

Robert Boyle and the Limits of Reason

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Contents

Preface	page ix
Acknowledgments	xv
Introduction	I
Robert Boyle as Lay Theologian	I
Boyle's Early Responses to Religious Controversies	10
Liberty of Conscience	14
"Love of Truth" and "Love of Peace"	19
Part I The Theological Context	
1 Things above Reason: Medieval Context and Concepts	27
Irenaeus and Clement of Alexandria	28
Thomas Aquinas	29
Double-truth and the Law of Noncontradiction	31
Lorenzo Valla	35
Two Approaches Summarized	36
Anglicans and Puritans	37
2 The Threat of Socinianism	42
The Protestant Background	42
Early Socinianism	43
The "Englishing" of Socinianism	47
Boyle's Response to Socinianism (c. 1652)	55
Other Responses to Socinianism	59
Conclusions	73
3 Predestination Controversies	76
Arminians versus Calvinists	77
Doctrinal Issues	79
Boyle's <i>Seraphic Love</i>	82
Howe's <i>Reconcilableness</i> and Hammond's <i>Pacifick Discourse</i>	85
4 Theology and the Limits of Reason	95
<i>Style of the Scriptures</i>	95

<i>Reconcilableness of Reason and Religion</i>	97
<i>Things above Reason</i>	100
The Charge of Enthusiasm and <i>Advices</i>	108
Conclusions	113
Part II The Context of Natural Philosophy	
5 Philosophies of Nature and their Theological Implications	121
The Aristotelians	123
The Cambridge Platonists	126
The “Chymical” Tradition	129
6 Sources of Knowledge	137
Scriptural Revelation	137
Personal Revelation	141
Abstract Reason and Innate Ideas	144
Sensory Perception	146
7 The Limits of Reason and Knowledge of Nature	151
The Incomprehensible, the Inexplicable, and the Unsociable	152
The Task of the Natural Philosopher	161
Evaluation of Alternative Theories of Matter	168
The Question of the Falsity of Rejected Hypotheses	175
The Question of the Truth of the Corpuscular Hypothesis	179
Advantages of the Corpuscular Hypothesis	180
Some Things not Explicable By any Means	184
The Question of Progress in Natural Philosophy	186
8 Boyle’s Voluntarism and the Limits of Reason	189
The Seventeenth-Century Background	190
Specific Aspects of Boyle’s Voluntarism	200
God’s Will and Human Reason	206
The Christian Virtuoso’s Final Reward	210
Conclusion	212
Bibliography	220
Index	239

Introduction

Robert Boyle as Lay Theologian

Robert Boyle's status as a lay theologian was recognized in the seventeenth century and has been acknowledged ever since. In the sermon preached at Boyle's funeral in 1692, Gilbert Burnet, Bishop of Salisbury and one of Boyle's confessors, characterized him as one of those individuals who

have directed all their enquiries into Nature to the Honour of its great Maker: And have joynd two things, that how much soever they may seem related, yet have been found so seldom together, that the World has been tempted to think them inconsistent; A constant looking into Nature, and a yet more constant study of Religion, and a Directing and improving of the one by the other.¹

In 1701, Jeremy Collier, in his *Great Dictionary*, placed more emphasis on Boyle as a lay theologian than on Boyle as a natural philosopher.² And in his *Memoirs of the Lives and Characters of the Illustrious Family of the Boyles*, Eustace Budgell described the relationship between Boyle's theological writings and his scientific writings much as had Burnet, noting that he had "often blended *Religion* and *Philosophy* happily enough together; and made each serve to illustrate and embellish the other."³ Similar characterizations of Boyle can be found in *Remarks on*

