestley, Northumberland, Dec. 17, 1795, to John Wilkinson, "Wilkinson Letters."

[62]Priestley, Northumberland, Nov. 9, 1795, to Rev. Theophilus Lindsey, "Priestley--Lindsey Letters." Priestley bewailed the problem to Lindsey as late as his letter from Northumberland of Nov. 4, 1797. Many letters before this mention the difficulty.

peace, and [that] which comprehends them all, and everything valuable in human life, liberty. . . ."[63]

Liberty, according to the basic definitions used by Priestley, was of two kinds: political and civil. "Political liberty" was the share one had in participation in or control of the government of one's country, while "civil liberty" was the individual freedom one possessed, freedom from governmental or societal control. The extent of one's political liberty, i.e., the extent to which all individuals shared the power of ruling, was of importance chiefly for the protection it gave to one's civil liberty, one's personal freedom. As Priestley put it in his Essay on the First Principles of Government which he published in 1768, "The former [political liberty] is the chief guard of the latter [civil liberty], and on that account principally it is valuable, and worth contending for."[64]

Civil liberty, therefore, was Priestley's chief concern in the political realm. While an important part of that civil liberty was the security of "undisturbed enjoyment of their possessions,"[65] the focus of his concern with civil

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[63]Priestley, fragment (close) of a letter dated Leeds, Feb. 14, 1769, Franklin Papers, American Philosophical Society, 78:49 (microfilm in the Clements Library).

[64]Joseph Priestley, An Essay on the First Principles of Government, and on the Nature of Political, Civil, and Religious Liberty, Including Remarks on Dr. Brown's Code of Education, and Dr. Balguy's Sermon on Church Authority, 2d ed. (London: Printed for J. Johnson, 1771), p. 59. General discussions of these basic positions can be found in Sections I-III of this work and in Lectures on History and General Policy, pp. 281-82.

[65]Priestley, Lectures and General Policy, p. 272.

liberty was intellectual, not economic. Complete freedom of speech and press as well as of thought was, for Priestley, "the only method of collecting and increasing the wisdom of the nation."[66] Priestley in both his Essay on the First Principles of Government and his Lectures on History and General Policy illustrated the paramount importance of civil liberty by discussing how knowledge and consequently everything else of importance depended on intellectual liberty. Advances in all realms of thought depended on a few ingenious and speculative individuals making discoveries that are in advance of ideas held by the majority. As he put it in the Lectures on History and General Policy, "if the present opinions and practices of the majority of society were imposed upon all the rest, no improvements could ever take place."[67] Absolutely convinced that all things in a deterministic universe, a universe of cause and effect, were designed for the best by Providence, Priestley rested assured that the interaction of reasoned arguments would always lead to new truths and to progress for mankind. To prevent any restraints on this progress, it was a fundamental affirmation for Priestley that civil liberty must be given the fullest possible reign.

As a dissenter in a period when intolerant laws remained on the books against those who did not conform to

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[66] Ibid., p. 275.

[67] Ibid., p. 274.

England's established church, Priestley quite naturally inherited a concern for freedom of religion. His efforts, however, went far beyond simply seeking increased rights for Protestants like himself. Indeed, he felt that dissenters only hurt their cause by limiting their attempt to gaining freedom for their own views. "You have hitherto proffered your prayer as Christians"; he wrote, "Stand forth now in the character of men and ask at once the repeal of all penal laws which respect matters of opinion."[68] As he put it in a pamphlet advocating full rights for Roman Catholics, "If our religion be of any value, it is so because it is true, and evidently so. It is nothing but the persuasion of its being true that can ever make it respected, and influence mens hearts and conduct. . . ."[69] Going far beyond the traditional concern of dissenters to procure rights for themselves (and not for others), Joseph Priestley felt that it was absolutely essential for the advancement of knowledge and thus for the betterment of society that all ideas be free to stand on their own merits alone.

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[68][Joseph Priestley], A Letter of Advice to those Dissenters who Conducted the Application to Parliament for Relief from Certain Penal Laws (London: J. Johnson, 1773) reprinted in Rutt, ed., Works of Priestley, 22:442. Richard Burgess Barlow, Citizenship and Conscience; A Study in the Theory and Practice of Religious Toleration in England During the Eighteenth Century (Philadelphia: University of Pennsylvania Press, 1962).

[69]"A Lover of Peace and Truth" [Joseph Priestley], A Free Address to Those Who Have Petitioned for the Repeal of the Late Act of Parliament in Favour of the Roman Catholics (London: J. Johnson, 1780), p. 5.

A belief in a minimum of governmental action and control was a natural result of Priestley's central commitment to intellectual liberty. There was a "very great" danger that by trying to do too much to benefit society, government would defeat its purpose of protecting civil liberty. "It is most adviseable," Priestley wrote, "to leave every man at perfect liberty to serve himself till some actual inconvenience be found to result from it."[70] In the economic sphere, for example, we have seen how Priestley felt that government should not be involved in providing for the poor.[71] Indeed, in Priestley's view, a free trade, capitalistic system should not be interfered with in any way by government. One notable exception was recommended in order to provide greater freedom for future generations. While people should be at perfect liberty to will their property to whomever they pleased, Priestley felt that they should not be allowed to dictate what those persons should then do with the inheritance. Similarly government should forbid perpetual trusts or charities. Since men in the future would be wiser and needs would be different, the present generation should never try to impose its will on those to follow.[72]

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[70]Priestley, Lectures on History and General Policy, p. 273.

[71]Pages 158-59, above.

[72]Priestley, Lectures on History and General Policy, pp. 277-79.

Adam Smith's views on economics were consistently echoed in Priestley's political writings. When Priestley was preparing his old Warrington Academy lectures on history and general policy for publication in late 1787, he noted that the most considerable way in which he had altered them was by amplifying his own views with additional lectures based on The Wealth of Nations.[73] The extent to which Priestley advocated the non-interference of government is dramatically shown by the position he advanced in regard to the rights of merchant ships at sea. In 1798 during the Adams' administration when there was a serious threat of war with France, Priestley wrote an anonymous article for the Aurora. Going beyond the argument that government should provide no protective duties for goods, Priestley asserted that the most the United States government should do about damages to merchant ships by France or other nations would be to make complaint to the governments involved. The dangers and risk should be borne by the merchants themselves in the same way that farmers had to bear on their own the damages from storms. Merchants could well put their capital into internal improvements, Priestley argued, if foreign commerce was too hazardous. In any case, the United States should not go to war to protect merchant ships at sea.[74]

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[73] Ibid., preface. While the date of publication is 1788, the preparation was done (see his correspondence) in late 1787, the volume coming out early in the new year.

[74] A Quaker in Politics [Joseph Priestley], "Maxims of Political Arithmetic," the Aurora, Feb. 26 and 27, 1798;

An ardent devotion to civil liberty, strong support for narrowly limited government, a belief in gradual change through the enlightening effects of reasoned argument, and a relatively bleak view of the qualities of the lowest social classes were consistent elements in the thought of Joseph Priestley from the beginning to the end of his career. With regard to the specific forms of polity that best served the interests of mankind, however, Priestley did change his mind. Always on the liberal end of the spectrum in this regard, Priestley became considerably more democratic in the latter years of his life.

While Priestley wrote much for the cause of reform, during the whole of the earlier part of his career he was decidedly a friend to the mixed constitution of King, Lords, and Commons. Careful study of history and political science, Priestley asserted in his Lectures on History and General Policy, would lead to the conviction that the English constitution was indeed one with "superior advantages."[75] Democracy, he asserted, "is not possible, except in exceeding small

reprinted and acknowledged by Priestley in his Letters to the Inhabitants of Northumberland and its Neighbourhood, on Subjects Interesting to the Author, and to them. The Second Edition with Additions; To Which is Added a Letter to a Friend in Paris, Relating to Mr. Liancourts Travels in the North American States (Philadelphia: Printed by John Bioren for John Conrad, & Co.; M. and J. Conrad & Co., Baltimore; and Rapine, Conrad, & Co., Washington City, 1801), pp. 81-91. This was also included in the first edition, issued in two parts in late 1799. See also pages 73, 75-78 of the Letters to Northumberland.

[75]Priestley, Lectures on History and General Policy, pp. 11-12.

states."[76] Citing Montesquieu, Priestley asserted that the checks and balances in the mixed governments of modern Europe made them totally different from ancient monarchies. The advantages of despotism and democracy were combined in such a way as to make "a better form of government than any thing that had been devised by man before."[77] Priestley joined such Enlightenment voices as Montesquieu and Voltaire in praise of England's mixed constitution.

In this earlier period Priestley did not, however, devote the bulk of his energies to extolling or defending the British constitution, but rather worked to cure its diseases. While the greater part of these exertions were on behalf of dissenters from England's established church, in anonymous publications Priestley also expressed his support for the cause of John Wilkes and stated that the root of the ills of the English constitution lay in the corruption of Parliament by the ministry through too many lucrative "places."[78]

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[76]Priestley, Essay on the First Principles of Government, p. 15; for a reference of a similar nature see footnote 94, below.

[77]Priestley, Lectures on History and General Policy, pp. 309-10.

[78][Joseph Priestley], An Address to Protestant Dissenters, On the Approaching Election of Members of Parliament, With Respect to the State of Public Liberty in General, and of American Affairs in Particular (London: Joseph Johnson, 1774), pp. 5 and 7. Section II of the pamphlet in the next footnote also supported the Wilkes struggle.

Aside from his efforts for religious liberty, Priestley's most noted political activity in the early part of his career was his support of the rights of the American colonies. Priestley combatted what he saw as "the iron hand of oppression"[79] against the Americans through two pamphlets which he published anonymously in 1769 and 1774. In both The Present State of Liberty in Great Britain and Her Colonies (1769) and An Address to Protestant Dissenters of All Denominations (1774), Priestley made it clear that he believed British efforts to tax their American colonies were unjust. As he put it in the later pamphlet, "if any realm or country be taxed by another, the people so taxed have no proper liberty, but are in a state of as absolute despotism as any of which we read in history."[80] Aside from such questions of right, he asserted that, "The benefits arising spontaneously from our extensive and increasing commerce with them will infinitely overbalance all that we shall ever be able to extort from them by way of tax."[81]

Such arguments of expediency, however, were secondary for Priestley. Foreign oppression was something he combatted on principle in both this and other cases. When he met such friends as Franklin and Richard Price at the Club of Honest

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[79][Joseph Priestley], The Present State of Liberty in Great Britain and Her Colonies (London: Johnson and Payne, 1769), p. v.

[80][Priestley], An Address to Protestant Dissenters of All Denominations, p. 11.

[81][Priestley], The Present State of Liberty, p. 32.

Whigs when he was in London, he was in the company of men with a similar devotion to liberty. On his annual London visit in April of 1772 he read Anna Laetitia Aikin's poem "Corsica" to them.[82] Earlier he had asked her to allow it to be published to aid in a subscription being raised to aid the Corsicans in their struggle for independence from the French.[83] For Priestley, the American situation was not all that different. When the Puritans had left the oppression of Stuart England, he argued, they were in a state of nature. Although they had voluntarily chosen to submit to the same king as England, they made their own laws, and any claim by Parliament to legislate for or tax them was certainly "the exercise of tyranny." America was not "subject to England"; representation, it was to be remembered, was a "fundamental maxim" of "British liberty."[84]

With the outbreak of the Revolution Priestley continued to be a strong friend of the American cause. In 1777 he was planning with the precocious ten year old younger son

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[82]James Boswell, journal, London, Thursday, April 9, 1772, in William K. Wimsatt, Jr. and Frederick A. Pottle, eds., Boswell; For the Defense, 1769-1774 (New York, Toronto, and London: McGraw-Hill Book Company, Inc., 1959), p. 103. While Boswell was then a member of the Club of Honest Whigs and led the pro-Corsican movement in England, this was the last time he and Priestley would be in the same circle. For the coffee house club, see Verner W. Crane, "The Club of Honest Whigs: Friends of Science and Liberty," William and Mary Quarterly, 3d ser., 23 (1966) : 210-33.

[83]Priestley, Leeds, June 13, 1769, to Miss Aikin, printed in Thorpe, Priestley, pp. 70-71. For Anna Aikin Barbauld see pp. 51-52, above.

[84][Priestley], An Address to Protestant Dissenters of all Denominations, pp. 10-11.

of Lord Shelburne to make a small subscription for the American prisoners at Portsmouth.[85] Two years later in a letter to an unidentified correspondent he argued that granting the colonies independence would be the best policy. Differing from his employer Lord Shelburne on this matter, Priestley had on his own earlier forwarded some news from Boston with the hope that it might aid in promoting such a decision.[86] Throughout this period, however, despite his strong disagreement with much of current policy, Priestley continued to believe the English mixed constitution was the best form of government. When he published his Lectures on History and General Policy in 1788 these views remained unaltered.

In the next few years a shift occurred in Priestley's concept of what form of polity offered the best protection for the civil liberty on which he placed such a high value. The change became clearly evident in 1791 when he published Political Dialogues, a sequel to his The Present State of Liberty in Great Britain and Her Colonies of twenty-two years

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[85] William Granville Petty, Bowood, Dec. 20, 1777, to Lord Shelburne, Shelburne papers, Clements Library.

[86] Priestley, Calne, Sept. 27, 1779, to an unidentified British political figure, Misc. MSS, New York Public Library. A letter from Boston of May 20, 1799, identified as possibly sent to Priestley in the Massachusetts Historical Society Proceedings, ser. 1, 16 (1878) : 158-61, may be the intelligence Priestley refers to. Apparently the letter actually was sent to Price, not Priestley, to counteract the news from the British commissioners. See ser. 2, 17 (1903) : 319-21, where the letter is attributed as from Charles Chauncey to Price.

before. While both these small anonymous pamphlets appeared in only one edition, the change in Priestley's views was widely circulated in other of his publications.

Admitting his changed views, Priestley now argued that a republic was the best form of government to protect the civil liberties which were his central concern. In the Political Dialogues Priestley acknowledged that he no longer believed the balance of three forms of government was the best guarantor of civil liberty.[87] He now felt that ideally a National Assembly of representatives chosen frequently, perhaps annually, should be the supreme governing power. By a system of districts which would indirectly elect the "most respectable members of the society" for short terms, the advantages of democracy could be applied to large areas.[88] Priestley was careful to remark that he was

> far, however, from wishing that any attempts should be made to reduce the government into such a form as this, which I might recommend to a country that had no government at all. Things once established should be respected by speculative politicians, because they will be respected by the people at large.[89]

Reform in England should rather start with making Parliament again truly representative. All future changes that might affect the profits or honors of persons should affect only

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[87][Priestley], Political Dialogues, p. 2. The Political Dialogues were written before, not after, the riots, and therefore Priestley's new views can not be attributed to that event.

[88]Ibid., pp. 5-8.

[89]Ibid., p. 34.

those who might inherit them, and "emoluments of abuse die away gradually with those who are at present possessed of them."[90]

When Priestley issued an American edition of his Lectures on History and General Policy in 1803, although he did not very extensively revise the work, he did at several points make changes to reflect his new views. Perhaps the most revealing note is the one he added to his former statement extolling the British Constitution. "Late events," he wrote, "have shown the great abuses to which it is liable." Priestley went on to speak of the suffering of "the friends of liberty" and the great restraint of the freedom of the press in Britain.[91] One suspects that here is the crux of why he had changed his mind on the ideal form of polity, although in the Political Dialogues he had referred to the new light on government shed by the examples of the United States and France.[92] Priestley did not reveal much else about this change of view. He did not comment on this modification of his ideas in his Memoirs, as he did about other changes in his opinions. Priestley's publications after the riots show how deeply he was affected by the declining state of civil liberties as English government became more reactionary at the end of the eighteenth century.

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[90] Ibid., pp. 34-35; quote at p. 35.

[91] Priestley, Lectures on History and General Policy (1803 ed.), 1:56, footnote.

[92] [Priestley], Political Dialogues, pp. 1-2.

We can surmise that an empirical observation that civil liberty recently had not in fact thrived under England's mixed constitution was involved in the change of his ideas.

Whatever the cause, the later years of his life found Priestley an advocate of republican forms of government. He negated statements in the Lectures on History and General Policy that spoke favorably of the balance of various types of government.[93] He now qualified statements about the size of countries that could have republican governments with the remark "a judicious system of representation would seem capable of removing all the difficulties."[94] The examples could be multiplied to considerable length.

Within the new outlook, nevertheless, breathed the same concern for protection of civil liberties. For example, in his Letters to the Inhabitants of Northumberland three of his four recommendations for improvement of the U.S. Constitution were either to limit governmental powers or assure freedom of conscience. He suggested that no one person should be allowed to be president for more than three or four years and that a special court of deputies from the states should be formed to assure that no part of the government exceeded their proper powers. In addition he urged the abolition of all oaths of allegiance; only acts,

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[93]Priestley, Lectures on History and General Policy (1803 ed.), 2:62 (addition to section on p. 285 of the first edition).

[94]Ibid., p. 20 (addition to section on p. 257 of the first edition).

never opinions, ought to be punished.[95] "In all countries and under every form of government, opinions of every kind, and those of all persons . . . should be perfectly free."[96]

Joseph Priestley came to be seen as a violent radical by many Englishmen and Americans of the 1790's. While the caricature "Gunpowder Priestley," surely was false, yet there was something truly "revolutionary" in this advocate of intellectual liberty. For although Priestley was not motivated by any deep emotional commitment to humanity in all its forms, and though he did not have the revolutionary's zeal for quickly turning the world aright, he was nonetheless moved by a noble vision. His political views were those of a man of the intellect, not a man of passionate involvement in reality. Improvement in men's lives would come through the gradual progress of knowledge under civil liberty. Priestley's gunpowder was "not composed of saltpetre, charcoal, and sulphur, but consists of arguments."

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[95]Priestley, Letters to Northumberland, pp. 56-61. The other suggestion, that the Senate should have at most only a temporary veto over the House of Representatives, did not appear in the 1st ed. Through misnumbering in the 2d ed., there appear to be five suggestions, instead of the four actually there.

[96]Ibid., p. 54.

CHAPTER VII

"THE BEST OF ALL POSSIBLE WORLDS": THE REACTION OF JOSEPH PRIESTLEY TO THE MISFORTUNES OF LIFE

> All nature is but art unknown to thee:
> All chance, direction, which thou canst not see;
> All discord, harmony, not understood;
> All partial evil, universal good:
> And, spite of pride, in erring reason's spite,
> One truth is clear, whatever is, is right.

In 1761 Joseph Priestley selected the above passage to include as one of his "Examples of English Composition" in his grammar. He noted that excellence in style and syntax was not sufficient cause to include an excerpt; in addition the selections had to inculcate what was rational and moral.[1] In discussing poetry in his Lectures on Oratory and Criticism Priestley used the same lines as an example.[2] That Priestley repeatedly used this passage is not surprising, for the sentiment of these six lines echoes continuously through all the correspondence and published writings of Joseph Priestley to the very end of his life.

During his life Priestley pondered many evils in the past and present state of the earth; in the last years of his own existence a host of calamities in his personal life

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[1] Priestley, Rudiments, p. 65. The selection from Pope is on p. 84.

[2] Priestley, Lectures on Oratory, p. 301.

beset him. Yet this optimism, and the mechanistic yet religious cosmology on which it was based, persisted. The way in which his world view had developed and in which it informed the great variety of his endeavors has been demonstrated. The tenacious way in which he clung to a roseate philosophy in the face of misfortune will now be shown.

Priestley was not blind to the enormous evils that Voltaire in Candide had invoked in his ridicule of those who proclaimed this the "best of all possible worlds." Priestley, however, persistently maintained that, although the existence of calamity could not be denied, all such occurrences served good purposes in the providentially designed clock-like universe. Like the rest of his thought, Priestley's optimistic outlook contained elements of traditional Christian thought as well as the most contemporary rationalism. St. Augustine, after all, had maintained that although evil was not created by God, he permitted it to exist because he could bring good out of it. Under the influence of his basic Hartleyan faith, Priestley's version of the traditional need to account for evil stressed the structure of a mechanistic and determined cosmos. The evidence was clear, Priestley believed, that this structure was not only the "best possible" but was always improving.

In 1769 when Priestley was preparing the description of his chart of history he noted the "melancholy reflections" that were likely to be caused by the number of wars and revolutions. "What torrents of human blood has the restless

ambition of mortals shed," he exclaimed, "and in what complicated distress has the discontent of powerful individuals involved a great part of their species!"[3] But, he quickly noted, if war and peace were more attentively calculated it was likely that war's proportion was not greater than the usual measure of sickness to health. That proportion, he thought, men considered very comfortable on the whole. The amount of evil should not be unduly magnified.

Furthermore, "the most disastrous events which disfigure the face of history" clearly were "superlatively efficacious" in causing "the most happy and desirable state of things." Providence had created a system in which all apparent evil served good ends. Indeed, it was necessary:

> The circumstances which we complain of in the earth necessarily result from its structure, so that it is probable the conveniences could not have been had without the inconveniences; and since pain, as pain, is probably requisite to promote happiness, we may reasonably conclude, that the pleasures and advantages of society could not have been had without the disadvantages to which it is liable.[4]

When Priestley brought his Lectures on History and General Policy to a close with three lectures on the question of evil in the universe, he was more concrete about the good purposes of war. "Many of the most useful arts in civil life," he wrote, "owe their origin to contrivances for defence or offence in war."[5] Moreover, war had kept bigoted rulers

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[3] Priestley, Description of a New Chart of History, p. 17.

[4] Ibid., p. 18. Preceding phrases on p. 19.

[5] Priestley, Lectures on History, p. 540.

so busy that it "prevented their employing all their power to the extirpation of what they thought to be heresy; and by this means the propagation of truth has been greatly favoured."[6] War was more directly beneficial because conquests

> promoted such an intercourse between different nations, and have brought them so far acquainted with one another, as was requisite for curing their mutual prejudices, for improving their genius and tempers, and thereby laying a foundation for a sufficiently extensive benevolence.[7]

Most conquests had occurred when governments had become "very corrupt" and "a change of masters was necessary for the country." As well, fleeing scholars and interaction between the conquerors and the conquered had aided the spread of knowledge. Besides all this, Priestley argued,

> Considering what kind of persons compose the bulk of our modern armies, it may, without any hesitation, be said, that it is more than probable, in no other way [than dying in war] could they have done their country so much service.[8]

The evils of slavery were also not ignored by Priestley. In his Sermon on the Subject of the Slave Trade (1788) he used the estimate that approximately half a million blacks were brutally destroyed each year to supply the necessary slave labor for the West Indian plantations. He referred to the "shocking indecencies to which the females are subjected

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[6] Ibid., p. 542.

[7] Ibid., p. 544.

[8] Ibid., p. 539. For the spread of knowledge and the conditions under which most conquests had occurred, pp. 542-45.

. . . and the cruel separation of the nearest relations and friends."[9]

Nevertheless, as always, Priestley affirmed the "best of all possible worlds." He argued that if the only object of the great evils had been to form the "many noble characters" who were combatting them, they had served good purpose.[10] Besides, God's design in the system could not expect to be fully understood; we must be "satisfied that all evil is ultimately subservient to good."[11] Everything that occurred had its purpose in bringing the universe "to perfection by degrees"; "certainly the present state of things is preferable to any that is past."[12]

The ultimate expression of this optimistic cosmology came near the end of Priestley's life. He had long been interested in Biblical prophecy and had believed since early in his career that the restoration of the Jews to their homeland was not far off. In 1771 Priestley considered publishing an overview of this and other signs of the millennium in the books of Daniel and Revelations.[13] Although he did not then

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[9]Priestley, A Sermon on the Slave Trade, p. 8. The numerical estimate is on p. 5.