1. Gilbert Burnet, *A Sermon Preached at the Funeral of the Honourable Robert Boyle at St. Martins in the Fields, January 7, 1691/2* (London, 1692), p. 8. Burnet's sermon is now available in *Robert Boyle by Himself and His Friends, with a fragment of William Wotton's lost "Life of Boyle,"* edited by Michael Hunter (London: William Pickering, 1994); the passage quoted is on p. 39.
2. Jeremy Collier, *The Great Historical, Geographical, Genealogical and Poetical Dictionary*, 2nd edition, 2 vols. (London, 1701), s.v. "Robert Boyle" (alphabetized under "R").
3. Eustace Budgell, *Memoirs of the Lives and Characters of the Illustrious Family of the Boyles; Particularly of the Late Eminently Learned Charles Earl of Orrery. . . . With a Particular Account of the famous Controversy*

the Religious Sentiments of Learned and Eminent Laymen (London, 1792), in Henry Rogers's Introductory Essay to his edition of Boyle's *Treatises on The High Veneration Man's Intellect owes to God; On Things Above Reason; and on The Style of the Holy Scriptures* (1835), and in Richard B. Hone's *The Lives of Nicholas Ridley, D.D., Bishop of London; Joseph Hall, D.D., Bishop of Norwick; and The Honourable Robert Boyle* (1837), volume 3 in the *Lives of Eminent Christians* series.

Boyle himself was well-aware of his status as a lay theologian. The fact that approximately half of his voluminous writings deal with theological matters speaks for itself, as does the fact that in many of his works, theological concerns are so interwoven with his thoughts on natural philosophy that it is impossible to classify some works as either primarily theological or as concerned primarily with natural philosophy.⁴ Further,

between the Honourable Mr. Boyle, and the Reverend Dr. Bentley, concerning the Genuineness of PHALARIS'S Epistles; also the same translated from the Original Greek. With an Appendix Containing the Character of the Honourable Robert Boyle Esq; Founder of an Annual Lecture in Defence of Christianity. By Bishop Burnet, and others. Likewise his Last Will and Testament (London, 1737), p. 126. Budgell's work was admittedly an apologetic one; his goal was to defend Charles Boyle, Robert Boyle's nephew, in Charles's controversy with Richard Bentley; for a discussion of the controversy see Joseph M. Levine, *The Battle of the Books: History and Literature in the Augustan Age* (Ithaca: Cornell University Press, 1991), esp. pp. 47–84. Nevertheless, his characterization of Robert Boyle as expressed in the phrase quoted is accurate.

4. Probably the best examples of works in which Boyle interwove theological considerations with his concerns in natural philosophy are "Essay IV" in *The Usefulness of Experimental Natural Philosophy* ("Containing a requisite Digression concerning those, that would exclude the Deity from intermeddling with Matter," published in 1663), *Some Considerations about the Reconcilableness of Reason and Religion*, to which Boyle appended *Some Physico-theological Considerations about the Possibility of the Resurrection* (1675), *A Discourse of Things above Reason* and its accompanying *Advices in judging of Things said to transcend Reason* (1681), *A Free Inquiry into the Vulgarly Received Notion of Nature* (1686), *A Disquisition on the Final Causes of Natural Things* (1688), and *The Christian Virtuoso* (1690), its *Appendix*, and its *Second Part* (1744). Boyle's earliest writings, only recently published, reveal an almost exclusive concern with matters of Christian morality and devotion; not until the early 1650s did Boyle's interest in natural philosophy become anything more than a generalized curiosity. See the Introduction by John Harwood, editor, in *The Early Essays and Ethics of Robert Boyle* (Carbondale and Edwardsville: Southern Illinois University Press, 1991), pp. xv–lxix; Michael Hunter, "How Boyle Became a Scientist," *History of Science* 33 (1995), pp. 59–103.

Boyle thought that *because* he was a layman his theological writings would be taken more seriously than they would be if he were a clergyman, and claimed that

when the vessel [of religion] is threatened with shipwreck, or boarded by pirates, it may be the duty, not only of professed seamen, but any private passenger, to lend his helping hand in that common danger. And I wish I were as sure, that my endeavours will prove successful, as I am, that such churchmen, as I most esteem, will think them neither needless nor unseasonable. Nay, perhaps my being a secular person may the better qualify me to work on those I am to deal with, and may make my arguments, though not more solid in themselves, yet more prevalent with men, that usually (though how justly, let them consider) have a particular pique at the clergy, and look with prejudice upon whatever is taught by men, whose interest is advantaged by having what they teach believed.⁵

Twentieth-century scholars have continued the tradition of seeing Boyle as a lay theologian. Scholars have, for example, investigated the relationship between Boyle's voluntarism and his empirical scientific methodology, as well as the similarities in his approaches to God's two books (the book of nature and the book of scripture). Attention has been paid to his ethical writings, his views on spirit-contact, and the ways in which his piety affected his personality. His alchemical pursuits have been scrutinized in the light of his theological concerns, as have his views on the limits of mechanism in the corpuscular philosophy.⁶

5. Boyle, *Reason and Religion, Works*, vol. 4, p. 153.

6. For Boyle's voluntarism, see the sources cited in chapter 8 of this book, n. 45. For his approach to the "two books" see Rose-Mary Sargent, *The Diffident Naturalist: Robert Boyle and the Philosophy of Experiment* (Chicago: University of Chicago Press, 1995), esp. pp. 109–128. For his ethical writings, see *Early Essays*, edited by Harwood. For spirit-contact and piety, see Michael Hunter, "Alchemy, Magic, and Moralism in the Thought of Robert Boyle," *British Journal for the History of Science* 23 (1990), pp. 387–410; idem, "Casuistry in Action: Robert Boyle's Confessional Interviews with Gilbert Burnet and Edward Stillingfleet, 1691," *Journal of Ecclesiastical History* 44 (1993):80–98. For alchemy and theological concerns, see (in addition to the two essays by Hunter cited immediately above), Lawrence M. Principe, "Boyle's Alchemical Pursuits," in *Robert Boyle Reconsidered*, edited by Michael Hunter (Cambridge: Cambridge University Press, 1994), pp. 91–105; see also the first comprehensive treatment of Boyle's preoccupation with transmutational alchemy in idem, *Aspiring Adept: Robert Boyle and his Alchemical Quest* (Princeton: Princeton University Press, forthcoming). For the limits of mechanism, see John Henry, "Boyle and Cosmical Qualities," in *Robert Boyle Reconsidered*, pp. 119–138.

Despite the wide variety of topics related to Boyle's theological views discussed by scholars, most of the emphasis in the secondary literature, at least until very recently, has been on his natural theology.⁷ Far from considering the new science as posing a threat to religion, Boyle thought that the natural philosopher was in a far better position to appreciate the arguments of natural religion than were most other people. The "virtuoso" (or one who "understands and cultivates experimental philosophy") was, Boyle thought, in a unique position to gather "experience . . . on which he is disposed to make such reflections, as may (unforcedly) be applied to confirm and encrease in him the sentiments of natural religion, and facilitate his submission and adherence to the Christian religion." Although "in almost all ages and countries . . . perfunctory considerers" are led by a consideration of design in the universe to assent to the basic truths of natural religion (which are that God exists, that we can infer some of his attributes, and that the human soul is immortal), the assent of such "perfunctory considerers" is inferior to the assent given by the natural philosopher.⁸

There are two particular ways in which, in Boyle's opinion, the study of natural philosophy facilitates the acceptance of the truths of natural religion. First, the natural philosopher studies final causes, and from the consideration of the power and wisdom of the creator as displayed in the creation is led to acknowledge God's existence. Second, the natural philosopher learns to distinguish material from immaterial substances and comes to realize that body and soul cannot have the same essential attributes. The natural philosopher, observing that bodies are perishable, can infer that souls are not.⁹

God's providence (especially as expressed in final causes) and the imperishability of the soul serve as Boyle's "bridge" from natural to