[10]Ibid., p. vi.

[11]Ibid., p. v.

[12]Ibid., p. 36.

[13]Priestley, [no month given, but from contents March or April] 27, 1771, to Theophilus Lindsey, "Priestley--Lindsey Letters."

commit his opinions to print, Priestley retained his interest and in his Lecture on History and General Policy remarked that "the grand catastrophe [was] growing nearer and nearer perpetually."[14] Stimulated by some passages in the latter part of Hartley's Observations on Man[15] and by world events in the wake of the French Revolution, Priestley in 1794 declared that present conditions coincided with those prophesied for the period shortly before the restoration of the Jewish nation and the second coming of Christ. In a Fast Day sermon before he left England that year, he claimed that the ten horns of the beast in the seventh chapter of Daniel represented the ten kingdoms growing out of the Roman Empire. The last great power, the little horn to arise after the ten, was the Papal States. The destruction of this power, which seemed at hand, was to signal the millennium.[16]

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[14]Priestley, Lectures on History, p. 528.

[15]Priestley printed the passages from Hartley that expressed these views on prophecy as an appendix to Joseph Priestley, The Present State of Europe Compared with Ancient Prophecies; A Sermon Preached at the Gravel Pit Meeting in Hackney, February 28, 1794, Being the Day Appointed for a General Fast. With a Preface Containing the Reasons for the Author's Leaving England (London: Printed for J. Johnson, 1794). Hartley, Observations, 2:368, 371, 375, 377, 450.

[16]Priestley, The Present State of Europe, pp. 6-8. The same argument can be found in "An Address to the Jews on the Present State of the World and the Prophecies Relating to It," in Joseph Priestley, A Comparison of the Institutions of Moses with Those of the Hindoos and Other Ancient Nations (Northumberland: A. Kennedy, 1799), pp. 399-401, and in Priestley, Notes on All the Books of Scripture, 2:538-49.

In his American years Priestley continued to predict in print the imminence of the millennium. Although he once expressed the fear that he might speculate too wildly in the Northumberland wilderness where he did not have the companionship of his English advisors,[17] Priestley nonetheless warned the Jews that they should prepare for their return. While he wrote that he did not "mean this year or the next, or the next twenty or thirty years," he told them that the state of Europe compared with prophecy provided "evident symptoms of the time of your deliverance being at hand."[18] Like Newton, Locke, and Hartley before him, Priestley apparently did not see anything inconsistent in his belief in prophecy. Not only was the ever-improving cause-and-effect mechanism the "best possible," it was soon to end in the millennium.

The last decade and a half of the life of Joseph Priestley were filled with a succession of misfortunes. The series of calamities that struck him from 1790 to his death provided many opportunities for him to reflect upon his optimistic view of the structure of the universe. While some of the more interesting recent work in intellectual biography perceptively explores the change in outlook that can result

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[17]Priestley, Northumberland, Aug. 12, 1795, to Theophilus Lindsey, "Priestley--Lindsey Letters."

[18]Priestley, "An Address to the Jews," p.397. Thomas Belsham, however, much later recalled a conversation with Priestley before he left England in 1794 in which Priestley predicted the millennium would come within twenty years; Brown, "The Religion of Joseph Priestley," p. 97.

from differing circumstances in the subject's life,[19] for Priestley there is little opportunity to do this; persistently to the end he reacted to misfortune by reaffirming both his optimism and his Hartleyan world view.

Before his death in 1804, Priestley suffered tragedies involving every member of his immediate family. Though the first misfortune in 1790 did not have the magnitude of later events, nonetheless it was a severe disappointment for Joseph Priestley.

In early 1787 Priestley's eldest son and namesake had gone to the Bradley ironworks of his uncle John Wilkinson. Soon to be nineteen, young Joseph was to learn the trade. Wilkinson, who was the older brother of Priestley's wife, was by then an immensely wealthy and internationally influential ironmaster, known both for his inventions and for his eccentricities and none too virtuous private life.[20] Wilkinson's only legitimate child (a married daughter) had died the previous year, and the Priestleys clearly had high hopes for their son's future with his uncle's firm. Wilkinson said that the training

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[19]See John R. Howe, The Changing Political Thought of John Adams (Princeton: Princeton University Press, 1966) and Anne Young Zimmer and Alfred H. Kelly, "Jonathan Boucher: Constitutional Conservative," Journal of American History 58 (1972) : 897-922.

[20]The genealogies in Appendix A may be of some assistance to the reader at various points in this chapter. Henry Winram Dickinson, "John Wilkinson," Beitrage zur Geschichte der Technik und Industrie; Jahrbuch der Vereines deutscher ingenieure 3 (1911) : 214-38.

was with the intention of giving their son the direction of the Bradley works.[21]

In late March 1789, young Joseph, still at the Bradley works, wrote to his uncle informing him of his intention to marry Elizabeth Ryland, daughter of the Birmingham merchant Samuel Ryland. Asking Wilkinson's approval and extenuating the fact that he had not told him earlier, Joseph explained that they were willing to wait "some years" before marrying.[22] Wilkinson approved of the marriage, and in September of the following year Priestley was busy negotiating the terms of matrimony with the bride's father, then still worth some £ 7,000 in capital after some large business reverses. At this point vague notions of young Joseph's future could no longer suffice. Priestley wrote to his brother-in-law asking for a specific commitment as to what Wilkinson planned for his nephew.[23] From this point on the

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[21]Priestley, Jan. 20, 1791, to John Wilkinson, "Wilkinson Letters"; W. H. Chaloner, "Dr. Joseph Priestley, John Wilkinson, and the French Revolution, 1789-1802," Royal Historical Society Transactions, 5th ser., 8:24. The latter, however, falls into error by accepting a much later story that Wilkinson had for a time adopted Joseph, Jr. as his heir; the Priestleys may well have hoped that would eventually come to pass. Wilkinson's will, which caused considerable litigation by another nephew, left everything to his mistress and his children by her.

[22]J[oseph] Priestley [Jr], March 26, 1789, to John Wilkinson, "Wilkinson Letters."

[23]Priestley, Sept. 2, 1790, to John Wilkinson, "Wilkinson Letters." As with most of the events in this chapter, only a few of the most pertinent of the voluminous Priestley letters dealing with the events will be cited. See esp. the Lindsey and Wilkinson correspondence.

youth's discontent with the ambiguous nature of his apprenticeship rapidly developed into a major difficulty for the Priestley family.

Wilkinson made what Priestley's son considered an entirely unsatisfactory offer for his future recompense. The ironmaster promised only £ 50 a year certain salary plus matching whatever the bride's father would give toward household expenses. In addition Wilkinson wanted his nephew to settle at the unsuccessful Bersham works in North Wales instead of staying at Bradley, where he was close to his father's liberal intellectual society.[24] Young Joseph decided to leave his uncle's employ, and, when Priestley agreed with his son's decision, feelings got so bad that by February 1791 Wilkinson would not correspond with Priestley, and handled affairs through his secretary.[25] Although a position leading to a mercantile partnership was eventually found for Joseph in Manchester,[26] Priestley's concern about providing for Joseph and Joseph's two younger brothers as

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[24]Priestley [Jr], Oct. 3, 1790, to John Wilkinson; Priestley, Oct. 11, 1790, to John Wilkinson, "Wilkinson Letters"; Priestley, Oct. 27, 1790, to Theophilus Lindsey, "Priestley--Lindsey Letters." The Bersham works had floundered since they opened in the 1720's under relatives of the Darbys of Coalbrookdale. See Dickinson, "Wilkinson," p. 219.

[25]Priestley, Feb. 25, 1791, to Wilkinson's secretary, "Wilkinson Letters."

[26]Priestley, Feb. 18, 1791, to Theophilus Lindsey, "Priestley--Lindsey Letters." The position was with a supposedly self-made merchant by the name of Ashworth. With the aid of his patrons Priestley hoped to enable his son to make a considerable investment in the firm. The arrangement failed due to political pressures after the riots.

well as the break in relations with Wilkinson caused him great distress. The famous chemist admitted to a weakness in being so much affected, but, he explained, "the disappointment is very great."[27] His anxiety, he wrote his closest friend, made him "almost ill and incapacitates me for any exertion."[28]

Trying as these difficulties were, they soon were an integral part of what Priestley considered clear evidence that it was "the best of all possible worlds." In July 1791, Priestley lost a large proportion of his earthly belongings and narrowly escaped with his life in the Birmingham "Church and King" Riots.[29] Priestley's ordeal brought an end to the worrisome break in relations with Wilkinson. He received what he described as a "kind letter" from his brother-in-law asking him to disregard "any losses that money can repair" and inviting the Priestleys to one of the Wilkinson houses. Priestley remarked, "One good thing has already come out of this evil."[30]

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[27]Priestley, Jan. 17, 1791, to Theophilus Lindsey, "Priestley--Lindsey Letters."

[28]Priestley, undated letter written shortly after Jan. 17, 1791, to Theophilus Lindsey, "Priestley--Lindsey Letters."

[29]See Chapter VI.

[30]Priestley, undated letter probably of Aug. 1791, to Josiah Wedgwood, Bolton, ed., Scientific Correspondence, pp. 113-14. Bolton's incorrect editorial remark on when and where this was written is picked up in Thorpe, Priestley, pp. 137-38, where much of the text is reprinted.

Priestley was sure that other good things would come from the riots. In his Appeal to the Public on the Subject of the Riots in Birmingham he publicly reaffirmed his faith "in the general system the great scope of which is general and infinite good."[31] In his reassertion of his credo, he quoted the dedication of his The Doctrine of Philosophical Necessity Illustrated: "Every event in life is a benefit." He went on to show that such riots would be instructive in demonstrating the evils of bigotry, intolerance, and the civil establishment of Christianity and would also show the need for an effective police force. Clearly the riots were beneficial.[32]

Although the riots renewed the family ties between the Priestleys and John Wilkinson, both those ties and finances continued to be strained for the rest of Priestley's life. Always dependent upon wealthy patrons,[33] several financial setbacks marred his last years. After the riots Wilkinson invested £ 10,000 in the French Funds for Priestley's benefit. When Priestley emigrated to America in 1794, Wilkinson allowed him to draw £ 200 annually until the French funds would become productive. Despite persistent efforts

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[31]Priestley, Appeal on Riots, pt. 1, p. xxi.

[32]Ibid., pp. xxi-xxii, xxiv-xxv.

[33]When Priestley first planned to become a minister his aunt Sarah Keighley, who had no children of her own, proposed to leave him with independent means. However, she left her funds to a handicapped niece and Priestley was never really financially independent. A few of Priestley's relationships with patrons are mentioned in the chronology in Appendix B.

by Priestley through French ambassadors to America and other agents, the French Funds never yielded any interest,[34] and Priestley continued to depend upon the £ 200 from Wilkinson to supplement his other patronage and holdings. The Priestleys over the years also received some financial assistance from John Wilkinson's brother William. This aid, though small compared to that from John Wilkinson, and family ties caused the Priestleys distress when the two Wilkinson brothers became involved in a bitter financial dispute at least as early as 1787. Priestley and his wife favored John Wilkinson in the family feud, but did not do enough in his behalf to please him when the matter went to court. The dispute between his brothers-in-law caused Priestley serious concern to the end of his days. In 1796 Wilkinson's secretary sent Priestley a bill for what he had already drawn and led Priestley to believe that his latest £ 200 draft might not be honored.[35] Although that did not

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[34]Much of the extensive material on the French Funds can be found in the "Wilkinson Letters." See also Chaloner, "Priestley, Wilkinson, and the French Revolution," pp. 28-29, and references in the "Priestley--Lindsey Letters." The whole matter of the French Funds was complex and involved John Wilkinson never having made full transference of the funds to Priestley's ownership as well as French fiscal policies. Priestley's son Joseph as late as 1815 was attempting to make something of these funds. See his letters of March 1, 1813 and May 24, 1813 to David Bailie Warden, Warden Papers, Maryland Historical Society and of May 18, 1815 to Albert Gallatin, Gallatin MSS, New York Historical Society.

[35]Priestley, Nov. 3, 1796, to John Wilkinson, "Wilkinson Letters." For the dispute between the Wilkinson brothers see Priestley, July 27, 1787, to Theophilus Lindsey, "Priestley--Lindsey Letters"; later references in the Lindsey and Wilkinson correspondence; the DNB article on Wilkinson,

then happen, Wilkinson did refuse to honor Priestley's 1803 draft.[36]

These years brought other financial problems for Priestley. Living in America turned out to be a good deal more expensive than he had imagined. For example, Priestley found his house in Northumberland was fully twice as expensive to complete as his wife's original estimates. About 1800 John Vaughan, who held all of Priestley's funds in America, went bankrupt. Although Vaughan had provided a land guarantee for Priestley's funds and attempted to secure $500 per annum for Priestley from his own creditors, Priestley was still concerned that he would be unable to pay his debts. Priestley's assets of about $110,000 were considerably more than his debts; nevertheless, the difficulties of converting land into cash meant that in his last years he did not have as much money as he wished for printing his works and for other purposes.[37]

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and Dickinson, "Wilkinson," pp. 232-33. The latter, however, incorrectly assumes developments in 1793 were the beginning of the quarrel.

[36]Priestley, Jan. 1, 1803, to Theophilus Lindsey, "Priestley--Lindsey Letters." Although Priestley did not live long enough to hear of it, Priestley's English friends set up an annual subscription for his benefit that would have more than offset his £ 200 loss.

[37]Priestley, Jan. 13, 1800 to John Vaughan, and a manuscript account book (probably 1801), Joseph Priestley Collection, Pattee Library, The Pennsylvania State University. See also the many references in the Wilkinson and Lindsey correspondence.

In his will Priestley left everything to his son Joseph with the following exceptions: £ 10 each to his brothers Timothy and Joshua and his sister Martha Crouch for suits of mourning and 2 annuities of £ 60 per year to go to trustees for his daughter and her children and for his son

The financial anxieties of Priestley's last years, however, were minor compared to the chain of major misfortunes that began in 1795. The death of his youngest son Henry in December of that year was but the first of a rapidly occurring series of tragedies for Joseph Priestley.

Harry, as Priestley called his young son, had turned eighteen in May. Earlier Priestley had hoped that John Lee or Thomas Brand Hollis would provide for Henry's education as a minister and scholar so that he might succeed his father.[38] Instead, after the Priestleys had emigrated to America, he had taken up what his father had referred to as "the drudgery of a common farmer."[39] Priestley was quite proud of the way his youngest adjusted to changed circumstances and of the "unremitting labour, as well as good judgment" he showed in working along with those "that worked

William's wife and her children. Neither his son-in-law William Finch nor his son William (see below) were to get their hands on any of the money. Priestley thought the £ 60 was equivalent to the interest on a third of his estate. The will, dated Jan. 12, 1802, with 2 codicils, is in the above mentioned Joseph Priestley Collection and was printed in Edgar Fahs Smith, Priestleyana (Philadelphia: Privately printed, 1923), pp. 4-8, and in Ronald A. Martineau Dixon (of Thearne), "Priestley's Daughter and her Descendants," Unitarian Historical Society Transactions 5 (1931-34) : 53-57.

Priestley's repeated discussions of his financial woes (and of his inability to publish his Comparisons of the Institutions of Moses) establish beyond doubt that the Comparison was not published until 1799 and that the 1797 edition listed in Evans (and from that listing in other bibliographies) is a ghost.

[38]Priestley, Feb. 8, 1791, to Theophilus Lindsey, "Priestley--Lindsey Letters."

[39]Priestley, Dec. 17, 1795, to John Wilkinson, "Wilkinson Letters."

under him." Harry had nearly finished a small stone house on his farm, and some thought he had become ill from staying up nights at the lime kiln making mortar for that undertaking. Both frequent colds from being out in the cold and wet and the ague that had been prevalent the preceding summer had struck him, but he had recovered. In early December he appeared at his father's house feeling ill; he rapidly grew worse, dying on the eleventh. The shock, Priestley wrote his friend Lindsey, was very great, and he added that he was "affected more than I thought I should have been."[40]

Nine months later Priestley buried his wife. Mary Wilkinson Priestley had long had spells of illness in which she coughed up blood. Seven years before Priestley had become quite alarmed when he perceived "many consumptive symptoms,"[41] but she recovered. Despite periodic illness, his wife continued to take total care of the worldly concerns of running the Priestley household, leaving her husband free for his intellectual pursuits.

Mary Priestley was a strong woman. Married for thirty-four years to a man who devoted much of his energies

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[40]Priestley, Dec. 17, 1795, to Theophilus Lindsey, "Priestley--Lindsey Letters." Harry Priestley, on account of his early death and his virtue (stressed by his father both before and after his death), became a natural subject in nineteenth-century fiction about the Priestleys. Harriet Martineau in Briary Creek had backwoodswomen protecting his grave at night from predatory animals; GATH (George Alfred Townsend) invented a romantic involvement with an epitome of worldliness Mrs. Reynolds (Hamilton's mistress) in Mrs. Reynolds and Hamilton; a Romance.

[41]Priestley, Oct. 29, 1789, to Theophilus Lindsey, "Priestley--Lindsey Letters."

to theology, she did not believe in an afterlife and had "the most rooted aversion" to his preaching and other ministerial activities. His wife's scepticism was disturbing to Priestley, but he acknowledged that she had "attained the end, the most benevolent and disinterested disposition I ever knew, with but little of the means [i.e. religious beliefs]."[42] A thrifty woman, she had made clothes for herself and her children and expected high standards of her servants, whom she often found unsatisfactory and therefore dismissed. Partaking little in the religious piety that Priestley considered the usual motivation for virtue, Mary Priestley nonetheless was kind, generous, and level-headed as well as strict and hard working.[43]

Mrs. Priestley had been much affected by Harry's death, but despite recurrent periods of illness she had been able to take charge of planning the clapboard Palladian house they were building in Northumberland.[44] Unfortunately she

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[42]Priestley, Feb. 20, 1797, to Theophilus Lindsey, "Priestley--Lindsey Letters." The pertinent section of this letter, like many passages of interest to this chapter, was edited out in John Towill Rutt's printed version in his Works of Priestley.

[43]This composite portrait is taken mainly from the following: the good recollections of a woman who had been their servant at Birmingham (Mrs. Dalton) in Corry, Priestley, pp. 46-47; Mary Priestley, Aug. 26, 1794, to William Vaughan, and a number of Priestley's letters to Theophilus Lindsey, all in "Priestley--Lindsey Letters"; Priestley, Sept. 19, 1796 and Jan. 25, 1797, to John Wilkinson, "Wilkinson Letters"; and Priestley, Nov. 1, 1796, to William Vaughan, Bolton, ed., Correspondence of Priestley, pp. 151-52.

[44]Despite the too tall chimneys, the plan both in the interior and exterior was clearly Palladian. The typical

did not live to move out of the temporary residence they had purchased and whose walls she had papered with her own hands. After a fever that left her nearly senseless for about two weeks, Mary Wilkinson Priestley died on September 17, 1796, at the age of 54.

For Priestley this was "a much heavier stroke"[45] than the death of his son. He admitted to his closest friend that he "never stood in more need of friendship than now,"[46] and wrote to his brother-in-law that he was "quite unhinged." Accustomed to reading and writing with her sitting near him, and often reading to her, Priestley four months later bemoaned, "I miss her everywhere."[47] And yet the next few years were to bring more severe trials for Joseph Priestley.

The next calamity struck Priestley's only daughter. In the spring of 1797 Sarah Priestley Finch, his eldest child, was about to give birth to the sixth of her seven children. The Finches had long lived at Heath near

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Palladian wings were respectively Priestley's laboratory and the kitchen. The window treatment of the main entry was in the more au courant Adams style. Nineteenth-century additions of shutters and a Victorian porch, plus the removal of the roof railing destroyed the original appearance, but the house has recently been restored and is preserved by the state of Pennsylvania as an historical landmark.

[45]Priestley, Sept. 19, 1796, to John Wilkinson, "Wilkinson Letters."

[46]Priestley, Sept. 19, 1796, to Theophilus Lindsey, "Priestley--Lindsey Letters."

[47]Priestley, Jan. 25, 1797, to John Wilkinson, "Wilkinson Letters."

Birmingham, but now her husband had gone bankrupt, all the family belongings were about to be sold, and it was not clear where the birth would take place. For Priestley, his daughter's problems because of Finch's insolvency were "the cause of more sensible affliction to me than almost anything that ever befell me."[48]

Sarah Priestley, called Sally by the family, had married William Finch in 1786.[49] After the wedding the Priestleys remained emotionally close to their daughter. The Finch's residence at Heath was only a few miles from their Birmingham home, and Mrs. Priestley, especially, spent a lot of time with her daughter. Both Priestley and his wife were considerably upset when Mr. Finch refused to bring his family to America when the Priestleys emigrated. Finch, who had been involved in business in some way with John Wilkinson,[50] was considered a very bad businessman by Priestley, although it was a consolation that the problem was folly, not vice. At any event, now his daughter and her children were in indigent circumstances. Priestley felt his

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[48]Priestley, Sept. 17, 1797, to Theophilus Lindsey, "Priestley--Lindsey Letters." The child was Lucy Finch, born May 21, 1797 (see Appendix A). For an extensive account of this branch of Priestley's descendants see Dixon, "Priestley's daughter."

[49]There is contradictory evidence on this date, but probably January 1786.

[50]At the time of the problems over Joseph, Jr., Wilkinson evidently gave Finch direction of the Bradley works. Priestley, undated letter probably a few days after Jan. 17, 1791, to Theophilus Lindsey, "Priestley--Lindsey Letters." Finch, according to Priestley, "unjustly and so grossly insulted" Wilkinson at the time of the bankruptcy. Priestley, April 1, 1797, to John Wilkinson, "Wilkinson Letters."

distance from England more than ever before. He feared that, despite her "great fortitude and piety," she might "quite sink under the trial."[51] Mrs. Barbauld and John Wilkinson gave Sally some help, and Priestley set up a modest trust for her and her children,[52] but Sally's trials continued to be a major worry. When she died of tuberculosis in late 1803, although he was concerned about the children, Priestley could not grieve for Sally; her only prospect had been one of ever increasing trouble.[53]

Finances also played a part in the worst of the calamities to strike Joseph Priestley; economic jealousy and need were central in the motivation of the most disquieting actions of Priestley's second son William. While conscious withholding and destruction of evidence prevent definite knowledge of what occurred, Priestley seems to have believed that in the spring of 1800 his son William tried to murder him. Whether such a horrible event actually occurred or not,

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[51]Priestley, Sept. 14, 1797, to Theophilus Lindsey, "Priestley--Lindsey Letters."

[52]Ibid. and Priestley, July 17, 1800, to John Wilkinson, "Wilkinson Letters." The arrangements for the £ 1200 trust (put in the four per cents to the amount of £ 1430.14 with Matthew Boulton, Samuel Galton, and William Vaughan as trustees) are printed in Dixon, "Priestley's Daughter," pp. 58-59. For the similar trust for her in his will see footnote 37 above. For Mrs. Barbauld see pp. 51-52 above.

[53]Priestley, Nov. 4, 1803, to Theophilus Lindsey, "Priestley--Lindsey Letters." Part of this letter appeared in Appendix 3 of Belsham, Life of Lindsey, pp. 377-79, but an unfavorable reference to Finch ("with such a father") was omitted.