7. The best account remains Richard S. Westfall, *Science and Religion in Seventeenth-Century England* (New Haven: Yale University Press, 1958). See also R.M. Burns, *The Great Debate on Miracles: From Joseph Glanvill to David Hume* (Lewisburg, PA: Bucknell University Press, 1980); Harold Fisch, "The Scientist as Priest: A Note on Robert Boyle's Natural Philosophy," *Isis* 44 (1953), pp. 252-265; M.S. Fisher, *Robert Boyle, Devout Naturalist: A Study in Science and Religion in the Seventeenth Century* (Philadelphia: Oshiver Studio Press, 1945); and L.T. More, *The Life and Works of the Honourable Robert Boyle* (New York: Oxford University Press, 1944).
8. Boyle, *Christian Virtuoso, Works*, vol. 5, pp. 513-524; the quotations are from pp. 513, 524, and 516 respectively.
9. Boyle, *Christian Virtuoso, Works*, vol. 5, pp. 515-522.

revealed religion. God would not have left human beings without the means to obtain the true end of their imperishable souls – eternal happiness in heaven – so each individual must assume that God has in some way revealed what must be believed and done in order to reach that end. And, of course, Boyle believed that there has been just such a revelation concerning the worship of and obedience to God necessary for salvation – the Christian religion.¹⁰

Boyle was aware, of course, that Christianity was not the only religion claimed by its adherents to have been revealed by God. Therefore, before assenting to the propositions of the Christian revelation, individuals must judge that it is indeed the only genuine such revelation. Here again, reason enters the picture. Boyle offered two reasons for accepting the Christian revelation as divinely inspired. First was the excellency of the doctrine. Second, God had attested to its truth by performing miracles (including the miracle of Christianity's rapid spread, which had been prophesied).¹¹ Although miracles were a violation of the uniformity of nature as established by God, it was not irrational, Boyle thought, to believe in them when God's omnipotence was taken into consideration; further, that miracles had occurred was testified to by individuals of unimpeachable motives. Human reason is capable of judging these signs and evaluating each as evidence for the authority of the Christian revelation.¹²

10. Boyle, *Christian Virtuoso, Works*, vol. 5, p. 522; the term "bridge" is Boyle's.
11. Boyle considered prophecies to be a species of miracle, claiming that "true prophecies of unlikely events, fulfilled by unlikely means, are supernatural things; and as such . . . may properly enough be reckoned among miracles" (*Christian Virtuoso, Works*, vol. 5, p. 535). This connection between miracles and fulfilled prophecies would be noted later by David Hume in his essay "On Miracles," in *An Enquiry Concerning Human Understanding* (*Enquiries Concerning Human Understanding and Concerning the Principles of Morals*, reprinted from the posthumous edition of 1777, edited by L.A. Selby-Bigge, 3rd edition, with text revised and notes by P.H. Nidditch [Oxford: Clarendon Press, 1975], p. 130).
12. See, for example, Boyle, *Christian Virtuoso, Works*, vol. 5, pp. 522, 524, and 531; *Appendix to Christian Virtuoso, Works*, vol. 6, p. 677; and *Reason and Religion, Works*, vol. 4, p. 162. Boyle also argued for the unique truth of the Christian religion in his unpublished essay, "De Diversitate Religionum" (Boyle Papers, vol. 6, fols. 279–291). This work exists in Latin translation only; it will be included along with an English translation in the forthcoming Pickering edition of Boyle's *Works*, edited by Michael

This portrayal of Boyle as one who stressed the *reasonableness* of Christianity by arguing that human reason, unaided by revelation, is capable of discerning the truths of natural religion upon which a belief in the Christian revelation can be based is correct, but only partially so, and the emphasis on this aspect of Boyle's thought in the secondary literature is unfortunate. First, it has led to the characterization of Boyle as being one of those virtuosi from whose writings "deism, the religion of reason, steps full grown."¹³ Such a characterization is incorrect for two reasons. It has obscured the extent to which Boyle's writings on "things above reason" distinguish him from such virtuosi as Joseph Glanvill and John Locke, whose writings on the reasonableness of Christianity were not qualified, as were Boyle's, by any extended discussion of revelations that were impervious to reason.¹⁴ Second, scholars have only recently realized the extent to which deism sprang from the writings of individuals (such as the Socinians) who, unlike Boyle, insisted that scrip-

Hunter and Edward B. Davis. The inclusion of this and other such manuscripts, a project supervised by Hunter, is being funded by the Leverhulme Trust.