William's behavior at this time was "the greatest of all" in the series of trials endured by Joseph Priestley.[54]

William had long been a source of concern for the Priestleys. At the time of Priestley's great anxiety over finding a situation for his eldest son Joseph, he had also been trying to provide for William's future. William, like his older brother, had spent time in Europe and acquired skill in foreign languages.[55] Although it was successively expected of each of them, neither John Wilkinson, nor his brother William (after whom young William had been named) were willing to employ their young nephew. William, who worried his parents by being in France at the time of the outbreak of the French Revolution, was recognized by them to have problems with his temper and "high spirit."[56]

By the end of 1795, however, Priestley was becoming more pleased with his troublesome son. William had spent a year in Boston; on his return his father remarked that his character was "better than I expected."[57] William shared his younger brother Harry's farm and married a farmer's

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[54]Priestley, April 30, 1801, to John Wilkinson, "Wilkinson Letters."

[55]Priestley, Sept. 2, 1790 and Oct. 11, 1790, to John Wilkinson, "Wilkinson Letters."

[56]Priestley, Oct. 13, 1790, to Theophilus Lindsey, "Priestley--Lindsey Letters." See also other scattered references in the Lindsey and Wilkinson correspondence.

[57]Priestley, July 12, 1795, to Theophilus Lindsey, "Priestley--Lindsey Letters."

daughter whom the Priestleys at first liked. Although of no wealth, she was used to farming and sensible. William seemed to be accepting his situation, so different from the one for which he had been educated, with the proper spirit. Indeed his father thought that he worked too hard. In January 1797, William was found nearly frozen to death when he attempted to walk to Philadelphia, but he recovered.[58]

Nonetheless, by September 1799, a feud developed between the families of Priestley's two remaining sons, Joseph and William. Joseph and his family were living with Priestley and running the household in the large new Priestley home. (Priestley throughout his life had almost nothing to do with such mundane affairs.) William and his wife became so jealous of Joseph that William wrote to his sister in England to complain about him. By this time the families were on very bad terms, and Priestley saw very little of William, who was having difficulties managing his farm.[59] Soon William ran heavily into debt. Although Priestley wanted to help him, his own finances were not in good shape. He asked his friend Theophilus Lindsey to try to get his son assistance from William Wilkinson.

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[58]Priestley, Jan. 25, 1797, to Theophilus Lindsey, "Priestley--Lindsey Letters," and a number of other scattered references in this correspondence.

[59]Priestley, Sept. 12, 1799, to Theophilus Lindsey, "Priestley--Lindsey Letters." For the rest of the paragraph see the additional letters to Lindsey of Jan. 9, 1800 and May 9, 1800 and Priestley, Jan. 3, 1800, to John Vaughan, Joseph Priestley Collection, Pattee Library.

What happened next can only be inferred from the surviving evidence. On May 9, 1800, Priestley wrote his closest friend Lindsey, to whom he normally told all, that he had trials of which he could not write.[60] In America, however, the news was already out. On April 14, Priestley, his daughter-in-law, two grandchildren, and two servants had all become deathly ill. Only a few days later a letter "from a respectable gentleman in Northumberland" appeared in the Weekly Advertiser of Reading, a strongly Federalist paper. The letter insinuated that Priestley's son William (like his father "so full of French Principles" as not to be sane) had tried to murder his father. Before the end of the month this story reached the Philadelphia papers as well.[61] William had left Northumberland and was never to return. He replied to the charges with a letter denying the deed and stressing that since he was dependent on his father for his day-to-day needs and did not expect an inheritance, it surely would have been a mistake to kill his father. Priestley himself responded that only tartar emetic, not arsenic, was found in the flour and "therefore no real mischief has been done." Priestley blamed the newspaper account on "the malignity of party spirit."[62]

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[60] Priestley, May 9, 1800, to Theophilus Lindsey, "Priestley--Lindsey Letters."

[61] Weekly Advertiser of Reading, April 26, 1800; Philadelphia Federal Gazette, April 29, 1800; Aurora General Advertiser, May 1, 1800.

[62] Weekly Advertiser of Reading, June 8, 1800; Aurora General Advertiser, June 7, 1800. Priestley's letter of denial bore the date May 13.

Despite Priestley's equivocal public denial, what evidence was not destroyed seems to tell another story. After Priestley finally did send Lindsay "some hints of the afflicting story of my son Wm.," the relevant pages of the letter were destroyed. References that remain, however, indicate that William had indeed done something awful. "He has the greatest concern for his wife and children," Priestley reflected in another letter. "This, indeed, was that which overpowered every other consideration. . . ."[63] Surely, at least for a time, Priestley did believe that he had been poisoned, for in reference to another missing piece of evidence he wrote, "In my last I mentioned our preservation from poison. . . ."[64] Priestley hoped that his brother-in-law would not hear what William had done, but despite the "deep wound" could not "help feeling as a father." Priestley did not want to ever see his son again and never did, but said he felt "more compassion than resentment on his account."[65] Perhaps William thought tartar emetic would be sufficient for his feeble father's death; perhaps we shall

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[63] Both of the quotes above in this paragraph came from Priestley, Oct. 16, 1800, to Theophilus Lindsey, "Priestley--Lindsey Letters." The "some hints" quote refers to the letter of Aug. 13, 1800 (now a fragment) in the same collection.

[64] Priestley, May 10, 1800, to George Thatcher, Massachusetts Historical Society Proceedings, 2d ser., 3:37-38.

[65] Priestley, Oct. 16, 1800, to Theophilus Lindsey, "Priestley--Lindsey Letters." It is interesting that the poisoning story circulated enough that Cuvier in Paris heard of it and reported in his eulogy before the Paris Academy of Science in 1805 that Priestley's death had been by poison.

never know what happened. The very fact that evidence had been suppressed and destroyed, suggests the severity of what had occurred. In any case, to Priestley's mind, he had endured "the greatest of all" his trials.

Pain, as well as calamity, marked the last years of Joseph Priestley. In 1780 Priestley had a severe attack of gall stones.[66] Recurring bouts of suffering with them alternated with painful dental problems for at least his last fifteen years. In 1801 during a visit to Philadelphia, a fever caused serious alarm, but Priestley survived despite bleedings by his friend Benjamin Rush. May 1803, brought a hip injury, but Priestley refused to become an invalid and walked without aid once more. By his last year Priestley had only a couple of painful teeth, was losing his hearing, and could keep almost no food in his stomach, regurgitating nearly everything he ate. The last fifteen years of the life of Joseph Priestley almost evoke the plot of a cheap melodrama, and yet this frail tenacious man persisted, working in good spirits.[67]

"My only source of satisfaction," he wrote just three months before his death,

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[66]B[enjamin] Vaughan, June 28, 1780 to Benjamin Franklin, Bache Collection of Franklin Papers, American Philosophical Society (microfilm in the Clements Library). Priestley was treated by John Fothergill.

[67]Priestley gave his friend Lindsey quite complete reports on his health; these, along with the Wilkinson and other correspondence, provide much of the information for this paragraph.

> and it is a never failing one, is my firm persuasion that every thing, and our oversights and mistakes among the rest, are parts of the great plan, in which every thing in time will appear to have been ordered and conducted in the best manner.[68]

In the face of great tribulations and pain, Priestley might have been expected to have altered the optimistic world view that had permeated and informed all of his thought. He did not do so. Instead his cosmology was a constant source of comfort through all of his trials. Thoroughly absorbed as he always was in his intellectual pursuits, his personal tribulations did not alter his affirmation, "Whatever is, is right."

When his son Henry died, he had written to his brother-in-law that "the dispensations of providence . . . , I doubt not, are always right and just."[69] On the occasion of his wife's death, he affirmed that it could not be doubted that Providence "orders every thing for the best."[70] When his son-in-law's bankruptcy added to his woes, he asserted,

> Looking to the <u>first cause</u>, we give up, in a great measure, our resentments with respect to all secondary causes of our troubles, and look forward with hope and confidence to the happy termination of them.[71]

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[68] Priestley, Nov. 4, 1803, to Theophilus Lindsey, "Priestley--Lindsey Letters."

[69] Priestley, Dec. 17, 1795, to John Wilkinson, "Wilkinson Letters."

[70] Priestley, Sept. 19, 1796, to Theophilus Lindsey, "Priestley--Lindsey Letters."

[71] Priestley, Sept. 14, 1797, to Theophilus Lindsey, "Priestley--Lindsey Letters."

Reflecting on his great trial concerning his son William, he noted that when he was most upset in addition to his daily reading in the Scriptures he reread certain sections of Hartley. The Observations on Man, he remarked, was a "never failing recourse" when troubles most pressed him.[72] Examples of Priestley's reaffirmation of his credo might be cited almost ad infinitum. His voice asserted it even from beyond the grave. In a sermon which he had intended for delivery at Philadelphia and which, as he desired, was published after his death he declared, "happiness greatly exceeds the misery that is so much complained of."[73] Despite the misfortunes of life, Joseph Priestley tenaciously affirmed that it was "the best of all possible worlds."

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[72]Priestley, May 9, 1800, to Theophilus Lindsey, "Priestley--Lindsey Letters." While Priestley's optimism seems almost ludicrous, it was, as Basil Willey pointed out (Eighteenth Century Background, p. 154), an important element in Hartley's system.

[73]Joseph Priestley, "On Faith and Patience," Four Discourses Intended to Have Been Delivered at Philadelphia (Northumberland: John Binns, 1806), p. 28.

CHAPTER VIII

UNTIL FORGOTTEN

A SKETCH OF THE INFLUENCE OF JOSEPH PRIESTLEY

During a serious illness in 1801, Joseph Priestley was flattered by Thomas Jefferson's appraisal, "Yours is one of the few lives precious to mankind."[1] After Priestley's death, Jefferson wrote to Thomas Cooper, "In religion, in politics, in physics, no man has rendered more service [than Priestley]."[2] John Adams, on the other hand, in instructing his Secretary of State Timothy Pickering not to deport Priestley under the Alien Law, offered the opinion, "His influence is not an atom in the world."[3] As these examples help to demonstrate, the whole matter of attempting to trace

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[1] Tho[mas] Jefferson, Washington, March 21, 1801, to Joseph Priestley, Ford, ed., Works of Jefferson, 9:216-19. Priestley was proud of his correspondence with Jefferson and sent copies of several letters from Jefferson to England to his brother-in-law John Wilkinson and to his closest friend Theophilus Lindsey. Thus this letter was printed in Thomas Belsham, Memoirs of the late Reverend Theophilus Lindsey (London: J. Johnson and Co., 1812), pp. 372-74, and a copy that was sent to Wilkinson is in the "Wilkinson Letters."

[2] Thomas Jefferson, Washington, July 9, 1807, to Thomas Cooper, Ford, ed., Works of Jefferson, 10:450-51.

[3] John Adams, Quincy, August 13, 1799, to T. Pickering, Charles Francis Adams, ed., The Works of John Adams, Second President of the United States, 10 vols. (Boston: Little, Brown, and Co., 1850-6), 9:13-14.

the influence of a man's thought on his own and later generations is laden with pitfalls and insuperable difficulties. Nonetheless, without some consideration of this question it is impossible for the mind's eye to fit Priestley meaningfully into the historical continuum. The broad outlines of the impact of Joseph Priestley, which can be discerned despite the inherent problems in such undertakings, demonstrate that Priestley was indeed a figure of considerable importance.

In the second half of the twentieth century an American is likely, as often as not, to meet a blank stare when he mentions that the subject of his scholarship is Joseph Priestley. Some persons remember something about oxygen from a chemistry course: beyond that, very few know anything about Priestley. Such has not always been the case. While the extent to which a figure is known is surely not the same thing as a measure of the importance of his influence, it does provide a first preliminary skirmish with the question of Priestley's significance.

As late as the 1820's and 30's Joseph Priestley was known in the United States as a "celebrated writer."[4] When Robert Rantoul in his version of the Jacksonian argument in 1833 advocated a broad definition of the "workingman" he included Priestley with Stephen Girard, Newton, Franklin, Washington, Shakespeare, and Fulton as one of those who

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[4]William Waller Hening, The Statutes at Large; Being a Collection of all the Laws of Virginia, 13 vols. (New York: R. & W. G. Bartow, 1809-23), 1 (1823) : iii-iv. Hening also used a Priestley quote on the title pages of the set.

surely belonged within the limits of this more inclusive category.[5] Priestley's Lectures on History were cited in such places as an 1838 memoir for a deceased member of the Massachusetts Historical Society,[6] and even later in 1853 Melville included a reference to "'Edwards on the Will,' and 'Priestley on Necessity'" in a short story, "Bartleby the Scrivener."[7] Numerous references such as these indicate that even in the adopted country of his last years Priestley's fame was not quick to die.

Because Priestley's reputation today has lost almost all its late-eighteenth-century brilliance, we need to bring into focus the position Joseph Priestley occupied in the galaxy of Enlightenment figures. Before examining the impact of specific areas of Priestley's thought on Western culture at the end of the Enlightenment period, it will be helpful to recapture an image of the magnitude of his fame in Anglo-America in his own day. The single episode that best provides a perspective on the eminence to which Priestley's work had brought him and from which his writings gained in influence is his move to the United States in 1794. Indeed,

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[5]Marvin Meyers, The Jacksonian Persuasion; Politics and Belief (Stanford: Stanford University Press, 1960), p. 216.

[6]Rev. W. Jenks, D.D., "Memoir of the Rev. Abiel Holmes, D.D., LL.D., &c.," Massachusetts Historical Society Collections, 3d ser., 7 (1838) : 270.

[7]Herman Melville, Selected Tales & Poems, ed. Richard Chase (New York: Holt, Rhinehart, and Winston, 1950), p. 121.

Priestley's emigration had more than a little of the epic quality of the lines composed for the event by Coleridge, then a young Priestley disciple:

> Lo! PRIESTLEY there, Patriot, and Saint, and Sage
> Whom that my fleshly eye hath never seen
> A childish pang of impotent regret
> Hath thrilled my heart. Him from his native land
> Statesmen, blood-stained, and priests idolatrous
> By dark lies maddening the blind multitude
> Drove with vain hate. Calm, pitying he retired,
> And mused expectant on these promised years.[8]

Priestley had considered moving to the United States as early as 1772 or 1773. In making a difficult decision whether or not to become Lord Shelburne's librarian, Priestley in 1772 had asked for advice from his good friend Benjamin Franklin. Franklin had replied in a letter suggesting his famous "Moral or Prudential Algebra" as the best way to calculate the advantages or disadvantages of any decision. He encouraged Priestley to list all the pros and cons of the situation in two parallel columns, crossing out factors or groups of factors of equal weight, and thus find if the balance was favorable over-all.[9] Franklin also assisted Priestley by inquiring of John Winthrop, Hollis Professor of Mathematics and Natural Philosophy at Harvard, about a college position in the United States. Winthrop

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[8] From his long poem "Religious Musings," as originally published in 1796; a later version of the lines differs somewhat. Samuel Taylor Coleridge, The Poetical Works, ed. Ernest Hartley Coleridge (London: H. Frowde, 1912), p. 123. For a sonnet on Priestley sent to Southey Dec. 17, 1794, see p. 81. See below for Priestley and these literary figures.

[9] B. Franklin, London, Sept. 19, 1772, to Dr. Priestley, Albert Henry Smyth, ed., The Writings of Benjamin Franklin, 10 vols. (New York: The Macmillan Co., 1905-7), 5:437-38.

admired Priestley's "comprehensive genius, his perspicuity and vigor of composition, his indefatigable application and his free and independent spirit," but, as Priestley had feared, he was informed that his unorthodox religious views would prevent a field of useful endeavor in any American college.[10]

Twenty years later, the desire to be useful was one of the major considerations, too, in Priestley's final decision to leave his native land. After the Birmingham Riots in 1791 Priestley, as might be expected, had given serious thought to leaving England. At that point, however, his focus was more on France than on the United States.[11] By early 1793 Priestley was considering following his three sons to the United States. There, he felt, he could yet be publicly useful, while if he remained in England the increasing persecution of dissent led him to fear that he would be unable to freely continue his lifetime activities of preaching and publishing. In America fluency of language would not pose the barrier that it would have in France, and the freedom of the American republic would allow him to pursue his intellectual endeavors.[12]

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[10] John Winthrop, Cambridge, March 4, 1773, to Benjamin Franklin, Schofield, ed., Scientific Autobiography, pp. 114-16, and Priestley, Calne, Sept. 26, 1773, to Benjamin Franklin, ibid., pp. 141-43.

[11] Priestley, Preface, The Present State of Europe, pp. iii-iv; Priestley, Clapton, Oct. 2, 1792, to William Withering, Schofield, ed., Scientific Autobiography, pp. 264-65.

[12] Priestley's long public explanation of the motivation behind his decision to emigrate to the United States is

In the summer of 1793 there were indications that a mass emigration comparable to the wave of Puritans of the 1630's might be in the offing. Some light is cast on Priestley's importance by the fact that he was seen by some as a possible Moses for such an exodus. Priestley himself frequently drew the comparison between the 1790's and England in the 1630's when discussing the situation in Great Britain that culminated in the Pitt government's suspension of habeas corpus in 1794. He wrote to an American convert to his religious views that the number of friends of religious and civil liberty who wished to leave England was "hardly credible."[13] An agent attempting to sell William Bingham's Maine lands resolved to pay particular attention to Joseph Priestley because the agent felt Priestley might be a major leader in case "the dissenters might emigrate in a body."[14]

Priestley did not become the patriarch of any such large-scale exodus from the British isles, but he, along with significant numbers of other dissenters from the established church and persons on the "radical" end of the British

to be found in his preface to The Present State of Europe. His private correspondence shows the same mixture of motives, including the desire to remain active and useful in his pursuits, the fear of the increasing bigotry and persecution in England, and the desire to be near his sons.

[13]Priestley, Clapton, Aug. 21, 1793, to George Thatcher, Massachusetts Historical Society Proceedings, 2d ser. 3 (1886-7) : 16.

[14]W. Jackson, London, Aug. 1793, to William Bingham, Frederick S. Allis, Jr., ed., William Bingham's Maine Lands, 1790-1820, Colonial Society of Massachusetts Publications, vol. 36 (Boston: Colonial Society of Massachusetts, 1954), pp. 288-95.

political spectrum, did choose to link his fate with that of the new United States. "The increasing spirit of bigotry encouraged by the court," Priestley explained to Jedediah Morse, was the chief cause of British emigration.[15] America gained such talents as Priestley, Thomas Cooper, Joseph Gales, John Binns, and Harry Toulmin among many others in the boatloads that left a Britain whose politics were moving to the right in the wake of the French Revolution. "These all flee the country as in Laudean times," wrote Priestley's friend Lindsey in 1795.[16]

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[15]Priestley, London, Aug. 24, 1793, to [Jedediah Morse], Misc. MSS, New York Historical Society. The letter is printed in William B. Sprague, The Life of Jedediah Morse (New York: W. Bonker, 1876), pp. 204-5. See also Priestley, Clapton, April 15, 1793, to Doctor Withering, Schofield, ed., Scientific Autobiography, pp. 265-66: "Such is the spirit of bigotry encouraged by the Court party, that great numbers are going to America. . . ."

[16]The present author plans a separate study of the English émigrés of the 1790's. The extent of this short-lived movement, which has never had adequate historical coverage, can be seen in: John Dewhurst, London, April 1, 1794, to Alexander Hamilton, Harold C. Syrett, ed., Papers of Alexander Hamilton (New York: Columbia University Press, 1961--), 16:229; Theophilus Lindsey, extract of a letter of March 10, 1795, to William Tayleur, Herbert McLachlan, "More Letters of Theophilus Lindsey," Unitarian Historical Society Transactions 3 (1923-6) : 374; and Priestley's letter of Jan. 9, 1794, to John Wilkinson, "Wilkinson Letters" (which tells of plans by two congregations to emigrate). In seeing his sons off Priestley had noted, "It is crowded with passengers as is every other ship that sails for America"; Priestley, Clapton, Aug. 19, 1793, to John Wilkinson, "Wilkinson Letters." Harry Toulmin's The Western Country in 1793; Reports on Kentucky and Virginia, ed. Marion Tinling and Godfrey Davies (San Marino: The Henry E. Huntington Library and Art Gallery, 1948) was written for his dissenting meetinghouse in Chowbent, Lancashire, members of which planned to emigrate and contributed to his expenses. There are errors in the DAB article on Toulmin.

When the time came for Priestley to leave in April 1794, it was as an individual émigré, not as the leader of a mass movement. Nonetheless, Priestley's emigration to America approached being a major Anglo-American event. Horace Walpole, for one, thought England better off when "such execrable wretches as Dr. Priestley" left,[17] and others of a conservative bent from such distant points as Halifax and Virginia agreed that England would be quieter without him.[18] Only Priestley's son Joseph, Joseph's wife, and a few friends were present when Priestley and his wife stepped ashore at the Battery in New York on June 4, 1794, but the next morning saw the beginning of an adulatory reception. At Mrs. Loring's lodging-house, where he was staying, Priestley received the welcoming homage of Governor Clinton, the Episcopal bishop of New York, the heads of Columbia College, and most of the principal merchants. In the next few days delegations from the Democratic Society, the Tammany Society, the Associated Teachers of New York, the Medical Society, and the Republican Natives of Great Britain and Ireland presented Priestley with formal addresses of

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[17]Horace Walpole, Berkeley Square, March 23 and 24, 1793, to Hannah More, W. S. Lewis, ed., The Yale Edition of Horace Walpole's Correspondence (New Haven: Yale University Press, 1937--), 21:382-87 (at pp. 385-86); the quoted phrase comes from an earlier letter to William Nares of Dec. 14, 1792 (15:236).

[18]Andrew Brown, Halifax, Aug. 20, 1794, to Rev. Dr. Jeremy Belknap, Massachusetts Historical Society Collections, ser. 6, 4:575-78; Robert Beverly, Blandfield, Aug. 22, 1794, to William Beverly, The Virginia Magazine of History and Biography 21 (1913) : 100-102.

welcome.[19] Amidst considerable newspaper coverage, Priestley replied with carefully worded statements in which he consciously avoided entanglement in the political controversy over the emerging Democratic-Republican societies. Both these societies and some Federalists tried to enlist Priestley's prestige in their causes,[20] but Priestley's New York stay remained a time of extravagant praise and welcome, not advocacy and involvement. For two weeks the Priestleys were dined in the best of New York society; Governor Clinton

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[19]A full account is in Henry Wansey, The Journal of an Excursion to the United States of North America, in the Summer of 1794 (Salisbury: J. Easton, 1796), pp. 85-87, 198-200. Wansey, a Wiltshire clothier who retired early to devote himself to antiquarian research and travel, spent some time with the Priestleys during part of their New York stay and was of Unitarian sympathies. See also Priestley's account in a letter to his brother-in-law: Priestley, New York, June 14, 1794, to John Wilkinson, "Wilkinson Letters." The addresses and Priestley's replies can be found in the American Minerva and New York Advertiser, June 6, 7, 10-12, and 17, 1794 and reprinted: in an appendix to Wansey, pp. 261-83; in pt. 2 of vol. 1 of Rutt, ed., Works of Priestley; and in Smith, Priestley in America, pp. 22-40. Smith's little book is far from an adequate treatment of his subject, though it does print some of the sources.