13. Westfall, *Science and Religion*, p. 219. Westfall's account as a whole is more balanced than this quotation indicates. For example, he notes correctly that Boyle sets quite definite limits on the competence of human reason to judge the "superior truths of Christianity" (p. 174). Nevertheless, Westfall failed to pursue this aspect of Boyle's thought. Similarly, Leroy E. Loemker portrayed Boyle as contributing to the spread of deism ("Boyle and Leibniz," *Journal of the History of Ideas* 16 [1955], pp. 22-43). For other studies on the relationship of the seventeenth-century emphasis on natural theology and the rise of English deism, see Robert E. Sullivan, *John Toland and the Deist Controversy: A Study in Adaptations* (Cambridge: Cambridge University Press, 1982); Stephen H. Daniel, *John Toland: His Methods, Manners, and Mind* (Kingston and Montreal: McGill-Queen's University Press, 1984); John Orr, *English Deism: Its Roots and Fruits* (Grand Rapids, MI: Eerdmans, 1934); and Leslie Stephen, *History of English Thought in the Eighteenth Century*, 3rd edition, vol. 1 (New York: G.P. Putnam's Sons, 1902).
14. I discuss Glanvill's views on reason and revelation in chapter 2. For Locke's views, see John Marshall, "John Locke and Latitudinarianism," in *Philosophy, Science, and Religion in England 1640-1700*, edited by Richard Kroll, Richard Ashcraft, and Perez Zagorin (Cambridge: Cambridge University Press, 1992), pp. 253-282; idem, *John Locke: Resistance, Religion and Responsibility* (Cambridge: Cambridge University Press, 1994); Gerard Reedy, S.J., *The Bible and Reason: Anglicans and Scripture in Late Seventeenth-Century England* (Philadelphia: University of Pennsylvania Press, 1985), pp. 119-141.

ture must be interpreted in such a way that the *content* of revelation be consonant with human reason.¹⁵

Of greater significance is the fact that this emphasis on the role of natural theology in Boyle's thought has resulted in the neglect of Boyle's emphatic denial that human reason is competent to judge the content of revelation. This neglect is particularly regrettable because of the close affinity in Boyle's thought between his views on the limits of human understanding in the context of revealed religion and his views on the limits of human understanding in the context of the natural philosopher's quest to understand the secrets of nature. In this book, I explore that affinity and argue that Boyle's views on reason's limits affected his conception of the proper goals and methodology of the new natural philosophy. Further, I argue that Boyle's theological beliefs provided the foundation for his views on natural philosophy: Boyle believed that God, in creating human beings, deliberately limited reason's power and scope. It was this (essentially unexamined) starting point from which his arguments concerning the limits of reason's competence followed.

In Part I, I examine the theological context within which Boyle developed his views on things above reason. In chapter 1, I survey briefly the history of various conceptions of the proper relationship of reason to religion from the beginning of Christianity to Boyle's era, with an emphasis on the concepts that are particularly relevant for an understanding of his thought. In chapter 2, I investigate the claim of the Socinians that scriptural revelation should be interpreted in such a way as to be consonant with human reason, as well as responses to that claim made by some of Boyle's contemporaries. Socinian ideas were spreading rapidly in England in the 1650s, and many of the arguments that Boyle made in his *Discourse of Things above Reason* (1681) can be traced back to the arguments of various nonconformists concerning reason's limits in the ensuing controversies. These themes, in turn, can be traced back to their medieval origins. Instead of aligning himself with latitudinarian contemporaries, such as Joseph Glanvill, who emphasized reason's competence, Boyle aligned himself with those who more stringently circumscribed reason's role in understanding revelation.