[20]See Priestley, June 15, 1794, to Theophilus Lindsey, "Priestley--Lindsey Letters," for a statement of the desire to stay out of the political fray, as well as the replies cited in footnote 19. For the Federalist attempt see the letter to Priestley, American Minerva, June 12, 1794, p. 3 and the comment on his reply to the New York City Democratic Society Address in the same paper, June 7, 1794, p. 3. Previous scholars have noted how both sides of the party conflict tried to use Priestley; see William Muller, "First Fruits of Republican Organization," Pennsylvania Magazine of History and Biography 63 (1939) : 135, note, and esp. Alfred F. Young, The Democratic Republicans of New York; the Origins, 1763-1797 (Chapel Hill: Institute of Early American History and Culture, 1967), pp. 410-11. (Young is in error about a return visit to New York which Priestley contemplated, but never made).

was "particularly attentive" and Priestley especially enjoyed the company of General Horatio Gates.[21] The Priestleys left New York City on June 18. Despite not being invited to preach and some harshly anti-Unitarian Trinity Sunday sermons, Priestley had indeed "been received in a manner very flattering to me. . . ."[22]

The reception accorded Priestley on his arrival in America is but one illustration of the high place which he occupied in the late-eighteenth-century Anglo-American world. We can envision this greying scholar being shown Princeton,[23] and dining with the Secretary of the Treasury Alexander Hamilton in Philadelphia[24] as he and eleven casks, fifty-six cases, seven crates, six trunks, four boxes, two hampers, one chest, an elegant silver inkstand (presented "on his departure into Exile" by three Cambridge students), and miscellaneous furniture[25] slowly progressed to their last

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[21]Priestley, June 15, 1794, to Lindsey, cited in note 20; Wansey, Journal, pp. 198-99.

[22]Priestley, June 14, 1794, to Wilkinson, cited in note 19.

[23]David English, Princeton, June 20, 1794, to Charles D. Green, Journal of Presbyterian History 38 (1960) : 125.

[24][Alexander Hamilton], note, [June 27, 1794], to Tench Coxe, Syrett, ed., Papers of Hamilton, 16:534. Priestley's welcome in Philadelphia had fewer formal homages, but there was an address by David Rittenhouse for the American Philosophical Society.

[25]Joseph Priestley, baggage entry and sworn affadavit for items imported with Priestley on the ship Sansom, John Smith, master, June 5, 1794, Misc. MSS, MSS Division, Library of Congress. For the inkstand: Smith, Priestley in America, p. 13.

home in the near wilderness of Northumberland, Pennsylvania. This man, who on later visits to Philadelphia would have tea with President Washington,[26] and would be the guest of honor at a special American Philosophical Society dinner,[27] was clearly a man of eminence. The reasons why Priestley came to be such an important figure become clear when his impact upon several areas of Anglo-American intellectual life are examined.

In a time of political turmoil on both sides of the Atlantic, it was as a political symbol and thinker that Priestley was most immediately visible. Although Priestley himself stressed his work as theologian and scientist far more than any contribution he ever made to politics, the bitterness of anti-Jacobins towards him, and the obvious efforts of both embryo parties in the United States to capture Priestley, provide a rough measure of his contemporary

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[26]Adams and the William Russell family were also present at the executive mansion, Feb. 11, 1796. John Adams, Philadelphia, Feb. 13, 1796, Charles Francis Adams, ed., Letters of John Adams Addressed to His Wife, 2 vols. (Boston: Little and Brown, 1841), 2:200; Jeyes, The Russells of Birmingham, pp. 203-4. Priestley asked Washington about whether unnaturalized immigrants could take out patents, and after inquiries Washington had a secretary send the negative answer: "To Doctor Priestly sic]," April 14, 1796, George Washington Letterbooks, 19:179, Washington Papers, Library of Congress (Presidential Papers Microfilm, Reel 7).

[27]Printed invitation and Priestley's reply, March 2, 1803, Schofield, ed., Scientific Correspondence, pp. 318-19; Benjamin Rush, Philadelphia, March 13, 1803, to Thomas Jefferson, L. H. Butterfield, ed., Letters of Benjamin Rush, 2 vols., American Philosophical Society Memoirs, vol. 30, pts. 1 and 2 (Princeton: Princeton University Press, 1951), 2:858.

status as a political figure. Priestley repeatedly asserted that "the very catalogue of my publications" would prove that he had devoted so much of his life to theology and science that he had little time left for politics.[28] Yet despite the comparatively small amount of political activity and writing, and despite the fact that the convenient records of conversions and congregations that are often conspicuously kept in the theological realm are not matched by similar sources for the tracing of political impact, there is plenty of evidence to roughly sketch Priestley's political significance. Although there is some truth in Priestley's pose as a not very political being, his writings in the field of politics were of more than minimal importance.

Priestley's An Essay on the First Principles of Government had perhaps the most flamboyant impact of any of of his political writings. Jeremy Bentham said that he cried out in ecstasy, "Eureka!" when he read

> The good and happiness of the members, that is of the majority of the members, of any state, is the great standard by which everything relating to that state must be finally determined

in this Essay. Bentham credited the discovery of what became his famous utilitarian "greatest happiness of the greatest number" to his reading of the work in 1768, the year in which it was published.[29]

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[28]Priestley, Appeal on Riots; pt. 2, pp. 111-12; Priestley, The Present State of Europe, Preface, pp. ix-xii; and Priestley, Letters to the Inhabitants of Northumberland, pp. 17 ff.

[29]Charles Warren Everett, The Education of Jeremy Bentham (New York: Columbia University Press, 1931), pp. 38, 50.

Although there was no American edition of the Essay on the First Principles of Government, the work was not unknown in the United States. Rebel freeholders in Augusta County, Virginia, quoted it in arguing against the Tory position that whatever Parliament enacted must be obeyed. The Freeholders were "persuaded that the Gentlemen of the General Assembly" would know their argument was taken from Priestley's Essay.[30]

In addition to four editions published in Great Britain between 1768 and 1835,[31] the Essay on the First Principles of Government appeared in Dutch in 1783. This Netherlands edition was a part of the propaganda of the abortive Patriot Revolution which attempted to greatly reduce the powers of the Stadtholder, William V. Its translator, Baron van der Capellen, had been a leader in the movement advocating a Dutch alliance with the United States and France during the American Revolution; his translation of Priestley's Essay was intended as a means of spreading the ideas of the Patriot party in their attempt to democratize the Netherlands, a struggle which was intertwined

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[30]The Freeholders of Augusta, to the Printers, The Virginia Gazette (John Dixon and William Hunter, editors), Dec. 20, 1776, quoting from near the end of the section "On Political Liberty."

[31]London: Printed for J. Dodsley, T. Cadell, and J. Johnson, 1768; Dublin: Printed for James Williams, 1768; London: Printed for J. Johnson, 1771; London: Charles Ely, Political Pamphlet Office, 1835.

with and continued out of the effort to aid the rebelling American colonists.[32]

The precise extent to which those rebelling colonists were affected by Priestley's pamphlets supporting their cause is a difficult if not impossible thing to measure. The impact of Richard Price was probably larger than that of Priestley, as was also the case with their influence on van der Capellen. Two or three American editions of Priestley's An Address to Protestant Dissenters . . . with Respect to the State of Public Liberty in General and of American Affairs in Particular appeared in 1774, while Price's similar pamphlet of 1776 contributed at least five colonial editions to buoy up the Americans' sense of the justice of their cause.[33]

What is clear is that Priestley's political thought was widely disseminated in the emerging United States. Even before the rebels of Augusta County, Virginia, cited Priestley's Essay on the First Principles of Government and

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[32]Murk de Jong Hendrikszoon, Joan Derk van der Capellen (Groningen, Den Haag: J. B. Wolters, 1921), pp. 523-25; R. R. Palmer, The Age of Democratic Revolution, 2 vols., paperback ed. (Princeton: Princeton University Press, 1969-70), 1:324-40.

[33]Philadelphia: James Humphreys, Junr., 1774; Boston: Thomas and John Fleet, 1774; and a Wilmington, Del. James Adams, 1774, edition not now known to exist, but advertised in the Pennsylvania Packet. Priestley's earlier The Present State of Liberty in Great Britain and Her Colonies appeared in only one edition: London: Johnson and Payne, 1769. Carl B. Cone, Torchbearer of Freedom; the Influence of Richard Price on Eighteenth Century Thought (Lexington: University of Kentucky Press, 1952), Chapter 7.

before Priestley's pamphlet added English support to the arguments of the rebelling colonials, Americans were reading portions of Priestley's defense of liberty. Both the Remarks on some Paragraphs in the Fourth Volume of Blackstone's Commentaries, Relating to the Dissenters and the An Answer to Dr. Blackstone's Reply to Remarks . . . were reprinted in Philadelphia in 1773 and were owned by such American leaders as Dr. William Shippen and Fisher Ames.[34] Luther Martin read to the Constitutional Convention of 1787 from Priestley, as well as from Locke and others, when trying to argue for very narrow powers for the federal government,[35] and Benjamin Rush highly recommended Priestley's answer to Burke's Reflections on the Revolution in France to Jeremy Belknap.[36] Priestley's Letters to the Inhabitants of

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[34]As a part of An Interesting Appendix to Sir William Blackstone's Commentaries on the Laws of England, Containing . . . (Philadelphia: Robert Bell, 1773) and in The Palladium of Conscience; or the Foundation of Religious Liberty Displayed, Asserted, and Established (Philadelphia: Robert Bell, 1773) [Consisting of many of the same items in the same printings as An Interesting Appendix]. William Shippen's copy of An Interesting Appendix and Fisher Ames' copy of The Palladium of Conscience are in the Clements Library.

[35]Madison's notes for June 27, 1787, Max Farrand, ed., The Records of the Federal Convention of 1787, 4 vols. (New Haven: Yale University Press [etc.], 1911-37), 1:437. For this in Yates's notes, p. 440.

[36]Benjamin Rush, Philadelphia, June 6, 1791, to Jeremy Belknap, Butterfield, ed., Letters of Rush, 1:583. There were three 1791 editions printed in Birmingham by Thomas Pearson for J. Johnson, London. The sales of these were quite pleasing to Priestley, the first and second editions of 1,000 copies each selling rapidly. The third edition was 1,500 copies. Priestley, Birmingham, Jan. 20, 1791, to John Wilkinson, "Wilkinson Letters." There were also a Dublin, a New York, and a Paris edition (all 1791).

Northumberland was both highly praised and distributed by Jefferson,[37] and Chancellor Robert R. Livingston attempted to get it reprinted in Albany in order to help the Democratic-Republicans in back-country New York state.[38] Although one can probably never accurately gauge how many persons were converted by the arguments in Priestley's political writings, there can be no doubt that those publications proved convenient for a large number of Americans who chose to use them in their own defense of liberty.

Priestley's political thought received its most extensive circulation in his Lectures on History and General Policy. Printed in six British and American editions between 1788 and 1826,[39] Priestley's lectures were an effective mode of spreading his ideas because they were adopted as a college text in both England and the United States. In the very year the volume was first published, an Englishman highly recommended the work to the president of Rhode Island College; Dr. Caleb Evans, who regarded Priestley as "the ne

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[37]Thomas Jefferson, Philadelphia, Jan. 18, 1800, to Joseph Priestley, Ford, ed., Works of Jefferson, 9:95-99.

[38]Priestley, Northumberland, Jan. 30, 1800, to Thomas Jefferson, printed in Smith, Priestley in America, pp. 113-16. Joseph Priestley, Northumberland, April 17, 1800, to Robert R. Livingston, Schofield, ed., Scientific Correspondence, pp. 303-4.

[39]Birmingham: Printed by Pearson and Rollason for J. Johnson, London, 1788; Dublin: Printed for P. Byrne, 1788; Dublin: Printed for Luke White and P. Byrne, 1791; London: Printed for J. Johnson, 1793, 2 vols.; Philadelphia: Printed for P. Byrne, 1803, 2 vols.; London: Printed for Thomas Tegg, R. Milliken, Dublin, and R. Griffin and Co., Glasgow, 1826.

plus ultra of heresy," nonetheless considered the Lectures on History "the best book on that interesting subject that I ever met with."[40] Yale students started reciting these lectures in 1790 under Tutor Barnabas Bidwell,[41] and in 1797 George Washington's step-grandson was among those studying them at Princeton.[42] In England the Lectures on History and General Policy were used not only in dissenting academies, but also were recommended by the Professor of Modern History at Cambridge.[43] Their impact, of course, was not limited to the Anglo-American colleges. In the 1790's there were Dutch and French translations of the Lectures.[44] John Quincy Adams read (and vowed to soon re-read) this "excellent work" while a student in a law

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[40]Dr. Caleb Evans, Down End, near Bristol, Sept. 20, 1788, to Rev. James Manning, Reuben Aldridge Guild, Early History of Brown University, Including the Life, Times and Correspondence of President Manning, 1756-1791 (Providence: [Printed by Snow and Farnham], 1897), p. 459.

[41]Edmund S. Morgan, The Gentle Puritan: A Life of Ezra Stiles, 1727-1795 (New Haven and London: Yale University Press, 1962), p. 389.

[42]George Washington P. Custis, Nassau Hall, letters of July 1, 1797 and July 14, 1797, to George Washington, Virginia Magazine of History and Biography 20 (1912) : 301, 302.

[43]McLachlan, Warrington Academy, p. 55.

[44]Deventer: Lucas Leemhorst, 1793; Paris: H. J. Jansen, 1796; Paris: Deterville, 1798. The French translation was by Andre Samuel Michel Cantwell (1744-1809), an inaccurate translator of many English works; Joseph Marie Quérard, La France Littéraire ou Dictionnarie Bibliographique, 12 vols. (Paris: Didot, 1827-64), 2:43. Crook, Bibliography of Priestley, pp. 102-3, 142, is badly confused on the French editions of this work.

office;[45] there could be no better demonstration that his father John Adams was quite surely wrong when he wrote with special regard to Priestley's political writings that his influence was "not an atom in the world."

Beyond his political influence, Priestley, like Franklin, became a central figure for his contemporaries through his scientific research and his educational efforts. No doubt the influence of his scientific work had two aspects: one was to enhance his general reputation with a public fascinated by but largely ignorant of "science"; the other was in the specific effects of his work on the development of science. In Chapter V Priestley's fall from the very center of scientific inquiry to a plaintive position on the theoretical fringes has been described in some detail. It will suffice to relate here that the American scientific community was slower to abandon the phlogiston theory for Lavoisier's chemical revolution than were European chemists. Because American scientific ties were closer to Priestley and his English circle than to Continental chemists, and because later the United States was the site of Priestley's persistent attempts to validate his position in his last years, his influence on chemistry remained of significance longer here. Boston's Society for the Study of Natural Philosophy was still in the American theoretical forefront

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[45] "The Diary of John Quincy Adams," entries for June 27 and July 19, 1788, Massachusetts Historical Society Proceedings, 2d ser., 16 (1902) : 431, 441.

when it began to study Lavoisier's chemistry in 1802, although it had been advocated at the Harvard Medical School about 1788.[46]

Even though Priestley's influence in chemistry was to be a rather small retrograde factor even before his death, his The History and Present State of Electricity continued to be of importance for some time to come. Priestley's History of Electricity had already been recommended (along with Newton's Optics and other works) by the professor of natural philosophy and mathematics for the F. H. C. Society Library at William and Mary in the early 1770's.[47] It was read by an American studying medicine at Edinburgh in the winter of 1771-72,[48] and was required for the Juniors at Yale in the 1790's.[49] While the major impact of The History and Present State of Electricity on practicing electrical

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[46]Brooke Hindle, The Pursuit of Science in Revolutionary America, 1735-1789 (Chapel Hill: Published for the Institute of Early American History and Culture, 1956), pp. 342-43; Linda K. Kerber, "Science in the Early Republic: The Society for the Study of Natural Philosophy," William and Mary Quarterly 29 (1972) : 272.

[47]John Melville Jennings, The Library of the College of William and Mary in Virginia, 1693-1793 (Charlottesville: University Press of Virginia, 1968), pp. 60-62.

[48]Whitfield J. Bell, Jr., "Thomas Parke's Student Life in England and Scotland, 1771-1773," Pennsylvania Magazine of History and Biography 75 (1951) : 251.

[49]Morgan, Gentle Puritan, p. 389. A Priestley scientific work (not clearly identified) was in the private summer course of a Princeton professor in 1797; George Washington P. Custis, June 8, 1797, to George Washington, Virginia Magazine of History and Biography 20 (1912) : 300.

scientists ended in the early nineteenth century, the volume has continued to be considered as the classic history in that field.[50]

Priestley's impact on education was larger through the use of his publications as texts, several of which have been noted above, than through his discussions of educational theory. The most extensively used of all was the Chart of Biography. Before the end of his life, Priestley became more than a little vexed with his London publisher (Joseph Johnson), who Priestley felt should have done more for him in light of the huge profits on the multitudinous editions of this Chart.[51] In 1820, fifty-five years after its first publication, it was still being published and used.[52] A fifteenth edition of the somewhat less popular A New Chart

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[50] A considerable number of references on the book's impact can be found in pp. xxxviii-xlii of Robert E. Schofield's introduction to the 1966 Johnson Reprint Corporation facsimile of the 3d edition. A rather accidental result of Priestley's scientific writings was the suggestion of the idea that led to Montgolfier's first experiments with the balloon. Montgolfier's daughter met Priestley's great-granddaughter and told how a chance reading of Priestley led Montgolfier to the conclusion that a lighter than air vehicle was possible. Mrs. Marie Adelaide Belloc Lowndes, I, too, Have Lived in Arcadia (New York: Dodd, Mead, & Co., 1942), pp. 18-19, quoting the letter written the day after the encounter.

[51] Priestley, Northumberland, Feb. 14, 1802, to Theophilus Lindsey, "Priestley--Lindsey Letters."

[52] A Description of a Chart of Biography; With a Catalogue of all the Names . . . A New Edition, with Improvements, and Continued to the Close of the Eighteenth Century (London: Baldwin, Cradock, and Joy, 1820). Very few of either the Chart of Biography or the Chart of History themselves (in any of the editions) have survived.

of History was reached by 1816, and there were Dutch, French, and Italian translations of the charts in the 1780's.[53]

While almost anything else pales in comparison to the evidence that the sheer volume of publication of these charts provides, Priestley's treatises on educational theory were not without influence. A Boston example will serve to demonstrate that this influence spread far beyond the walls of the British dissenting academies, where it was most felt. Although there was not an American edition until much later, already in 1771 James Bowdoin had read Priestley's Essay on a Course of Liberal Education for Civil and Active Life and wanted his son educated under the plan contained in the work. The future revolutionary leader asked Benjamin Franklin to arrange for his son to become Priestley's pupil.[54]

Political writer, scientist, and educator, Priestley nevertheless considered his theological labors as the most significant part of that vast corpus which prompted John Quincy Adams, in spite of his father's at times jaundiced view of Priestley, to note in his diary, "Priestley's literary powers may be truly called athletic."[55] Nonetheless,

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[53]Crook, Bibliography of Priestley, pp. 142-43.

[54]James Bowdoin, Boston, Nov. 5, 1771, to Benjamin Franklin, Massachusetts Historical Society Collections, ser. 6, 9 (1897) : 276-77. Franklin replied that Priestley was no longer at the Warrington Academy, Jan. 13, 1772, to James Bowdoin, Franklin Papers, vol. 45, letter 50, American Philosophical Society (microfilm in the Clements Library).

[55]"The Diary of John Quincy Adams," Entry for June 27, 1788, Massachusetts Historical Society Proceedings, 2d ser., 16 (1902) : 431.

despite the staggering efforts made by Priestley, his influence in the field of religion should not be unduly magnified. While a considerable stir was caused at the time, actual converts to his views never became a large proportion of either the English or American populations, and English Unitarianism rather quickly moved in other directions.

The lifetime of Joseph Priestley coincided almost exactly with the rise of modern English Unitarianism. By the time of his death Priestley, along with his best friend Theophilus Lindsey, was pre-eminent in the leadership of the movement. A decade later in a debate over what they should be called, one clergyman of this liberal and rationalist persuasion even proposed as "descriptive and definitive" the term "Priestleyan."[56] Thus, in some respects at least, Priestley was to British Unitarianism what his older contemporary John Wesley was to Methodism. In order to keep Priestley's impact on theological thought in some perspective, however, the rise of British Unitarianism must be examined in more detail.

In early-eighteenth-century England the three major Protestant branches of dissent from the established church were the Presbyterians, the Independents (equivalent to American Congregationalism), and the Baptists. Denominational lines, however, were neither very distinct, nor of great import for these dissenters, especially between the

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[56]"Pastor" to the Editor, Monthly Repository 10 (1815) : 744-45.

Presbyterians and the Independents. Although a standard version of the tale would have the English Presbyterians gradually becoming Unitarians, rationalism actually slowly made inroads with a variety of dissenting ministers and congregations. In the fluid eighteenth-century scheme where "dissent" meant more than particular denominational labels, Priestley himself, for example, came from "Independent" origins, but held "Presbyterian" pulpits and at the same time had at least one of his children baptized in an "Independent" chapel.[57] By the last quarter of the century, a number of dissenting chapels had ministers who openly advocated the simple humanity of Christ and other of the positions held by Priestley. These chapels, nonetheless, were not in any way an organized Unitarian "denomination" in the later nineteenth-century sense. British Unitarianism only approached that status with the formation of the British and Foreign Unitarian Association in 1825. While Priestley remained in England only one congregation was explicitly Unitarian, and that congregation, the Essex Street Chapel in London, was the outgrowth of Anglican, not dissenting departure from orthodoxy.

The Anglican component of this rationalist movement was chiefly the product of a group of Cambridge University students and graduates. The Feather Tavern Petition to

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[57]While earlier scholars have noted some of the points in this argument, the important statement, which my Priestley research confirms, is Russell E. Richey, "Did the English Presbyterians Become Unitarian?" Church History 42 (1973) : 58-72.

Parliament in 1772, which attempted to abolish subscription to the Thirty-nine Articles of faith of the Church of England, came from these reformers. When several attempts failed to substantially change the obligation within the church to uphold orthodoxy, some of these liberals left. Some others of the reforming party remained within the establishment, a few even becoming bishops, but Theophilus Lindsey was among those to leave. Priestley joined others with similar views in helping to set up Lindsey in the Essex Street Chapel, which opened on April 17, 1774. Essex Street, which became a center for the Unitarian movement, thus had a significant Anglican component in its origins, but the bulk of late-eighteenth-century English Socinians were members of various dissenting congregations who had discarded their orthodoxy for an "Enlightened" faith.[58]

Priestley, therefore, although he surely was the leading and most prolific theologian of the movement, should be seen neither as the guiding star of an organized denomination, nor as the portending comet of a host of followers. Before the Birmingham riots Priestley was promoting the opening of a specifically Unitarian chapel in Birmingham,[59]

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[58]Belsham, Memoirs of Lindsey, and Priestley's correspondence with Lindsey provide a large amount of information on the developing movement. A useful short history can be found in H. L. Short, "The Later History of the English Presbyterians," in sections in vols. 64 (1966) - 66 (1968) of the Hibbert Journal, even though the title reflects the standard Presbyterian to Unitarian scheme.

[59]Priestley, Birmingham, Dec. 23, 1790, to Theophilus Lindsey, "Priestley--Lindsey Letters." Gilbert Wakefield had even agreed to "serve our intended Unitarian

but the riots brought that to naught. Like Wesley, Priestley was a leader of a religious perspective that only slowly divorced itself organizationally from its ancestry, but, unlike Methodism, Unitarianism was not a mass movement. Although Priestley was pleased with and contributed to some Unitarian street-preachers he met at Manchester,[60] in Priestley's lifetime the rather rarefied intellectualism of Socinianism appealed by and large to persons from the middle and upper classes, not to the bulk of lower-class Englishmen.

Priestley's prolific pen supplied English Unitarianism with almost every conceivable form of necessary publication. Although a few of his later theological compilations, bulky and perhaps less necessary, never sold widely at all, a great many Priestley works remained fundamental touchstones of the denomination for some time. Priestley himself remarked that his massive General History of the Christian Church had "not sold,"[61] and even he admitted that it had

Chapel at Birmingham," Priestley, Birmingham, June 2, 1791, to Theophilus Lindsey, "Priestley--Lindsey Letters."

[60] Priestley, Birmingham, Oct. 3, 1789, to Theophilus Lindsey, partially printed in Belsham, Memoirs of Lindsey, Appendix 14, p. 363. The manuscript of this letter is not in the "Priestley--Lindsey Letters" at the Dr. Williams Library.

[61] Priestley, Northumberland, Oct. 30, 1802, to Thomas Belsham, "Priestley--Lindsey Letters." Priestley referred to the original English edition of the first two volumes (eventually the work amounted to 6 vols.). Priestley printed 720 copies of the later volumes, but the English patrons of the printing suggested that only 300 sets be produced. In order to have complete sets to sell, the first two volumes were reprinted in an American edition; Priestley, Northumberland, Aug. 28, 1802, to Theophilus Lindsey, "Priestley--Lindsey Letters."

its merits in areas other than great original scholarship.[62] A bookseller who took over the remaining copies of A Comparison of the Institutions of Moses with those of the Hindoos and Other Ancient Nations, which Priestley printed at his own expense, reported that he had sold only one copy after considerable advertising, and Priestley feared that few of the about twenty copies he gave away in the United States would even be read.[63] The dismal success of these works, however, is more than offset by the great impact of many of his theological writings. Some of his tracts, catechisms, and the like went through as many as a dozen or more English and American editions before they ceased being regularly published about 1820.[64] Priestley's publications and

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[62] Priestley, Northumberland, July 12, 1795, to Theophilus Lindsey, "Priestley--Lindsey Letters." The reference is to the last four volumes, which Priestley intended as a full but manageable compendium with a Unitarian viewpoint of such huge works as Claude Fleury's 36-volume Histoire Ecclesiastique. The first two volumes were somewhat more scholarly in that they used more of the original writings of the church fathers, but to a great extent they went over the same ground Priestley had covered in the History of Corruptions and the History of Early Opinions. For an apology for writing "useful compilations" in church history see Priestley, Birmingham, Dec. 4, 1789, to Theophilus Lindsey, "Priestley--Lindsey Letters."

[63] In addition to the copies the Philadelphia bookseller could not sell, large numbers of copies were sent to England as was the case with many of Priestley's American publications. There is no evidence this work met with any considerable success in England either. Priestley, Northumberland, June 25, 1801, to Thomas Belsham and July 22, 1801 to Theophilus Lindsey, "Priestley--Lindsey Letters."

[64] His An Appeal to the Serious and Candid Professors of Christianity went through at least 15 editions between 1770 and 1827; A Catechism for Children and Young Persons 12 editions, 1767-1817; A General View of the Arguments for the Unity of God 9 editions, 1783-1827; A Familiar

disciples assured the dominance of his influence in the English Unitarian movement on through the first quarter of the nineteenth century.

The two decades after Priestley's death marked, however, the limits of that virtually uncontested pre-eminence. James Martineau, who came to be the leading force in mid-nineteenth-century English Unitarianism, represented Romanticism and intuitive faith rather than the rationalism, determinism, and dogmatic theology that had been at the core of Priestley's thought. While the transition was not without bitter controversy, the rationalist turn of mind that had enabled Priestley to be the central spokesman of the movement was on the wane.[65]

This brief overview of English Unitarian history should not leave the impression that Priestley's theological impact was of only modest significance. The number of notable English literary figures who as youthful followers in the Unitarian movement almost canonized Priestley quickly

Illustration of Certain Passages of Scripture 8 editions, 1770-1836; A Scripture Catechism 7 editions, 1772-1817. Priestley's Institutes of Natural and Revealed Religion went through four editions between 1772 and 1808, and An History of the Corruptions of Christianity had at least five English and American editions by 1838 plus Dutch and German translations (including the abridged Keene, N. H. edition of 1838 that is missed in Crook, Bibliography of Priestley).

[65]James Martineau, review of Rutt ed., Works of Priestley, Monthly Repository, 1833, reprinted in James Martineau, Essays, Reviews, and Addresses, 4 vols. (London: Longmans, Green and Co., 1890-1), 1:1-42; H. L. Short, "Priestley and Martineau," Hibbert Journal 60 (1962) : 210-19; Short, "Later History," Hibbert Journal 65 (1967) : 117-22.

dispels that misconception. "I love and honour him almost profanely," wrote Charles Lamb to Samuel Taylor Coleridge in 1796.[66] Coleridge, Southey, Lamb, Godwin, and William Hazlitt the essayist, to name only a few of the more prominent, later went different ways, but all shared a similar youthful Unitarian period in which they read and almost worshiped Priestley. Coleridge in 1795 and 1796 preached in a number of pulpits sympathetic to Unitarianism, although some of the sermons were more political than theological. In 1797, even though it was as a financial last resort which he wished to avoid, he very nearly became the pastor of the High Street Chapel in Shrewsbury,[67] and by 1783 William Godwin was advocating Unitarianism and looking "up to Dr. Priestley as his master" while serving as pastor at Beaconsfield.[68] These youthful Priestley disciples not only adopted Unitarianism in this period but also revered Priestley for his political views and especially for his materialism and determinism. Later Coleridge would move to the right in both politics and religion, while Godwin became

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[66] C. Lamb, 1796 (no specific date) to Samuel Taylor Coleridge, Alfred Ainger, ed., The Letters of Charles Lamb, Newly Arranged, with Additions, 2 vols. (London and New York: Macmillan and Co., 1888), 1:10.

[67] H. W. Stephenson, "Samuel Taylor Coleridge and Unitarianism," Unitarian Historical Society Transactions 5 (1932) : 165-84; "Bliss was It in that Dawn: The Matter of Coleridge's Revolutionary Youth and How it Became Obscured," Times Literary Supplement, Aug. 6, 1971, pp. 929-32.

[68] H. N. Brailsford, Shelly, Godwin, and their Circle (New York: Henry Holt and Co., and London: Williams and Norgate, 1913), pp. 80-81.

an atheist; nonetheless the youthful Priestley enthusiasm of all of these figures is summarized by Coleridge's adulatory verses on Priestley, by Lamb's earnest wish to "get more of Priestley's works,"[69] and by the fact that Coleridge and Southey planned their abortive utopian pantisocracy for an area near where Priestley settled in Northumberland, Pennsylvania, on lands that Joseph Priestley, Jr., Thomas Cooper, and others hoped to make into a profitable and idealistic settlement scheme.[70]

Nor were these young literary figures all of the significant Englishmen who as Unitarians were influenced by Priestley. The congregation of the Essex Street Chapel, where Priestley always preached on his annual visits to London, included such notables as the ex-prime minister Lord Grafton, the noted politician Sir George Savile, and even

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[69]Charles Lamb, Jan. 2, 1797, to Samuel Taylor Coleridge, Ainger, ed., Letters of Lamb, 1:57. See also the letter of Jan. 10 (pp. 65-67) with its "Priestley, whom I sin in almost adoring."

[70]Partly due to the destruction of Priestley's papers, not a great deal has been written about the settlement scheme. Much of what information is known is in Mary Cathryne Park, Joseph Priestley and the Problem of Pantisocracy (Philadelphia: Reprint from the Proceedings of the Delaware County Institute of Science, 1947). See also the important documents for the project in the "Wilkinson Letters": Joseph Priestley [Jr.], New York, May 28, 1794, to John Wilkinson; the printed prospectus of the scheme signed by Joseph Priestley, Junr., Philadelphia, May 24, 1794, enclosed in the above; and the copy of "Conditional Articles of Agreement made by & between Robert Morris, and John Nicholson, of the City of Philadelphia of the one Part and Joseph Priestley [Junior], Abel Humphries & John Vaughan of the other Part," Jan. 30, 1794. Fortunately the project was abandoned before Priestley's son could be utterly ruined by land speculation as Robert Morris was. The scheme merits a new scholarly study.

William Wilberforce, before his conversion to other views, to name but three.[71] While Priestley's English Unitarian following was not vast in numbers, it was rich in men of importance and influence.

The theological impact of Joseph Priestley was not limited to England. In the 1780's and early 1790's through the direct influence and encouragement of Priestley, William Christie and Thomas Fyshe Palmer founded Unitarian societies at Montrose, Dundee, and four or five other locations in Scotland. After Christie followed Priestley to America and Palmer was sentenced to Botany Bay for supposed sedition, however, a number of these societies died out.[72] As well,

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[71] Belsham, Memoirs of Lindsey, pp. 76-77, 211-22, and passim and McLachlan, "More Letters," p. 364, quoting Theopilus Lindsey, June 8, 1784, to William Tayleur. Besides the information in Belsham, for more on the conversion of the Duke of Grafton, who led a rake's life for many years, see the obituary in Monthly Repository 6 (1811) : 245-51. Priestley, who gained Grafton's financial support late in life, dedicated his A Comparison of the Institutions of Moses with those of the Hindoos to the Duke. The Duke of Grafton's copy of Priestley's A General History of the Christian Church to the Fall of the Roman Empire, which Grafton gave to William Frend (another noted convert), and his copy of An History of Early Opinions are in the Priestley collection of the Pattee Library, Pennsylvania State University.

[72] A brief summary can be found in L. B. Short, "The Challenge to Scottish Calvinism: (3) The Unitarian Christian Challenge," Hibbert Journal 62:142-46. Christie, who preached Priestley's funeral sermon and wrote the commentary on his theological works for the Memoirs, differed on some theological points with Priestley while in Northumberland during Priestley's last years, and proved trying in other ways, especially by being a personally incredibly filthy and slovenly man. See esp. Priestley, Northumberland, Nov. 7, 1801, to Theophilus Lindsey, "Priestley--Lindsey Letters."

there were translations of at least six of Priestley's theological works into German, four into Dutch (where, as we have seen, the History of Corruptions caused significant debate), one into French, and two into Welsh.[73] Even so, Priestley's Biblical criticism apparently had almost no impact on the great German Scriptural scholarship which forms such an important epoch in the history of religion.[74] The country other than England where his religious influence might be expected to be greatest, though, is the land of his exiled last decade, the United States.

The influence of Joseph Priestley upon American religion is but a minor cadence in the major theme of the evolution of a part of New England Congregationalism into Unitarianism. Conrad Wright, in his important The Beginnings of Unitarianism in America,[75] has shown that the liberal movement which emerged as American Unitarianism in the nineteenth century was chiefly an indigenous development within the Congregational churches of New England. Indeed, during Priestley's lifetime and well beyond, with but a few exceptions, these New England liberals dropped Trinitarianism for the Arian position, not Socinianism of which Priestley was

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[73] Crook, Bibliography of Priestley, pp. 85-88. For the Dutch controversy see Chapter IV and Appendix C.

[74] Albert Schweitzer, The Quest of the Historical Jesus; A Critical Study of its Progress from Reimarus to Wrede, 3d ed. (London: Adam and Charles Black, 1954) finds no need to even mention Priestley.

[75] (Boston: Starr King Press, 1955).

the chief spokesman. Nonetheless, despite the fact that Priestley's influence was not a deciding factor in this essentially native development of American Unitarianism, those instances where his impact was felt are of considerable interest.

Priestley's theology was carried to the United States at least a decade before he emigrated there in 1794. Rev. William Hazlitt, father of the famous essayist, took his family to the United States in 1783. Hazlitt, a Socinian and a friend of Priestley, hoped to spread Priestley's theological views and establish himself in some vacant pastorate. His abrasive and conceited personality, however, along with the controversial nature of the Priestleyan theological stance, prevented his being selected to fill permanently any American pulpit; by 1786 he decided to return to England. Nonetheless, during his three years in America he contributed significantly to the dissemination of Priestley's Unitarian theology there. Hazlitt preached quite extensively while in America, first in the Philadelphia area, then around Boston, and finally in Maine. In Philadelphia he saw that two of Priestley's tracts were reprinted.[76] In the Boston area Rev. James Freeman of King's Chapel and Rev. William Bentley

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[76]Wright, Beginnings of Unitarianism, pp. 210-17, contains a thorough treatment of Hazlitt's activities and their results. The two tracts were An Appeal to the Serious and Candid Professors (with the "Concise History" and the "Trial of Elwell") and A General View of the Arguments for the Unity of God reprinted in one 57 pp. tract (Philadelphia: Printed and sold by Robert Bell, 1784), Crook's bibliography, which is far from definitive, misses this publication, which contains extra introductory letters by Hazlitt.

of Salem's East Church were not only open to Priestley's views, but also helped to spread them by seeing that several of his works were published in local editions.[77] Socinianism in the more settled parts of New England until long after Priestley's death remained chiefly confined to the efforts of Freeman and Bentley, although others did read Priestley. John Clarke (a liberal cleric of some influence who was Charles Chauncey's colleague at Boston's First Church and a Harvard overseer) had a significant personal collection of Priestley's theological works, and the Harvard Library had most of Priestley's writings before 1790.[78]

Priestley's writings were instrumental in the founding of at least three small nonpermanent Unitarian congregations in the remote areas of late-eighteenth and early-nineteenth-century America. In 1792 a Unitarian congregation was formed

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[77]Salem and Boston editions of Extracts from Doctor Priestley's Catechism in 1785 and 7, A Continuation of the Letters to the Philosophers (Salem, 1795), Discourses on the Evidence of Revealed Religion (Boston, 1795), History of the Corruptions of Christianity (Boston, 1797) and several later Boston and Salem editions of the Extracts from Doctor Priestley's Catechism in the 1790's. Priestley and Freeman corresponded, and Freeman and Bentley showed Priestley's son William around when he went to the area in 1794.

[78]Clarke owned English editions of the History of Corruptions (1st ed.), the 1st 2 vols. of the General History of the Christian Church, the Institutes (3d ed.), and Letters to a Philosophical Unbeliever and the Boston 2d ed. of Discourses on the Evidence of Revealed Religion. These volumes are in the possession of the author. Clarke is not in the DAB, but can be located in the text and biographical notes of Wright. Lindsey presented copies of his own and Priestley's theological works to the Harvard Library; Belsham, Memoirs of Lindsey, p. 157. The great extent of Harvard's Priestley holdings can be seen in Harvard University Library, Catalogue Bibliothecae Harvardianae Cantabrigiae Nov-Anglorum (Boston: Thomas and John Fleet, 1790).

in Portland, Maine, by Thomas Oxnard, who had been an Episcopalian cleric there; Oxnard became a Unitarian after reading publications by Priestley and Lindsey which Freeman gave him. Approximately twenty miles away in the town of Biddeford resided George Thatcher, a Federalist congressman who became a Socinian by reading Priestley's writings and who began an extensive correspondence with Priestley even before Priestley came to America. Thatcher promoted the establishment of a second Maine congregation about the same time.[79] A third congregation in Oldenbarneveld in western New York state was served for a time by a Connecticut Congregational minister who had become a Socinian after reading works of Priestley and Lindsey. Rev. John Sherman, who was dismissed from his Mansfield, Connecticut, pastorate in 1805 by a consociation, published both an account of the proceedings and a Unitarian tract. Sherman remained with the Oldenbarnveld Unitarian congregation, which included a Dutch Socinian cleric, for a few years.[80]

When Priestley emigrated to America in 1794 he had high hopes that his personal efforts might bring many converts to Unitarianism. Although Hazlitt "apparently [had

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[79]Belsham, Memoirs of Lindsey, pp. 158-59. Thacher (he dropped the second "t" in his name) is in the DAB. Fortunately most of Priestley's letters to Thatcher have survived. See citations elsewhere and the Bibliography.

[80]John Sherman (1772-1828), One God in One Person Only (Worcester, Mass.: Isaiah Thomas, Jun., 1805); John Sherman, A View of Ecclesiastical Proceedings in the County of Windham, Connecticut (Utica, New York: Printed by Ashahel Seward, 1806); Belsham, Memoirs of Lindsey, pp. 165-75.

done] much harm" Priestley felt that if "great prudence and judgment" were used he would "see a great harvest opening upon me. . . ."[81] The effect upon American Unitarianism of his presence in the United States during the last decade of his life, however, was not to be great.

Priestley, who throughout his life was troubled with an hereditary stammer,[82] preached only in Philadelphia and Northumberland while he was in America. The single exception was a sermon before the judges of the Supreme Court of Pennsylvania in Sunbury in 1795.[83]

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[81]Priestley, Philadelphia, June 24, 1794, to Theophilus Lindsey, "Priestley--Lindsey Letters."

[82]Priestley himself wrote that he had inherited "the impediment in my speech" from "my family," and both his illustrious great-grandson Henry Hobson Richardson and one of Richardson's six children bore the hereditary defect. Priestley, Memoirs, 1:22-23; Mariana Griswald Van Rensselaer, Henry Hobson Richardson and His Works (1888; New York: Dover Publications, 1969), p. 46. While stammering has been generally seen as the result of anxiety since about the 1920's, some recent work has found the cause to be physical (with the emotional problems because they stutter), thus confirming the remarkable evidence of hereditary impact in the Priestley family; Dr. Ronald Webster, interview, Today Show, N.B.C., May 5, 1972. For descriptions of Priestley's defect late in life, as remembered much later, see Hugh Bellas, Sunbury, Pa., Sept. 22, 1849, to William B. Sprague, Annals of the American Pulpit, 9 vols. (New York: R. Carter and Brothers, 1857-69), 8:305-6 and Charles Caldwell, Autobiography of Charles Caldwell, M.D. (Philadelphia: Lippincott, Grambo, and Co., 1855), pp. 345-46. Priestley's perennial optimism showed even in regard to this handicap, which was not severe, in his remark that it prevented him from being too "disputatious in company" or "seduced by the love of popular applause as a preacher"; Memoirs, 1:20-23.

[83]William Davy, German Town, May 22 [1795], to Rev. Timothy Kenrick, quoted in Ronald A. Martineau Dixon (of Thearne), "The Kenricks and Their Association with Dr. Priestley," Unitarian Historical Society Transactions 5 (1932) : 215; Rev. Timothy Kenrick, Exeter, Aug. 3, 1795,

Beginning in February, 1796, Priestley delivered his first series of sermons in Philadelphia in the Universalist Church. "Good God," said Judge Preble to George Thatcher after the first service, "what would I give to hear him as long as I live."[84] Preble was not the only member of the capacity crowd, which included Vice-president Adams and many members of Congress, to be very favorably impressed. Following his own advice about initiating his efforts in America with "great prudence," Priestley lectured on the evidence in support of revealed religion rather than concentrating on his heterodox doctrinal views. He was quite successful at first; Priestley's sermons, as Benjamin Rush remarked, "were very popular."[85] In his third sermon, however, in making the point that Christ's coming was necessary because of the debauchery of the heathen world, Priestley used (to quote Rush) "too gross a language" in describing pagan vices. His

to Samuel Kenrick, Bewdley, "Kenrick Letters," Unitarian Historial Society Transactions 4 (1928) : 310-12; and Joseph Priestley, Northumberland [May 1795], to Theophilus Lindsey, Rutt, ed., Works of Priestley, vol. 1, pt. 1, pp. 303-4 (the original of this letter is not in the collection in Dr. Williams Library).

[84]George Thatcher, Philadelphia, Feb. 14, 1796, to Rev. James Freeman, Massachusetts Historical Society Proceedings, 2d ser., 3:39-40. The Judge Preble quoted cannot be Jedidiah Preble, father of Commodore Edward Preble, although he, like Thatcher, was a Maine resident and served for a time as a judge; he had died in 1784.

[85]Benjamin Rush, Philadelphia, March 4, 1796, to Griffith Evans, Butterfield, ed. Letters of Rush, 2:772-73; James Iredell, Philadelphia, February 25, 1796, to Mrs. Iredell, Griffith J. McRee, ed., Life and Correspondence of James Iredell, One of the Associate Justices of the Supreme Court of the United States, 2 vols. (New York: D. Appleton and Co., 1857-58), 2:461.

explicitness alienated a number of hearers.[86] From that point on, although the causes were more varied than simply the descriptive illustrations in his sermons, Priestley never recaptured his initial ascendancy in Philadelphia; the series of sermons delivered on subsequent visits there met with considerably less success.

The only visible Unitarian harvest in Philadelphia during Priestley's last decade was a small congregation composed mainly of immigrant English Socinians. Organized in 1796, the Society of Unitarian Christians of Philadelphia suspended its meetings between 1800 and 1807, but still exists as the First Unitarian Church of Philadelphia. On his visits to Philadelphia Priestley preached to this group, which he had encouraged.[87] One member of this congregation, the noted journalist Joseph Gales, was later to aid in spreading Priestley's theology in the South, but there, as elsewhere, the major theme of American Unitarianism was that of transplanted members of the indigenous New England movement.[88]

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[86] Rush letter cited in footnote 84 and James Iredell, Philadelphia, March 3, 1796, to Mrs. Iredell, McRee, ed., Life and Correspondence of Iredell, 2:463. There may be some truth in Thomas Russell's contemporary observation that Priestley's initial crowds were attracted more by curiosity than by other motives, though Russell did not much like Priestley; Jeyes, The Russells of Birmingham, pp. 205-6.

[87] Elizabeth M. Geffen, Philadelphia Unitarianism, 1796-1861 (Philadelphia: University of Pennsylvania Press, 1961), esp. pp. vii-55.

[88] Clement Eaton, "Winifred and Joseph Gales, Liberals in the Old South," Journal of Southern History 10 (1944): 461-74; George H. Gibson, "Unitarian Congregations in Ante-Bellum Georgia," Georgia Historical Quarterly 54 (1970): 147-68.

It is perhaps symbolic of the extent of Priestley's theological impact in America that he could not even develop a viable Socinian congregation in Northumberland, Pennsylvania, as he lived out his last years there in the near-wilderness. Despite the fact that it was there that he produced the last of his voluminous works of theological scholarship, and although he regularly conducted Sunday services in his home, the peak of his success in his backwoods home was the group of fifteen or twenty to whom he preached for a time in a nearby school house and a few young male converts on whom he pinned great hopes.[89] A Unitarian church developed in Northumberland only after Priestley's death.

While Priestley's theology did not evoke a great mass following, there were nonetheless in America, as in England, individuals of historical eminence who both read and highly praised Priestley's theological writings. Thomas Jefferson wrote that Priestley's History of the Corruptions of Christianity "establishes the groundwork of my view of this subject. . . ."[90] He recommended "an attentive perusal" of

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[89]The changing fortunes of Priestley's religious efforts in Northumberland are best followed in the series of Priestley's letters to Lindsey. See also Priestley, Northumberland, Feb. 20, 1800, to Rev. James Freeman, Boston, Massachusetts Historical Society Proceedings, 2d ser., 3:33-34, and Hugh Bellas, Sunbury, Pa., Sept. 22, 1849, to William B. Sprague, Annals of the American Pulpit, 8:306-7.

[90]Thomas Jefferson, April 25, 1803, to Martha Jefferson, quoted in Emily Millicent Sowerby, compiler, Catalogue of the Library of Thomas Jefferson, 5 vols. (Washington: Library of Congress, 1952-9), 2:120.

the work to his daughter, included it on many reading lists, and wrote that it had "always been a favourite of mine."[91] Indeed, Jefferson declared that, along with Priestley's History of Early Opinions and Middleton's writings, the History of Corruptions was "the basis of my own faith."[92] Jefferson's very high opinion of some of Priestley's other theological writings could be cited at length. It will suffice here to relate how Jefferson, who several times invited Priestley to visit him at the White House,[93] chose to reveal his private religious credo only to Benjamin Rush and Joseph Priestley.