If the nonconformists tended to stress reason's limits in their refutations of Socinian doctrines and methodology, certain of them (and most

15. For the relationship between Socinianism and deism, see especially J.A.I. Champion, *The Pillars of Priestcraft Shaken: The Church of England and its Enemies 1660-1730* (Cambridge: Cambridge University Press, 1991); Sullivan, *John Toland and the Deist Controversy*; Reedy, *The Bible and Reason*, esp. pp. 119-141.

especially the high Calvinists among them) dogmatically asserted that *their* interpretations of incomprehensible doctrines were uniquely correct. In short, they claimed to have comprehended correctly the incomprehensible, and contributed volume after volume to the heated doctrinal debates in seventeenth-century England. One of the most intense of those controversies was the question of the proper interpretation of the doctrine of predestination. In chapter 3, I survey the issues involved in the predestinarian controversies, with an emphasis on those aspects of particular concern to Boyle. I end chapter 3 with an examination of John Howe's *Reconcilableness of God's Prescience of the Sins of Men, with the Wisdom and Sincerity of his Counsels, Exhortations, and whatsoever Means He uses to prevent them* (1677), which he had written, he said, "at the request of Mr. Boyle," as well as the controversy which the work generated. Boyle's *Things above Reason* should be read and interpreted in the context of both the religious rationalism urged by the Socinians and the controversies over predestination between the Calvinists and Arminians.

In chapter 4, I examine *Things above Reason* and its accompanying *Advices in judging of Things said to transcend Reason*, incorporating material from Boyle's related writings when relevant. In this chapter, I describe his categories of things that are above or even contrary to reason because they are either incomprehensible, inexplicable, or unso- ciable, and argue that in Boyle's view, human reason is so incompetent to judge the content of revelation that even the law of noncontradiction may appear to be violated from the perspective of finite human understanding. In addition, I show that Boyle was aware that his emphasis on reason's limits invited charges of enthusiasm, that he anticipated this objection, and answered it in *Advices*. Further, I argue that *Things above Reason* and *Advices* were written in response to the fervent polemics characteristic of theological controversies in his day, Boyle's argument being that if a doctrine is truly above the ability of human understanding to comprehend (which the controversialists themselves acknowledged), then any pretensions to have attained a uniquely correct understanding of that doctrine must be abandoned.

In Part II, I turn to the question of the relationship between Boyle's views on the limits of reason in theology to his conception of the task of the natural philosopher. After discussing briefly each of the major theories of matter he considered to be viable alternatives to his preferred corpuscular hypothesis (in chapter 5), I turn to Boyle's views on the various possible sources of knowledge of the created world in chapter 6. Specifically, I discuss his views on scriptural revelation, personal revela-

tion, abstract reason (including innate ideas, which, having their origin in God, might be construed as a form of revelation), and sensory perception as sources of knowledge of the created world.

I begin chapter 7 with an examination of Boyle's three categories of things above reason in the context of natural philosophy, showing that he believed that just as there are incomprehensible, inexplicable, and unsociable truths in theology, he also believed that there are incomprehensible, inexplicable, and (from a practical although not from a theoretical point of view) unsociable truths in the field of natural philosophy. I then turn to Boyle's evaluations of each of the alternative theories of matter I described in chapter 5. I use his criteria for good and excellent hypotheses to argue that his conception of the proper goal of the natural philosopher was that the naturalist should provide *intelligible* explanations (not, necessarily, true explanations) of phenomena that themselves were often incomprehensible and inexplicable. Further, I argue that his conception of the limits of human reason kept him from declaring straightforwardly that the viable alternative theories were false, even though he made it clear that he rejected them. In short, I stress the provisional nature of Boyle's claims. In addition, I emphasize that he believed that some of nature's secrets could not be explained intelligibly at all, and that although he thought progress could be expected in the investigation of nature's secrets, he did not think that human understanding would ever be able to penetrate all of them (at least not in this life).