In 1803 Jefferson received from Priestley a copy of the latter's Socrates and Jesus Compared. The "little treatise" spurred Jefferson to thinking about the syllabus of his view of Christianity which he had promised Rush some years before. After sending Priestley a short summary, the President wrote his well-known outline for Rush. Jefferson told Rush that, despite some differences, "in the main object

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[91] Sowerby, Catalogue, 2:120. The "favourite of mine" quote comes from a letter to Henry Fry, to whom Jefferson sent a copy of the work.

[92] Thomas Jefferson, Monticello, Aug. 22, 1813, to John Adams, Lester J. Cappon, ed., The Adams-Jefferson Letters; the Complete Correspondence between Thomas Jefferson and John Adams, 2 vols. (Chapel Hill: University of North Carolina Press for the Institute of Early American History and Culture, 1959), 2:367-70.

[93] Thomas Jefferson, Washington, letters of March 21, 1801, June 19, 1802, and Nov. 29, 1802, to Joseph Priestley, Ford, ed., Works of Jefferson, 9:216-19, 380-83, and 404-6, and the letter next cited.

of my syllabus we [Priestley and I] go perfectly together. . . ."[94] In spite of his great concern that the syllabus be kept confidential, the President sent a copy to Priestley; because Priestley was "the person of all others who would do it best,"[95] Jefferson urged Priestley to write a fuller account of the moral system of Jesus and its superiority over all other ethical formulations. Jefferson laid aside his planned selection of the "morsels of morality" from the New Testament (the so-called Jefferson Bible which he completed after Priestley's death), since the task was now in Priestley's "better hands."[96] Priestley surely did have reason to tell his friend Lindsey, "He is generally considered an unbeliever; if so, however, he cannot be far from us, and I hope in the way to be not only almost, but altogether what we are."[97]

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[94]Thomas Jefferson, April 9, 1803, to Joseph Priestley, Ford, ed., Works of Jefferson, 9:488-89; Thomas Jefferson, April 23, 1803, to Benjamin Rush enclosing letter of April 21 and religious syllabus, excerpts and facsimile in Sowerby, Catalogue, 2:172-74.

[95]Jefferson, April 9, 1803, as cited in footnote 93. Jefferson's efforts to get the syllabus he sent to Rush back after Rush's death, and his great concern over the publication of the letter to Priestley containing the summary (in Belsham's Memoirs of Lindsey) can be conveniently followed in Sowerby, Catalogue, 2:173-74.

[96]Thomas Jefferson, Washington, Jan. 29, 1804, to Joseph Priestley, Ford, ed., Works of Jefferson, 10:69-72; Priestley doubtless did not receive this letter before his death.

[97]Priestley, Northumberland, April 23, 1803, to Theophilus Lindsey, in Belsham, Memoirs of Lindsey, Appendix 12, p. 317; the letter is not now in the collection of "Priestley--Lindsey Letters" in Dr. Williams Library. Priestley

Jefferson was not the only American president to have read Priestley's theology. His predecessor John Adams had met Priestley and heard him preach before Priestley left England.[98] In 1796 Priestley dedicated the printed version of the Philadelphia sermons, which Adams had attended, to the Vice President. Politics brought the end of their friendship during the late 1790's, but Adams continued to pore over Priestley's theological works. Although Adams felt, "Gibbon had him [i.e. Priestley] right when he denominated his creed 'scanty'"[99] and although his comments were often critical, Adams read and carefully annotated many volumes of Priestley's theology.[100] In the renewed friendship of their old age Adams and Jefferson often discussed details of Priestley's religious writings in their correspondence.[101] Even George Washington, not known as a

dedicated the last four volumes of his General History of the Christian Church to Jefferson.

[98]L. H. Butterfield, ed., Diary and Autobiography of John Adams, 4 vols. (Cambridge: Harvard University Press, 1961), 3:189, 190; entries for April 19, 1786, and April 23, 1786. Adams first heard Priestley as he preached his annual sermons at Lindsey's Essex Street Chapel in London.

[99]John Adams, July 18, 1813, to Thomas Jefferson, Cappon, ed., Adams-Jefferson Letters, 2:361.

[100]Zoltán Haraszti, "John Adams on Dr. Priestley; His Marginal Notes in Priestley's Theological Works Now First Published," More Books; The Bulletin of the Boston Public Library 10 (1935) : 301-18; this appears in a slightly different form in Haraszti, Adams and the Prophets of Progress, Chapter 14.

[101]Cappon, ed., Adams-Jefferson Letters, 2 : passim.

great reader, apparently read at least one of Priestley's theological publications.[102]

Priestley's theological impact, as well as his influence on the host of other areas of knowledge to which he contributed, strikes most resoundingly on significant numbers of the eminent men and intellectuals of his age. Doubtless this is not entirely a result of the better records that have survived for such individuals, for the thought of Joseph Priestley was not likely to either have great affinity for or be read by many of the more ordinary sort of the time. Men like Jefferson, who lived through the closing years of that rationalist intellectual movement known as the Enlightenment found a great deal in Priestley that they could take on as their own. Priestley's writings did not offer a great original synthesis; they were not the product of an exceptionally innovative mind. Rather, they provided an encyclopedic survey of knowledge transformed by a special insight that had been maturing since John Locke. The cool mechanistic world of cause and effect that encompassed the entire Priestley corpus may not have meant much to many an English

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[102] Geffen, Philadelphia Unitarianism, p. 32 (and footnote 6 found on p. 56) reports that Charles L. Chandler, an emeritus professor at Ursinus College, was told by a member of First Unitarian Church of Philadelphia (Miss Frances A. Wister) that the noted antiquarian bookseller A. W. S. Rosenbach offered to sell her an underlined and annotated (in Washington's hand) copy of a Priestley work that had belonged to Washington. A. S. W. Rosenbach, A Catalogue of Rare Books of Six Centuries (Philadelphia and New York: The Rosenbach Co., 1935) offered for sale as Item no. 382 (p. 91) Washington's copy of Priestley's Discourses Relating to the Evidences . . . (1796) with Washington's autograph on the title page. The description does not mention annotation.

or American farmer or sailor, but it had become an orienting factor in the thought of many men of learning of the late-eighteenth and early-nineteenth centuries. Often, it would seem, these rationalists took up Priestley because he provided confirmation, scholarly support, or focus, for things they already had begun to believe. Jefferson, for example, embraced much of Priestley's theology because, despite its dogmatic detail, it placed central emphasis on morality and provided voluminous scholarship which demonstrated the historical development of many of the supernatural "corruptions" of Christianity which Jefferson's rationalist mind could not accept. Priestley produced clearly written works that summed up much of the advanced thought of the age, not volumes that had their impact from the sheer brilliance of his own arguments. Joseph Priestley was a factor in the intellectual life of the late Enlightenment period precisely because his work provided a catalyst or a confirmation for much that was in the minds of many thinkers of the day.

The particular brand of the prevailing spirit of the age which Priestley espoused was not widespread when he began to appear in print. In 1765 when he published his Chart of Biography Priestley felt obliged to justify his inclusion of a virtually unknown "favourite name" (i.e. Hartley) among the eminent historical figures.[103] As a result of Priestley's

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[103]Priestley, Description of a Chart of Biography, p. 17. Although I have been citing the 1785 edition, from some obsolete wording it is clear that this preface appears as in the original edition.

career, however, Hartley's work became comparatively widely known. This dissertation has displayed a variety of images of Priestley varying from "Gunpowder Priestley" to saintly patriarch, but it is only right that the last portrait in the gallery be Priestley's own, a self portrait in which he saw himself as the promulgator of the Hartleyan materialism which was at the center of his thought and which he brought to the notice of the late-eighteenth and early-nineteenth centuries.

Priestley's edition of Observations on Man was only the most obvious of a plethora of efforts prompted by this central commitment to Hartleyan metaphysics. We have seen that Priestley's published volumes are filled with extravagant recommendations of and citations to the Hartleyan thesis with which they are permeated. A natural corollary of the Hartleyan environmental determinist stance was a great concern for the virtuous formation of the tabula rasa minds of the young; out of this concern emerged a lifetime of educational effort. Biographical and historical charts, which Priestley explicitly touted as fitting the mechanisms of learning as elucidated by Hartley, were part of a host of productions designed to mold the young into persons with the practical skills and virtuous motives and habits necessary to function well amid the impinging forces of the contemporary world.

Priestley did not find his Hartleyan faith at variance with utter devotion to the cause of revealed

religion. Quite the contrary, since religion served the pre-eminently important purpose of promoting morality in the cause-and-effect scheme of the universe, Priestley committed the largest portion of his efforts to what he thought was a rational Christianity. This was not a Christianity full of mystery and mysticism, but rather a religion purged of the concept of an immaterial soul, a religion that was the source of the motivation for moral behavior. The divinely ordained clock-like cosmos, which Hartley had elucidated in the psychological realm and which Priestley explored in the scientific field, had Christianity as an integral part, serving its good purpose like all else in the mechanism of the "best of all possible worlds."

Determined though it was, Priestley's Hartleyan world did not exclude a great commitment to freedom of thought and, largely as a consequence of that commitment, a devotion to political liberty. Priestley wrestled mightily with the problems that determinism perennially presents for the notion of moral responsibility. There were no such difficulties in arguing for intellectual liberty; the free interchange of ideas was obviously necessary in a structure so ordained that truth emerged only from the interaction of concepts. The power of true ideas, which must not be restrained by bigotry or arbitrary government, would insure their eventual sway as physical entities in the minds of men.

In 1791 David Hartley's son sent the manuscript of a life of his father to Priestley. Hartley the younger

remarked in this biography that his father's "long neglected" system was now likely to be widely adopted. Priestley, who was never over-troubled with modesty, felt "some other person than myself might suggest, that it might not be improper to mention the person who has been chiefly instrumental in bringing it [i.e. Hartleyan materialism] into notice, and improving it."[104] It surely would not have been "improper," for Joseph Priestley had indeed brought Hartleyan materialism from obscurity to a considerable degree of influence. In 1825 when John Stuart Mill and his companions became virtually the last to take Observations on Man seriously, it was Priestley's edition that was their text.[105] Just then Priestley's voluminous works, permeated as they were with Hartley's ideas, were beginning to slip from view. Witnesses, however, remained. Coleridge's son bore the name Hartley, and Melville, a quarter of a century later, would know "Priestley on Necessity." Until he was forgotten a determined materialistic world remained at the core of the thought and the impact of Joseph Priestley.

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[104]Priestley, Jan. [9 or 10; unclear], 1791, to Theophilus Lindsey, "Priestley-Lindsey Letters."

[105]Theodore L. Huguelet, Introduction to facsimile edition of Observations on Man, pp. xii-xiii.

APPENDIX A

GENEALOGIES OF THE FAMILY OF JOSEPH PRIESTLEY

The following charts give the genealogy of Joseph Priestley and his descendants. They illustrate the relationship of the great chemist to a number of persons who appear in the text of the dissertation or who figure either in Priestley bibliography or in the history of the descent of Priestley artifacts. Such remote references as those to remnants of Priestley silver in the published diaries of a great-great-granddaughter (Marie Adelaide Belloc Lowndes) have contributed to my understanding of Priestley, and the tracing of descendants has led to moderate conviction that no cache of Priestley papers remain in descendants' hands.

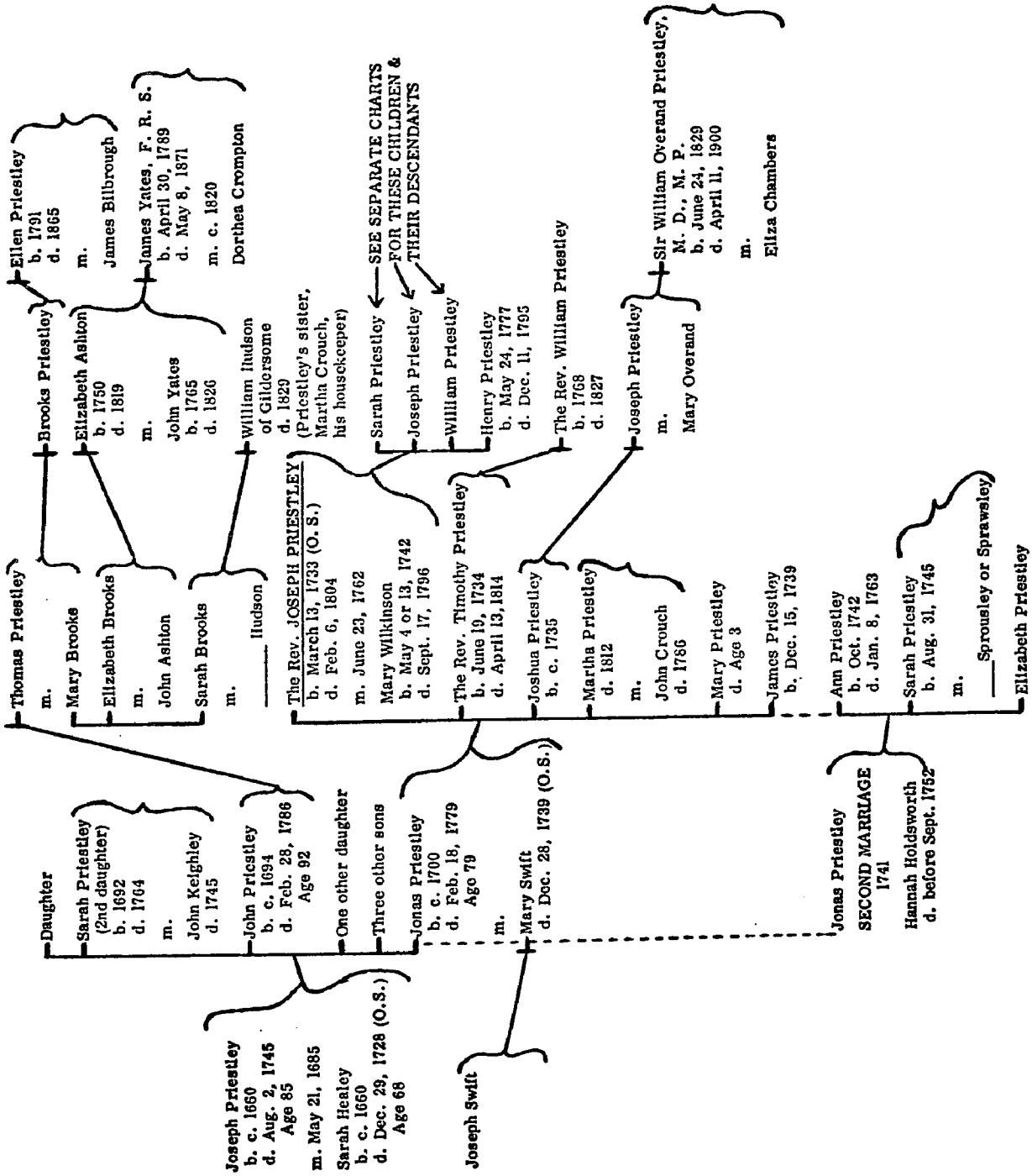
Joseph Priestley, who came from middling stock, has had a remarkably prominent set of descendants. Even after discounting some distant grandnephews and even more distant connections, who nonetheless published or collected in the Priestley field (Sir William Overand Priestley and James Yates), they include among many others Hilaire Belloc, Henry Hobson Richardson, Katherine Irene Finch (an English children's writer and educator), some notable Philadelphia socialites (the Button descendants), and an important family of American physicians. Even John Finch, who was

regarded by the family as a "black sheep" and about whom little is known, was a published author. His Travels in the United States of America and Canada (1833) includes an account of his pilgrimage to his grandfather's grave. Because of the importance of Priestley and the prominence of such a considerable number of his descendants, most of the relationships can be traced in published, though often obscure, sources. Some conflicting data (and a great many outright errors) exist, but great care has been exercised in selecting the most reliable information.

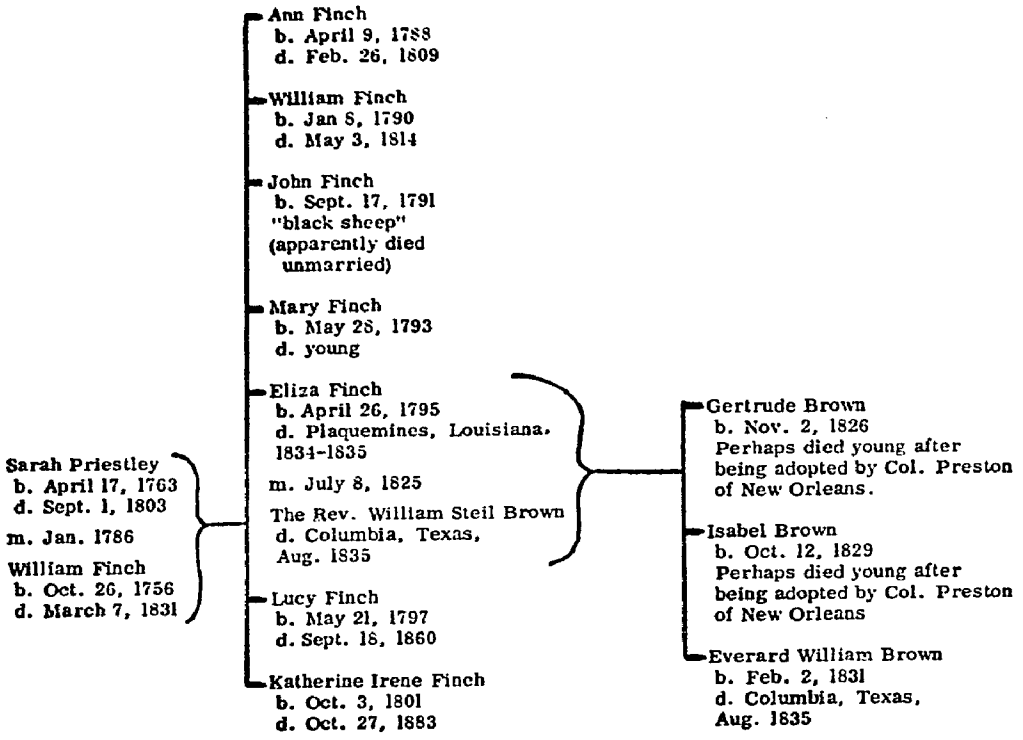
Examples of errors include: the most recent attempt at Priestley biography (Gibbes) is incorrect on the number of Priestley siblings and other matters; Lewis Mumford has Richardson a grandson instead of a great-grandson of Priestley; Douglas McKie wrote that James Yates (a great Priestley collector as well as important in his own right) descended from an uncle, which he did not, and all printed editions of the Memoirs have the date of the remarriage of Priestley's father as 1745 instead of the correct date, 1741.

In addition to Priestley's correspondence, will, and published writings and standard biographical dictionaries, sources include the articles and notes of Ronald A. M. Dixon of Thearne (who was especially interested in Priestley genealogy), Samuel Parkes' account of a visit to Birstal, Joseph Turner's Yorkshire Notes and Queries, Charles C. Sellers's The Priestley Family Collection (which has an

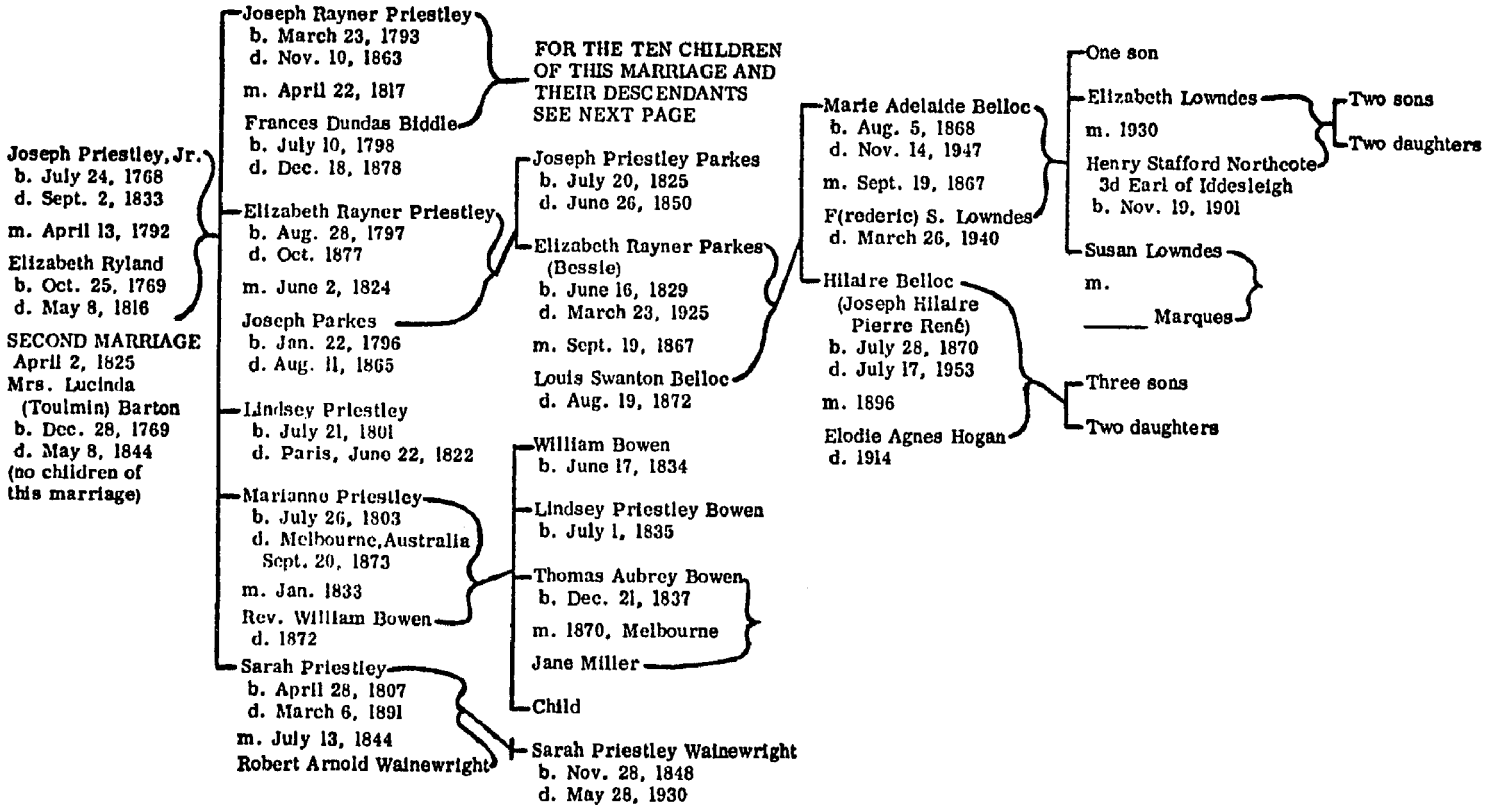
extensive genealogy centering on the descendants of Joseph Priestley, Jr.), the works by or about various of the published authors who appear on the charts, and a variety of other notes, obituaries, and other scraps too numerous to mention. With the exception of some of the latter, these items appear in the bibliography. The contemporary novelist and journalist J. B. Priestley, although from Yorkshire Priestleys, is not known to be immediately related to the subject of this dissertation. The chart for the descendants of William Priestley is the least complete, but due to the circumstances in which William left Northumberland (see Chapter VII), this branch of the family could not have fallen heir to Priestley artifacts.


Joseph Priestley
b. c. 1660
d. Aug. 2, 1745
Age 85
m. May 21, 1685
Sarah Healey
b. c. 1660
d. Dec. 29, 1728 (O.S.)
Age 68
Daughter
Sarah Priestley
(2nd daughter)
b. 1692
d. 1764
m.
John Keighley
d. 1745
John Priestley
b. c. 1694
d. Feb. 28, 1786
Age 92
One other daughter
Three other sons
Thomas Priestley
m.
Mary Brooke
Elizabeth Brooks
m.
John Ashton
Sarah Brooks
m.
_____ Hudson
Brooks Priestley
Elizabeth Ashton
b. 1750
d. 1819
m.
John Yates
b. 1765
d. 1826
William Hudson
of Gildersome
d. 1829
Ellen Priestley
b. 1791
d. 1865
m.
James Bilbrough
James Yates, F. R. S.
b. April 30, 1789
d. May 8, 1871
m. c. 1820
Dorthea Crompton
The Rev. JOSEPH PRIESTLEY
b. March 13, 1733 (O. S.)
d. Feb. 6, 1804
m. June 23, 1762
Mary Wilkinson
b. May 4 or 13, 1742
d. Sept. 17, 1796
(Priestley's sister,
Martha Crouch,
his housekeeper)
Sarah Priestley
Joseph Priestley
William Priestley
SEE SEPARATE CHARTS
FOR THESE CHILDREN &
THEIR DESCENDANTS
The Rev. Timothy Priestley
b. June 19, 1734
d. April 13, 1814
Henry Priestley
b. May 24, 1777
d. Dec. 11, 1795
Joshua Priestley
b. c. 1735
The Rev. William Priestley
b. 1768
d. 1827
Martha Priestley
d. 1812
m.
John Crouch
d. 1786
Joseph Priestley
m.
Mary Overand
Sir William Overand Priestley,
M. D., M. P.
b. June 24, 1829
d. April 11, 1900
m.
Eliza Chambers
Jonas Priestley
b. c. 1700
d. Feb. 18, 1779
Age 79
m.
Mary Swift
d. Dec. 28, 1739 (O.S.)
Joseph Swift
Mary Priestley
d. Age 3
James Priestley
b. Dec. 15, 1739
Jonas Priestley
SECOND MARRIAGE
1741
Hannah Holdsworth
d. before Sept. 1752
Ann Priestley
b. Oct. 1742
d. Jan. 8, 1763
Sarah Priestley
b. Aug. 31, 1745
m.
_____ Sprousley or Sprawsley
Elizabeth Priestley
d. as infant

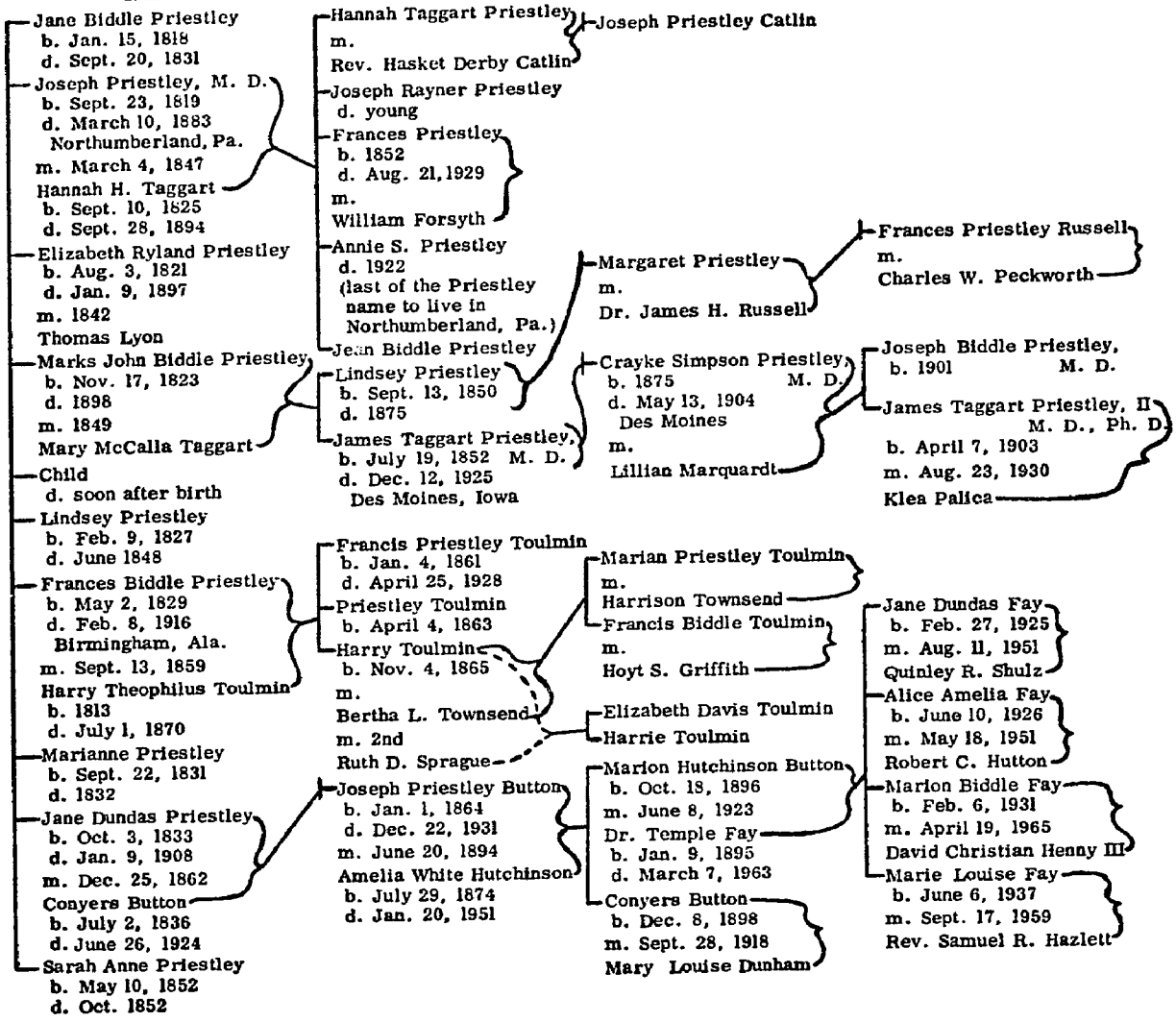
DESCENDANTS OF SARAH PRIESTLEY, ELDEST CHILD OF JOSEPH PRIESTLEY (1733-1804)



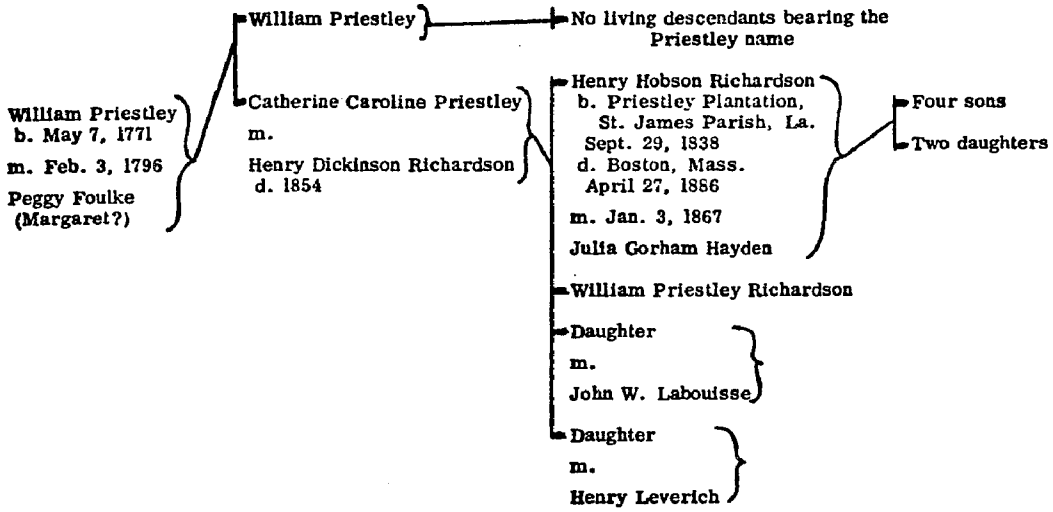
DESCENDANTS OF JOSEPH PRIESTLEY, JR., ELDEST SON OF JOSEPH PRIESTLEY (1733-1804)



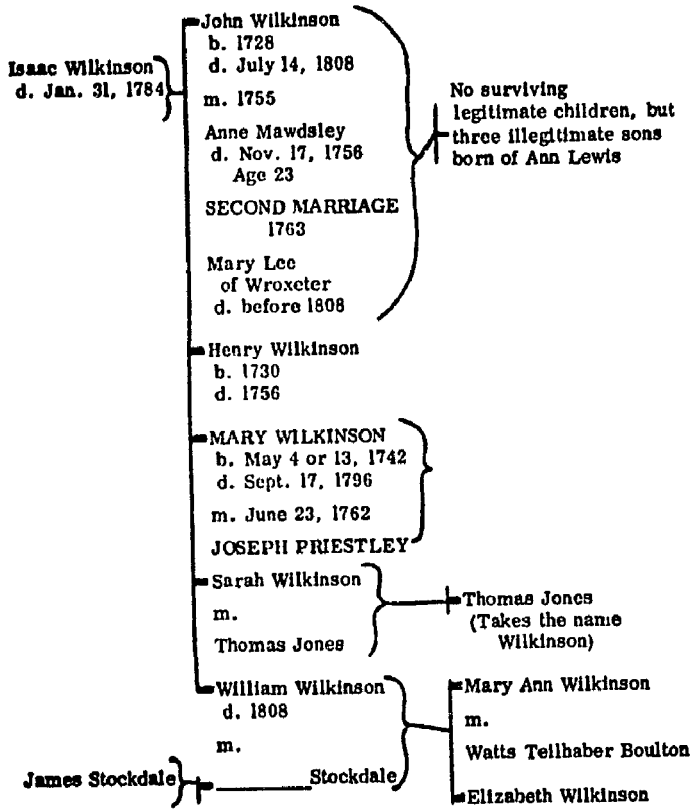
THE TEN CHILDREN OF JOSEPH RAYNER PRIESTLEY (GRANDSON OF JOSEPH PRIESTLEY, 1733-1804) AND THEIR DESCENDANTS

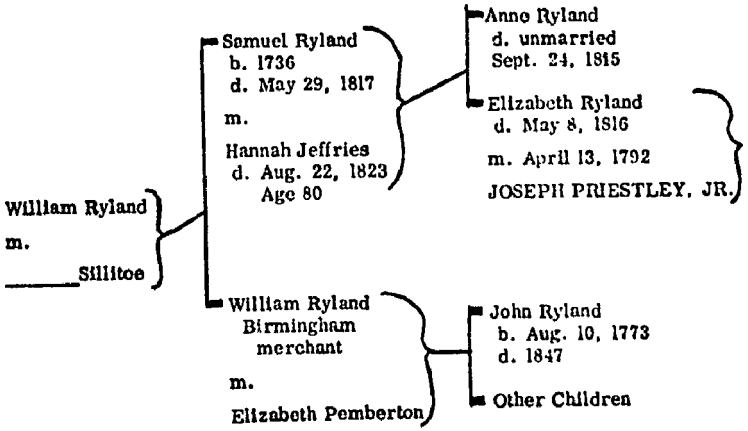


DESCENDANTS OF WILLIAM PRIESTLEY, SECOND SON OF JOSEPH PRIESTLEY, (1733-1804)



THE FAMILIES OF THE WIFE AND ONE DAUGHTER-IN-LAW of JOSEPH PRIESTLEY (1733-1804)





APPENDIX B

A CHRONOLOGY OF JOSEPH PRIESTLEY (1733-1804)

In the following chronology all of Priestley's changes of occupation and residence have been placed in upper case type. The titles of all of his separately published works are alphabetically arranged at the end of each year. Except in a few cases where extensive rewriting or additions were involved, later editions than the first have not been noticed. Periodical articles are also generally not included. In the typical eighteenth-century manner, Priestley's titles often nearly fill the page. Although great care has been exercised in following the wording on the title pages, some wordy phrases have been replaced by ellipses, and ellipses have not been placed at the end of titles in those cases where further nonessential wording appears on the imprint. A great deal of further information on Priestley's publications can be located through the bibliography of this dissertation, where full bibliographic information is provided for all of the editions cited in the footnotes.

Most of the biographical data has been compiled from Priestley's extant correspondence. An incomplete chronological list of his separate publications appears at the end of part 2 of volume 1 of The Theological and Miscellaneous

Works, but the titles are often paraphrased, and the date of first edition is sometimes wrong. The extensive (though not complete) bibliography appended to the DNB articles on Priestley is also chronologically arranged, but only after first having been divided into topical sections. An attempt at a complete chronological list of Priestley's scientific publications, including those in periodicals and translations, can be found in Appendix 3 of Robert Schofield's A Scientific Autobiography of Joseph Priestley. Joseph Priestley, ed., Dr. Watt's Historical Catechism, with Alterations (2d ed., Birmingham: 1788), of which there is a copy in the British Museum, is not included in the following chronology. I have been unable to discover when the first edition appeared; the work is omitted in all of the other Priestley bibliographies.

1733	March 13 (O.S.)	BORN AT FIELDHEAD, NEAR BIRSTAL, YORKSHIRE
1734	June 19	His brother Timothy born
c.1735		TAKEN TO MATERNAL GRANDFATHER JOSEPH SWIFT'S FARM AT SHAFTON TO LIVE Birth of a second brother, Joshua
1739	Dec. 15	Birth of James, his parents' sixth child
	Dec. 28	Death of his mother, Mary Swift Priestley RETURNS TO LIVE IN HIS FATHER'S HOUSEHOLD AT FIELDHEAD
1741		His father remarries
1742		ADOPTED BY HIS AUNT SARAH PRIESTLEY KEIGHLEY OF "OLD HALL," HECKMONDWIKE
1745		Death of his aunt's husband, John Keighley
	Aug. 2	Death of his grandfather Joseph Priestley

1749		Pastor Kirkby closes his school; Priestley's ill health makes his aunt decide he should no longer go to school, but should study independently to prepare for a job in a counting house in Lisbon
1751		Begins to drop orthodox Calvinism; becomes a Baxterian
1752	Sept.	Health improved, resumes his studies for the ministry ENTERS DAVENTRY ACADEMY
1754	Oct. 26	Begins reading Hartley's Observations on Man
1755		Writes first draft of "Institutes of Natural and Revealed Religion"
	June	BECOMES PASTOR OF THE PRESBYTERIAN CONGREGATION AT NEEDHAM MARKET, SUFFOLK
	Before leaving Needham	First visit to London, a month with a Mr. Angier who attempts to cure Priestley's stammer (at his aunt's expense)
1758	July	BECOMES PASTOR OF A CONGREGATION AT NANTWICH, CHESIRE, AND SOON OPENS A SCHOOL
1761	Sept.	BECOMES TUTOR OF LANGUAGES AND BELLES LETTRES AT WARRINGTON ACADEMY
	Publishes:	The Rudiments of English Grammar . . . with Observations on Style The Scripture Doctrine of Remission
1762	April-May	Priestley in charge of John Seddon's congregation and Warrington Academy while Seddon in London getting the Academy accredited with the Presbyterian Fund
	May 3	Moves into a new house at Warrington
	May 18	Ordained
	June 23	Marries Mary Wilkinson in her home town of Wrexham
	Prints:	A Course of Lectures on the Theory of Language and Universal Grammar [printed for his students]
1763	April 17	Birth of his first child, Sarah
1764	Dec. 4	The honorary degree of Doctor of Laws granted by the University of Edinburgh Death of his aunt Sarah Priestley Keighley

	Publishes:	No Man Liveth to Himself, a Sermon . . . before . . . Protestant Dissenting Ministers of the Counties of Lancaster and Chester, Met . . . May 16, 1764 to Carry into Execution a Scheme for the Relief of Their Widows and Children
1765	Late Dec.	Visit to London; meets and starts scientific relationship with John Canton, Benjamin Franklin (these two on Seddon's letter of introduction) and Richard Price
	Publishes:	A Chart of Biography (with Description) An Essay on a Course of Liberal Education for Civil and Active Life with Plans of Lectures on the Study of History
1766	March	By this time dealing with Joseph Johnson, his London bookseller and publisher for the rest of his life
	May 4	Discovers that charcoal conducts electricity well
	June 12	Elected member of the Royal Society
1767	July	BECOMES PASTOR OF MILL-HILL CHAPEL, LEEDS
	Publishes:	A Catechism for Children and Young Persons The History and Present State of Electricity, with Original Experiments
1768	Late Jan. or Feb.	To London on what is becoming a series of annual visits
	July 24	Birth of his second child, Joseph, Jr.
	Aug.	Moves to a different house in Leeds
	Late Aug.	Two week visit to Warrington for printing of 2d edition of History of Electricity
	Publishes:	"An Account of Rings, Consisting of all Prismatic Colours, Made by Electrical Explosions on the Surfaces of Pieces of Metal" [His first publication in the Philosophical Transactions of the Royal Society] An Essay on the First Principles of Government A Familiar Introduction to the Study of Electricity A Free Address to Protestant Dissenters on the Subject of the Lord's Supper The Rudiments of English Grammar . . . with Notes for the Use of Those Who Have Made Some Proficiency in the Language

1769	Late June	Visits Archdeacon Francis Blackburne at Richmond, Yorkshire, with Rev. William Turner and there starts his close friendship with Rev. Theophilus Lindsey
	Late Dec.	Fire at Joseph Johnson's bookshop destroys Priestley manuscripts and other effects
	Publishes:	Considerations on Church Authority, Occasioned by Dr. Balguy's Sermon on that Subject
		Considerations on Differences of Opinion Among Christians, with a Letter to the Rev. Mr. Venn in Answer to his . . . Examination of the Address . . . on . . . the Lord's Supper
		A Free Address to Protestant Dissenters, as Such
		A New Chart of History (with Description)
		The Present State of Liberty in Great Britain and her Colonies
		Remarks on Some Paragraphs in the Fourth Volume of Dr. Blackstone's Commentaries . . . Relating to Dissenters
		A Serious Address to Masters of Families, with Forms of Family-Prayer
		The Theological Repository, vol. 1 (editor and contributor)
1770	c. late Jan.	Priestley's wife apparently has a miscarriage or still-born child
	March	Makes his annual visit to London
	Publishes:	Additions to the Address to Protestant Dissenters on . . . the Lord's Supper . . . and a Letter to the Author of the Protestant Dissenter's Answer
		An Appeal to the Serious and Candid Professors of Christianity
		A Familiar Illustration of Certain Passages of Scripture
		A Familiar Introduction to the Theory and Practice of Perspective
		Letters to the Author of Remarks on Several Late Publications Relative to Dissenters
		The Triumph of Truth; Being an Account of the Trial of Mr. E. Elwall for Heresy and Blasphemy, at Stafford Assizes, 1726
1771	Feb. 11	Leaves on annual visit to London
	May 7	Birth of his third child, William
	Early Dec.	Offered position of naturalist on Cook's second voyage, but then the offer withdrawn when churchmen on the Board of Longitude object to him

	Publishes:	Letters and Queries Addressed to the Anonymous Answerer of an Appeal to the Serious and Candid Professors. . . . to the Rev. Mr. Tho. Morgan, and to Mr. Cornelious Caley
		The Theological Repository, vols. 2 and 3 (editor and contributor)
1772	Mid March	Leaves for five week visit to London without his wife, staying at Joseph Johnson's; presents first papers on gases to Royal Society
	Mid or late June	Franklin visits Priestley at Leeds
	Aug.	Shelburne calls on Priestley to discuss his offer of a post as librarian
	Dec. 2	Begins another visit to London
	Publishes:	Directions for Impregnating Water with Fixed Air
		The History and Present State of Discoveries Relating to Vision, Light, and Colours
		Institutes of Natural and Revealed Religion, vol. 1
		Observations on Different Kinds of Air [a preprint of his first chemical article which appeared in Royal Society Transactions for 1772, published in 1773]
		A Scripture Catechism Consisting of a Series of Questions with References to the Scriptures
1773	Jan. or Feb.	Visits Lancashire (probably Warrington)
	May 16	Preaches farewell sermon at Mill-Hill Chapel, Leeds
	June	MOVES TO CALNE TO BECOME LORD SHELBURNE'S LIBRARIAN (His estate, Bowood, is nearby)
	Nov. 30	Presented the Copley Medal at the anniversary meeting of the Royal Society in London; about this time Priestley was also elected one of the eight associates of the French Academy of Sciences
	Publishes:	An Address to Protestant Dissenters . . . on Giving the Lord's Supper to Children
		Institutes of Natural and Revealed Religion, vol. 2
		A Letter of Advice to those Dissenters who Conduct the Application to Parliament for Relief from Certain Penal Laws, with Various Observations Relating to Similar Subjects

		A Sermon Preached before the Congregation of Protestant Dissenters at Mill Hill . . . on Occasion of his Resigning
1774	Feb.-March	Is at Shelburne House, London, where he spends some months each winter while in Shelburne's service
	Aug. 1	Discovers dephlogisticated air (oxygen) at Calne
	Late summer and autumn	Tour through Holland, Flanders, and Germany, to Paris with Shelburne; meets Lavoisier and other French scientists
	Nov. 2	Arrives back in London
	Nov.	Discovers vitriolic acid air (sulphur dioxide), another of the at least seven important gas discoveries made by Priestley
	Publishes:	An Address to Protestant Dissenters . . . on the Approaching Election of Members of Parliament, with Respect to . . . Public Liberty . . . and American Affairs
		An Examination of Dr. Reid's Inquiry . . . Dr. Beattie's Essay . . . and Dr. Oswald's Appeal
		Experiments and Observations on Different Kinds of Air, vol. 1
		Institutes of Natural and Revealed Religion, vol. 3
		A Letter to a Layman on the Subject of the Rev. Mr. Lindsey's Proposal for a Reformed English Church
1775	c. Jan. 1	Goes to Shelburne House from Calne
	March 20	Franklin spends his last day in London with Priestley before sailing to America
	Late March	Home to Calne; laid up with boils
	Oct. 23	Arrives back at Shelburne House
	Christmas	At Calne for the holidays
	Publishes:	Considerations for the Use of Young Men, and the Parents of Young Men
		Experiments and Observations on Different Kinds of Air, vol. 2
		Hartley's Theory of the Human Mind . . . with Essays [Priestley's edition of Observations on Man]
		Philosophical Empiricism: Containing Remarks on a Charge of Plagiarism Respecting Dr H--s [Higgins], Interspersed with Various Observations Relating to Different Kinds of Air
1777	May 24	Birth of his fourth child, Henry
		His father goes bankrupt