Although in chapter 7 I discuss the theological concerns that lay beneath many of Boyle's objections to the viable alternative theories of matter, my emphasis is on objections he considered to be totally secular in nature. My point in doing so is to show that even when Boyle *thought* he had excluded any specific theological considerations from a given argument, he was in fact *always* assuming that human reason is extremely limited in its power and scope, and that this assumption itself was based on his voluntaristic conception of God. In chapter 8, I examine Boyle's voluntarism, and argue that he believed that God, in creating human beings, had freely chosen to limit the power and scope of human reason. In creating the world commensurate to his own infinite understanding and in limiting the rational faculties of created beings, God had deliberately left "human understandings to speculate as well as they could upon those corporeal, as well as other things."¹⁶ Boyle believed that by limiting human understanding in this life, God had wisely re-

16. Boyle, *Appendix to Christian Virtuoso, Works*, vol. 6, p. 694.

served a full and complete understanding of both the secrets of theology and of nature for the next life, thereby providing the greatest possible reward for being both a Christian and a virtuoso while here on earth.

Before proceeding, it will be helpful to smooth the way for the chapters in Part I by discussing Boyle's views on religious controversies, for my claim that his *Things above Reason* emerged out of the religious controversies of his day runs counter to the image we have of Boyle as having removed himself from those very controversies. In the remaining three sections of this Introduction, I discuss Boyle's early responses to religious controversies, his views on liberty of conscience, and the tension between his "love of peace" and his "love of truth."

Boyle's Early Responses to Religious Controversies

After his death, Boyle would be remembered as a natural philosopher and lay theologian who refrained from participating in the theological controversies of his day. Gilbert Burnet, Bishop of Salisbury, for example, emphasized Boyle's irenicism during the sermon he preached at his funeral. Burnet noted that Boyle disliked "any Nicety that occasioned Divisions amongst Christians," and that he "was much troubled at the Disputes and Divisions which had arisen about some lesser Matters." Religion, Boyle thought, ought to purify hearts and govern lives, and, according to Burnet, he

avoided to enter into the unhappy Breaches that have so long weakened, as well as distracted Christianity, any otherwise than to have a great aversion to all those Opinions and Practices, that seemed to him to destroy Morality and Charity.¹⁷

In the first published biography of Boyle – the *Life* prefixed to the 1744 and 1772 editions of Boyle's *Works* – Thomas Birch quoted these

17. Burnet, *Sermon Preached at the Funeral*, pp. 25–27. Burnet's comment that Boyle had an aversion to any opinion or practice that destroyed charity most likely refers to Boyle's aversion to sectarian controversies themselves; Boyle's *Discourse of Things above Reason* (1681) was (at least partially) an attempt to persuade his fellow Christians to abandon participation in such controversies; see chapter 4. Burnet's comment about opinions and practices that destroy morality might refer generally to Christians living immoral lives or it might refer to a dislike on Boyle's part for antinomianism, a belief that strict Calvinists were often accused of holding (on the grounds that absolute predestination might lead to the belief that the elect cannot fall from grace regardless of what they do).

remarks from Burnet's funeral sermon.¹⁸ Birch's comments, in turn, influenced subsequent biographers. In an introductory essay to an 1835 edition of three of his theological works, Henry Rogers, for example, stated that Boyle

took no part in the unhappy controversies which distracted the age. His serene and placid spirit recoiled from controversies of every kind, but especially from such as were alike distasteful to his temper and alien from his pursuits, and which appeared to him, as they must to every other sober mind, to have been prosecuted with an animosity and rancour so utterly disproportionate to their importance.¹⁹

In one sense, this is a correct interpretation. In an era noted for its heated religious polemics, Boyle's writings reflect a conscious decision not to involve himself in sectarian debates. He did, in fact, have an aversion to the heated polemics of his day. However, a careful examination of his *Discourse of Things above Reason* (1681) in the context of the theological controversies of his day reveals that in that work he was indeed participating in not only one but two of the ongoing theological debates of seventeenth-century England – the question of the proper use of human reason in attempting to unravel the mysteries of Christianity, and the question of the proper interpretation of the doctrine of predestination. In fact, as I show in chapter 4, *Things above Reason*, with its dialogue format and its nondogmatic tone, was intended as a model of the *proper* way to debate the correct interpretation of scripture.