	Publishes:	A Course of Lectures on Oratory and Criticism
		Disquisitions Relating to Matter and Spirit to Which is Added the History of the Philosophical Doctrine Concerning the Origin of the Soul . . . with its Influence on Christianity
		The Doctrine of Philosophical Necessity Illustrated; Being an Appendix to the Disquisitions [vol. 2 of the above]
		Experiments and Observations on Different Kinds of Air, vol. 3
		A Harmony of the Evangelists in Greek . . . [with] Critical Dissertations in English
1778	Early Feb.	To London to stay for two to three months
	Publishes:	A Free Discussion of the Doctrines of Materialism and Philosophical Necessity in a Correspondence Between Dr. Price and Dr. Priestley
		Miscellaneous Observations Relating to Education, More Especially as it Respects the Conduct of the Mind
1779	Feb. 18	Death of his father, Jonas Priestley
	Late summer	Priestley at Calne; wife and daughter go to Leeds via London and Priestley expects them to be gone a year
	Publishes:	The Doctrine of Divine Influence on the Human Mind . . . in a Sermon
		Experiments and Observations Relating to Various Branches of Natural Philosophy; with a Continuation of the Observations on Air, vol. 1
		A Letter to the Rev. John Palmer in Defence of the Illustrations of Philosophical Necessity
1780	Spring	Priestley (in London) gravely ill with gall stones
	June	LEAVES SHELBURNE'S EMPLOY
	Sept.	MOVES TO BIRMINGHAM
	Dec.	Made a member of the Imperial Academy of Sciences at St. Petersburg
	Dec. 31	TAKES OFFICE AS PASTOR TO THE NEW MEETING, BIRMINGHAM
	Publishes:	A Free Address to Those Who Have Petitioned for the Repeal of the Late Act of Parliament in Favour of Roman Catholics
		A Harmony of the Evangelists in English; With Critical Dissertations . . . and Notes for the Use of the Unlearned

A Letter to Jacob Bryant, Esq., in Defence of Philosophical Necessity
Letters to a Philosophical Unbeliever, pt. 1
A Second Letter to the Rev. Mr. John Palmer, in Defense of the Doctrine of Philosophical Necessity
Two Letters to Dr. Newcome, Bishop of Waterford, on the Duration of our Saviour's Ministry

1781 Aug. 20 — Goes to Brighthelmstone (Brighton, Sussex) for a few weeks with William Russell with the hope it will complete his recovery

Publishes:
Experiments and Observations Relating to Various Branches of Natural Philosophy; With a Continuation of the Observations on Air, vol. 2
A Sermon, Preached December the 31st, 1780, at the New Meeting in Birmingham on Undertaking the Pastoral Office in that Place
A Third Letter to Dr. Newcome, Bishop of Waterford, on the Duration of our Saviour's Ministry

1782 Late March-early April — Visit to London

Elected honorary member of American Academy of Arts and Sciences

Publishes:
Additional Letters to a Philosophical Unbeliever in Answer to Mr. William Hammon
An History of the Corruptions of Christianity, 2 vols.
The Proper Constitution of a Christian Church Considered in a Sermon Preached . . . Nov. 3, 1782 . . . [with] a Prefatory Discourse Relating to the Present State of Those Who are Called Rational Dissenters
Two Discourses: i. On Habitual Devotion; ii. On the Duty of Not Living to Ourselves

1783 Late April-early May — Annual visit to London

Publishes:
Forms of Prayer and other Offices, for the Use of Unitarian Societies
A General View of the Arguments for the Unity of God
Letters to Dr. Horsley in Answer to his Animadversions on the History of Corruptions

		A Reply to the Animadversions on the History of Corruptions . . . in the Monthly Review for June 1783
1784	Publishes:	Letters to Dr. Horsley, pt. 2 Remarks on the Monthly Review of the Letters to Dr. Horsley in Which the Rev. Mr. Samuel Badcock . . . is Called Upon to Defend Theological Repository, vol. 4 (editor and contributor)
1785	Jan. 22	Elected member American Philosophical Society
	Before May	Elected member Philosophical Society at Orleans, France
	Publishes:	The Importance and Extent of Free Inquiry in Matters of Religion; a Sermon . . . November 5, 1785 . . . [with] Reflections on the Present State of Free Inquiry . . . and . . . on some Passages in Mr. White's Sermon . . Mr. Howes's Discourse . . . and a Pamphlet Entitled, "Primitive Candour"
1786	Jan.	His daughter marries William Finch [there is contradictory evidence on this date, but definitely 1785 or 1786]
	June	Wife "very ill" Elected member of Society of Science at Harlem
	Publishes:	Experiments and Observations Relating to Various Branches of Natural Philosophy; With a Continuation of the Observations on Air, vol. 3 An History of Early Opinions Concerning Jesus Christ, 4 vols. Letters to Dr. Horsley, part iii . . . to Which are Added Strictures on Mr. Howe's Ninth Number Letters to the Jews, Inviting them to an Amicable Discussion of the Evidences of Christianity Theological Repository, vol. 5 (editor and contributor)
1787	March 27	Arrives in London for annual visit
	Sept.	Spends a month at brother-in-law John Wilkinson's home at Castlehead; begins to write memoirs to be published after his death

Publishes: An Account of a Society, for Encouraging the Industrious Poor With . . . Some Considerations on the State of the Poor in General
Discourses on Various Subjects, Including Several on Particular Occasions [Many, but not all, of these previously published individually]
A Letter to the Right Honourable William Pitt . . . on Subject of Toleration and Church Establishments; Occasioned by his Speech Against the Repeal of Test and Corporation Acts
Letters to a Philosophical Unbeliever, pt. ii, Containing . . . Animadversions on . . . Mr. Gibbon's History of the Decline and Fall
Letters to the Jews, pt. 2
Letters to Dr. Horne . . . to the Young Men . . . at the Universities of Oxford and Cambridge; to Dr. Price; and to Mr. Parkhurst, on the Subject of Person of Christ [Later editions published as Defenses of Unitarianism for the Year 1786]

1788 Late Aug. Goes to visit Samuel Galton at the seaside near Exeter for his health

Oct. Priestley and wife visit William Tayleur (wealthy theological patron) at Shrewsbury

Oct. Has recently had a bad attack of passing gall stones

Publishes: Defences of Unitarianism for the Year 1787 Containing Letters to the Rev. Dr. Geddes, to the Rev. Dr. Price, part ii, and . . . Relating to Mr. Howes's Appendix to his Fourth Volume of Observations on Books, a Letter by an Undergraduate of Oxford, Dr. Croft's Bampton Lectures, and Several Other Publications
An History of the Sufferings of Mr. Lewis de Marolles, and Mr. Isaac le Ferre . . . Translated from the French about the Beginning of this Century, and Now Republished by Joseph Priestley [with a preface by Priestley]
Lectures on History and General Policy
A Sermon on the Subject of the Slave Trade
Theological Repository, vol. 6 (editor and translator)

1789	April	Annual visit to London
	July	Theophilus Lindsey and wife visit the Priestleys
	July	Priestley's son William in France with his uncle William Wilkinson as the French Revolution begins
	Sept. 8	Leaves with daughter and son-in-law for visit to John Wilkinson at Castlehead
	Sept. 24	Leaves for home
	Oct.	Wife gravely ill with "consumptive" symptoms
	Nov.	Wife goes to Heath to stay at daughter's for a few weeks. Priestley goes over there occasionally and is lonely
	Publishes:	The Conduct to be Observed by Dissenters, in Order to Procure the Repeal of the Corporation and Test Acts . . . in a Sermon . . . at Birmingham, Nov. 5, 1789
1790	Jan. 24	One of the servants is fired on by robbers between 3 and 4 a.m., but they don't get in
	April 13	Arrives in London for annual visit
	May 7	Arrives back home
	June	Wife's consumptive symptoms increase alarmingly
	July	Wife spends some time at daughter's at Heath where she always thinks she is better
	July	Dispute between brothers-in-law John and William Wilkinson is so bad that the lawsuits can now be foreseen
	Early Aug.	Lindsey visits
	Sept.	To Leeds with wife for a month to visit friends
	Oct.-Nov.	Gravely concerned over the futures of his sons Joseph and William; John Wilkinson is not going to put Joseph high in his iron works as expected
	Publishes:	Defenses of Unitarianism for the Years 1788 and 1789, Containing Letters to Dr. Horsley . . . the Rev. Mr. Barnard, the Rev. Dr. Knowles, and the Rev. Mr. Hawkins
		Experiments and Observations on Different Kinds of Air . . . In Three Volumes, Being the Former Six Abridged and Methodized, with Many Additions
		Familiar Letters, Addressed to the Inhabitants of Birmingham in Refutation of Several Charges Advanced Against the Dissenters by the Rev. Mr. Madan [Published first in

		five parts, then together with the Letter to Burn, below]
		A General History of the Christian Church to the Fall of the Western Empire, 2 vols.
		Letter to the Rev. Edward Burn . . . Concerning the Person of Christ
		Anthony Collins, A Philosophical Inquiry Concerning Human Liberty [Priestley's edition with his preface]
		Reflections on Death, a Sermon on the Occasion of the Death of the Rev. Robert Robinson
		A View of Revealed Religion; a Sermon Preached at the Ordination of the Rev. William Field . . . July 12, 1790
1791	Feb.	Priestley looking for someone to sponsor his son Henry's education so that he can succeed Priestley
	Feb.	Joseph Jr. accepts a position leading to partnership with Ashworth, a Manchester merchant
	Feb.	By this point John Wilkinson is not on speaking terms with Priestley
	April 11	Leaves Birmingham for his annual London visit; to stay three Sundays and then go to Manchester on the way home; stays at Samuel Vaughan's in London as he has in recent years
	July 14	BEGINNING OF "CHURCH AND KING" RIOTS; PRIESTLEY'S CHURCH AND HOME DESTROYED
	August	Priestley in London where he went after the riots; wife stays at Heath as daughter is expecting and won't be without her
	August	John Wilkinson offers his aid to Priestley; reconciliation
	Sept.	DECIDES TO SETTLE AT CLAPTON IN THE HACKNEY AREA, NEAR LONDON
	Dec. 4	ASSUMES PASTORATE OF GRAVEL-PIT MEETING, HACKNEY
	Publishes:	An Appeal to the Public, on the Subject of the Riots in Birmingham
		A Discourse on the Occasion of the Death of Dr. Price
		The Duty of Forgiveness of Injuries: A Discourse Intended to be Delivered Soon after the Riots in Birmingham
		The Evidence of the Resurrection of Jesus Considered in a Discourse . . . at Buxton . . . Sept. 19, 1790, to which is Added an Address to the Jews

		Letters to the Members of the New Jerusalem Church . . . Swedenborg
		Letters to the Right Honourable Edmund Burke, Occasioned by His Reflections on the Revolution in France
		Original Letters by the Rev. John Wesley . . . Illustrative of His Early History to Which is Prefixed an Address to the Methodists
		A Particular Attention to the Instruction of the Young Recommended in a Discourse Delivered at the Gravel-pit Meeting in Hackney . . . on Entering the Office of Pastor
		Political Dialogues, Number I, On the General Principles of Government
		The Proper Objects of Education in the Present State of the World . . . Delivered on Wednesday, the 27th of April, 1791 . . . to the Supporters of the New College at Hackney
1792	April	Priestley goes to the Assizes at Warwick about his damage claim under the riot act
	April 13	His son Joseph marries Elizabeth Ryland
	Sept. 13	Accepts the French citizenship bestowed by the National Assembly; rejects a position in the forthcoming National Convention
		His son William goes back to France
		Begins lecturing on chemistry and history gratis at Hackney College
	Publishes:	An Appeal to the Public, on the . . . Riots, pt. 2
		Letters to a Young Man, Occasioned by Mr. Wakefield's Essay on Public Worship to Which is Added a Reply to Mr. Evanson's Objections to the Lord's Day
1793	June	Rioting in Dudley near Heath, where wife is visiting daughter (for childbirth), is cause of concern
	July 15	Goes to Gloucester to visit William Russell for a week
	First week of Sept.	Sons Joseph and Henry sail for America (after delay by storms) to join William who has gone there from France
	Publishes:	Experiments on the Generation of Air from Water, to Which are Prefixed Experiments Relating to the Decomposition of Dephlogisticated and Inflammable Air

		Letters to a Young Man, part ii, Occasioned by Mr. Evanson's Treatise on the Dissonance of the Four Generally Received Evangelists
		Letters to the Philosophers and Politicians of France on the Subject of Religion
		A Sermon Preached at the Gravel Pit Meeting . . . April 19th, 1793 . . . for a General Fast
1794	Feb. 6	William Russell family arrives for a visit
	Early March	Mrs. Priestley has a return of spitting up blood
	March 30	Delivers Farewell Sermon at Gravel Pit Meeting, Hackney
	April 7	Priestley and wife board the "Sansom" at Gravesend
	June 4 c. 5 p.m.	GOES ON SHORE AT THE BATTERY, NEW YORK CITY
	June 19	Reaches Philadelphia; does not like the city, finds it too expensive, and soon decides he will not live there until the proposed settlement is ready
	July 11	LEAVES PHILADELPHIA FOR NORTHUMBERLAND, WHERE HE LIVES OUT THE REST OF HIS LIFE
	Aug.	Buys land on the Susquehanna River in Northumberland on which to build his home and laboratory
	Sept.	Joseph, Jr. and his partners have given up their land settlement scheme
	Nov. 11	Elected to the chair of chemistry at the University of Pennsylvania, which he refuses
	Publishes:	An Answer to Mr. Paine's Age of Reason, Being a Continuation of Letters to the Philosophers and Politicians of France
		Discourses on the Evidences of Revealed Religion [delivered in England; two American sets will follow]
		Heads of Lectures on a Course of Experimental Philosophy, Particularly Including Chemistry; Delivered at the New College in Hackney
		The Present State of Europe Compared with Ancient Prophecies; A Sermon Preached . . . February 28, 1794 . . . for a General Fast . . . with a Preface Containing the Reasons for the Author's Leaving England
		The Use of Christianity, Especially in Difficult Times . . . being the Author's Farewell Discourse

1795	Jan.	Losing his front teeth
	May-Aug.	A small house he has purchased as his temporary residence is being repaired
	July	Son William returns from a year in New England and seems a much improved person; his brother Henry divides his farm land with him
	July	Wife has 2d blood-spitting episode in America
	Aug.	Wife papering rooms in temporary house by herself
	Dec. 11	Death of his son Henry
	Dec.	Only servant is a black slave hired by the week; the servant problem is to remain something Priestley sees as very serious
	Publishes:	Observations on the Increase of Infidelity, First Prefixed to the American Edition of the Letters to Philosophers and Politicians . . . But Now Much Enlarged
1796	Feb. 3	His son William marries Peggy Foulke
	Feb.	Begins course of sermons in Philadelphia; stays there about two months (without wife) in the house William Russell's family is occupying
	July	Mrs. Priestley hopes to get a servant before winter; Priestley tells brother-in-law John Wilkinson that the difference in their style of living can't be imagined
	Sept. 17	Death of his wife
	Publishes:	Considerations on the Doctrine of Phlogiston and the Decomposition of Water
		Discourses Relating to the Evidences of Revealed Religion, Delivered in the Church of the Universalists, Philadelphia, 1796 (vol. 2 of 1794 work)
		Experiments and Observations Relating to the Analysis of Atmospherical Air; Also Farther Experiments Relating to the Generation of Air from Water Read Before the American Philosophical Society . . . and Printed in Their Transactions To Which are Added, Considerations on the Doctrine of Phlogiston, and the Decomposition of Water, Addressed to Messrs. Berthollet, etc. [as the title indicates, includes the first publication above]
		Unitarianism Explained and Defended in a Discourse . . . at Philadelphia

1797	Jan.	Priestley in Philadelphia to deliver second set of sermons
	Jan.	His son William found unconscious, nearly frozen to death trying to walk to Philadelphia from Northumberland
	Before April	Son-in-law William Finch goes bankrupt
	Publishes:	An Address to the Unitarian Congregation at Philadelphia Delivered on Sunday, March 5, 1797
		The Case of Poor Emigrants Recommended, in a Discourse Delivered at the University Hall in Philadelphia
		Considerations on the Doctrine of Phlogiston and the Decomposition of Water, pt. 2
		Discourses Relating to the Evidences of Revealed Religion, Delivered in Philadelphia, vol. 2
		Letters to Mr. Volney, Occasioned by a Work of His Entitled Ruins and By His Letter to the Author
		An Outline of the Evidences of Revealed Religion
1798		Finally moves into the house his wife had planned and worked so hard on; Joseph, Jr. and his family, with whom he has been living, share the house with him
	Late in the Year	John Vaughan, who holds most of Priestley's financial assets, is preparing to declare bankruptcy; Priestley has a landed security for the funds, but the lands can't be converted into cash until the distant future
1799	Early Jan. or Late Dec.	Joseph, Jr. sails for England to discuss John Wilkinson's plans for him with Wilkinson
	March	Has finally dropped the idea of going to France, something he has been strongly considering, off and on for a couple years
	Sept.	His son William and his family have become extremely jealous of Joseph, Jr. and have written complaining of Joseph, Jr. to their sister in England
	Publishes:	A Comparison of the Institutions of Moses with Those of the Hindoos and Other Ancient Nations; With Remarks on Mr. Dupuis's Origin of All Religions, the Laws and Institutions of Moses Methodized, and an Address to

		the Jews on the Present State of the World and the Prophecies Relating to It
		Letters to the Inhabitants of Northumberland
1800	April 14	Priestley household poisoned
	Aug.	Joseph, Jr. returns from England
	Oct.	First hears of his £ 2000 legacy from Elizabeth Rayner (died July 11, 1800), a wealthy widow who was his most generous theological patron; other theological patrons continue to assist him; Joseph, Jr. also in the will
		About this time Samuel Galton, the only scientific patron who continued during the American years, ceases to contribute
	Publishes:	The Doctrine of Phlogiston Established, and That of the Composition of Water Refuted
1801	Jan.	To Philadelphia with Joseph, Jr. (going on business) and his wife
	March	Seriously ill; treated by his friend Benjamin Rush
	April 17	Reaches Reading on his way home to Northumberland
	Publishes:	An Inquiry into the Knowledge of the Hebrews Concerning a Future State
1802		Becomes quite deaf
	Publishes:	A General History of the Christian Church from the Fall of the Western Empire, vols. 1 and 2
1803	Feb.	Goes to Philadelphia for his last visit with Joseph, Jr. and his daughter-in-law
	March 5	American Philosophical Society Dinner in Priestley's honor
	Late May	Injures his left hip in a fall at home; for some time he has thought he may be dying, but continues to work to his last hour
	Sept. 1	Death of his daughter Sarah Priestley Finch
	Publishes:	The Doctrine of Phlogiston Established, With Observations on the Conversion of Iron into Steel, in a Letter to Mr. Nicholson

A General History of the Christian Church from the Fall of the Western Empire, vols. 3 and 4
A Letter to the Rev. John Blair Linn . . . in Defense of . . . Socrates and Jesus Compared
Notes on All the Books of Scripture, vol. 1
The Originality and Superior Excellence of the Mosaic Institutions Demonstrated (This pamphlet largely taken from the Notes)
A Second Letter to the Rev. John Blair Linn . . . in Reply to His Defence of the Doctrines of the Divinity of Christ and Atonement
Socrates and Jesus Compared

1804 Feb. English friends are arranging a nearly £400 annual subscription because they hear that his £200 a year from John Wilkinson has ended

Feb. 6 c. 11 a.m. Death of Joseph Priestley

Publishes:
The Doctrines of Heathen Philosophy Compared with Those of Revelation [Printed posthumously; includes the text of Socrates and Jesus Compared]
Index to the Bible [Printed posthumously]
Notes on All the Books of the Scripture, vols. 2, 3, and 4 [Partly printed posthumously]

Other Posthumous Published Works:

Discourses on Various Subjects, Intended to Have Been Delivered in Philadelphia, To Which are Added, Some Others Selected from the Same Author (Northumberland: John Binns, 1805) [The first nine sermons had been left at his death. The first four of these were republished the following year as Four Discourses Intended to Have Been Delivered at Philadelphia (1806) and were included in The Theological and Miscellaneous Works. The other five, however, were not and have remained unnoticed by Priestley scholars. They are: "On the Necessity of Self-Examination" (on Matt. 5:27); "Having Our Conversation in Heaven" (on Phill. 3:20); "Doing All to the Glory of God" (on 1 Cor. 10:31); "Resignation to the Will of God" (on 1 Sam. 3:18); and "On Being Perfect as God is Perfect" (on Matt. 5:18)]

The Leeds Infirmary, A Sermon . . . First Preached at Mill Hill Chapel, in the Year 1768 . . . Now for the First Time Printed (1910)

"Letters to the Bishops" [Priestley's summary of the Horsley controversy written in 1790, but not published], partially printed in Thomas Belsham, editor, Joseph Priestley, Tracts in Controversy with Bishop Horsley . . . To Which is Annexed . . . Four Letters to the Bishops . . . Never Before Printed (1815)

Memoirs of Dr. Joseph Priestley to the Year 1795, Written by Himself (1806)

APPENDIX C

A BIBLIOGRAPHY OF THE PRIESTLEYAN TRINITARIAN CONTROVERSY

The following pages give some indication of the scope and importance of the theological controversy that began with the publication of Priestley's An History of the Corruptions of Christianity in 1782. This debate, which has been discussed in Chapter IV, was by far the most significant of Priestley's many theological altercations. Several periodicals were deluged with letters to the editor,[1] as this controversy enveloped the English theological world in the 1780's. Although this bibliography is probably not complete (and I do not pretend to have yet seen all of the items by Priestley's opponents listed here) it conveys a sense of the nature of the debate. That some listings came from the British Museum Catalog of Printed Books is betrayed by the lack of publishers in those citations. As opponents vehemently opposed Priestley's arguments, he replied, they answered the replies, supporters joined in on both sides, and a staccato rhythm of charge and countercharge developed into one of the most voluminous intellectual debates of the period.

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[1]Generally these have not been included here. See especially the Gentleman's Magazine and the Monthly Review.

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Like Priestley scholars before me, I am embarrassed by the vast quantity of materials relating to Joseph Priestley. In a real sense Priestley bibliography is nearly coextensive with the whole of materials on intellectual matters in England and America in the period; few persons of prominence are not involved in one way or another. What follows can only provide a record of my major debts and list all the sources that happen to be cited in the footnotes. The Priestley materials that I know of or have used are represented in a card file more than twice as large as what has been included here.

Several rather arbitrary limitations have been placed on what follows. In the section on Priestley's printed works I have listed only those editions actually cited in footnotes. A complete list of Priestley's separate publications has already been provided in Appendix B, and there are printed Priestley bibliographies. The bibliography of Priestley's printed works is a whole separate topic in itself. I have limited my contribution to a considerable number of corrections and additions in the footnotes and in Appendix B. I have, of course, seen many other editions than those that follow. Although Priestley deserves a better bibliography than Crook's, it serves many purposes well. Most of the

opponents of Priestley in theological controversy that I have sampled are listed in Appendix C and are not repeated here.

Priestley kept both diaries and incoming letters, but (with the exception of the 1754 diary that I am the first Priestley scholar to use) those that survived the Birmingham riots were apparently destroyed by Joseph Priestley, Jr. Priestley several times expressed concern about the confidentiality of his correspondents, and Joseph, Jr. probably had this in mind. Although I have not yet been to England, a photocopy of the Priestley entries in the personal index of the National Register of Archives of the Royal Commission on Historical Manuscripts and the searching of a number of printed manuscript guides convince me that I have seen (either in print or in manuscript) the major known collections of Priestley correspondence. In what follows I have not included the bulk of those places where only one or two Priestley letters appear.

While the entries that follow are decidedly of varying worth, I have wanted to provide the reader a thorough list of the items cited; some quite bad works on Priestley have contained or led me to invaluable information. In those few cases where two editions of a Priestley work have been cited in the footnotes, all of the short form citations refer to the first edition. The only exception is the Letters to the Inhabitants of Northumberland where the short form citations refer to the more convenient second edition. I owe an incalculable debt to the printed catalogs of several great

libraries, the National Union Catalog of Printed Books, and those indispensable tools of historians, indexes of all sorts and descriptions. They, like a number of friends over the years, have led me to a great deal of what I know about Joseph Priestley.

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Oxford, England. Manchester College Oxford.
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