An examination of his early correspondence and theological writings reveals that in the years following his return to England from his studies abroad in 1644, Boyle struggled to formulate an appropriate response to the sectarianism then at its height. In doing so, he had to deal with a number of related issues. One of these was the extent to which liberty of conscience should be tolerated (if at all) in religious matters. Another was to what extent, if any, he should involve himself in doctrinal controversies.

Boyle was only twelve years old in 1639 when he left the British Isles to travel and study abroad. In 1644, he returned to an England deep in the throes of civil war, not only torn by political conflict but also riven by religious controversies. On arrival, he headed for London,

18. Thomas Birch, *The Life of the Honourable Robert Boyle, Works*, vol 1, p. cxli.
19. Henry Rogers, Introduction to Boyle's *Treatises on the High Veneration Man's Intellect owes to God, On Things Above Reason, and on the Style of the Holy Scriptures*, edited by Henry Rogers (London, 1835), p. xliii.

discovering when he arrived that his sister Katherine, Lady Ranelagh, was living there, having moved to London to escape the dangers of the Irish Rebellion.

He remained with his sister for more than four months, and while there he was no doubt brought up to date on the whereabouts and activities of other members of his family. Boyle's father, who had died the previous year, had remained loyal to the king, although there is some evidence in his private papers that he had had Parliamentary and Puritan sympathies. His brother Lewis, Viscount Kinalmeaky, had died in battle in September of 1642 during the Irish Rebellion. His eldest brother Richard, now Earl of Cork, had married into a Royalist family and, as a representative of his wife's family, served in the Royalist army.

Katherine herself was a patron of Puritan scientists and divines and had close ties with the Hartlib Circle, the members of which were preparing for the millennium by reforming learning, unifying Christians, and converting the Jews. Another sister, Mary Rich, Countess of Warwick, would become a fully fledged Puritan whose constant preoccupation with virtue and piety is revealed in her unpublished diary.²⁰ Other family members, concerned with the defense of and recovery of their Irish properties, aligned themselves with whichever party was in power

20. British Library Add. MSS. 27,351-27,355. A typical entry begins: "In the morning as soon as I awaked I blessed God then went out alone into the wilderness to meditate, and there God was pleased to give me sweet communion with him, and to fix my thoughts much upon my death and to make me pray to God with strong cryes and abundance of tears, that I might be prepared for that great change, and then God was pleased to make me meditate upon the joys of heaven and to make me consider heaven would make me eternally happy in the fruition of God in love which did mightily [illeg.] my heart with desires to enter into this joy, my soul was exceedingly carried out in love to Christ's person, and with desires to be with him, and I came away much refreshed, and my heart exceedingly cheered, after I was drest I went into my closset, read, and then prai'd and there too the desires of my heart went out exceedingly after God, I blest God heartily for his mercies, went then to family prayer the heart breathed after God. . . ." [30 July 1666, MS. 27,351 fols. 111r-111v]. For Mary Rich's piety, see Sara Heller Mendelson, *The Mental World of Stuart Women: Three Studies* (Brighton, Sussex: Harvester Press, 1987), pp. 62-115. Michael Hunter has suggested that Boyle shared the "deep, agonised, piety" of his sister ("The Conscience of Robert Boyle: Functionalism, 'Dysfunctionalism' and the Task of Historical Understanding," in *Renaissance and Revolution: Humanists, Scholars, Craftsmen and Natural Philosophers in Early Modern Europe*, edited by J.V. Field and F.A.J. James [Cambridge: Cambridge University Press, 1993], pp. 147-59).