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# THE EXCELLENCY OF THEOLOGY: A CRITIQUE OF ROBERT K. MERTON'S "PURITAN THESIS," WITH REFERENCE TO THE WORKS OF ROBERT BOYLE

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*Robert K. Merton's "Puritan Thesis" asserts a direct correlation between Puritan theological beliefs and participation in natural philosophy (what today would be known as science). This essay corrects the misleading assumptions and conclusions brought about by Merton's argument, by using the writings of Robert Boyle. Boyle, whom Merton designated a "Puritan scientist," wrote extensively on the connection between natural philosophy and theology; and his writings demonstrate that the relationship between the two was far more complex than the simplicity of Merton's thesis suggests.*

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The nearly contemporaneous occurrence in European history of the Protestant Reformation and the "Scientific Revolution" has led many historians to attempt to link the transformations of religion and science together. For example, some have argued that Protestant theology promoted or made more attractive the empirical and experimental philosophy that attained dominance in the seventeenth century. One of the more long lasting, and perhaps one of the more misleading, of these theories about Protestantism and Science is the so-called "Puritan Thesis" of twentieth-century American sociologist Robert K. Merton. In the essay, "Puritanism, Pietism and Science," Merton asserts that Puritans were attracted to and pursued science to a greater degree than their contemporaries, because of the tenets of their specific theology. Merton states:

[T]he Puritan ethic, as an ideal typical expression of the value-attitudes basic to ascetic Protestantism generally, so canalized the interests of seventeenth century Englishmen as to constitute one important element in the enhanced cultivation of science.

Merton goes even further with the argument:

The deep-rooted religious interests of the day demanded in their forceful implications the systematic, rational,

and empirical study of Nature for the glorification of God in His works and for the control of the corrupt world.<sup>1</sup>

Merton's thesis, accurate or not, has had a very long reach. Many people still have a vague idea that the strict, highly industrious and serious tone that supposedly characterized Puritan life led many of them to become committed practitioners of natural philosophy.<sup>2</sup>

Besides propagating an oversimplified and, in many ways, inaccurate conception of the Puritans and their beliefs, Merton's use of the views of various seventeenth-century natural philosophers as evidence for his thesis has led to the incorrect categorization of many of these individuals as definitively Puritan. One such figure to whom Merton repeatedly refers to in this context is Robert Boyle. In this essay, I address two of the major difficulties with Merton's thesis, by using the example of Robert Boyle and his writings on the relationship between natural philosophy and theology. Firstly, I demonstrate, by a succinct examination of what a Puritan is, that the definition of Puritan used by Merton in the essay is misleadingly over-generalized and inconsistent. This inconsistency means that Merton's thesis is unable to provide an accurate insight into the complexity of views on

theology and natural philosophy held by figures like Robert Boyle. Secondly, I will apply the four tenets of "Puritanism" that Merton identifies as being correlated to natural philosophy to two of Robert Boyle's works on the relationship between theology and natural philosophy. Applying Merton's markers of Puritanism to a close reading of Boyle indicates that, far from articulating views on the relationship between natural philosophy and theology that indicate a strong Puritan preference, Boyle instead drew a boundary between natural philosophy and theology that was expressly non-sectarian and general. Boyle's theology and his relation of it to natural philosophy was not demanded or generated by the project of natural philosophy nor of "prevailing social values" as Merton would like to argue.<sup>3</sup> Rather, as Boyle himself said:

I am not a Christian because it is the Religion of my Country and my Friends. . . . I admit no mans opinions in the whole lump, and have not scrupled, on occasion, to own dissents from the generality of learned men, whether Philosophers or Divines: And when I choose to travel in the beaten Road, 'tis not because I find 'tis the Road, but because I judge 'tis the Way.<sup>4</sup>

The complicated views of individuals like Boyle regarding natural philosophy and science do not fit into the neat matrix of "Puritan" or "Anglican," and a picture of seventeenth-century science and religion contingent on such categories fails to reveal the complexity of the English historical situation. Merton's failure to examine in detail the thoughts of the individuals he was anxious to classify as Puritans means that, in nearly all cases, he used such a blunt instrument of description that he missed the rich complexity of the reality in which men like Boyle operated. In letting Boyle speak for himself, the competing tensions that many natural philosophers experienced, caused by both religious conservatives and philosophic liberals, emerge with a clarity and immediacy that Merton's use of statistical categories fails to capture. (In this essay, I have always used the seventeenth-century terms "natural philosophy" and "natural philoso-

pher," as the terms "science" and "scientist" are modern and, therefore, as applied to the seventeenth century, anachronistic.) In addition to the two stated goals, my very approach in this essay, then, serves as an indirect methodological critique of Merton's dependence on statistical calculations of such categories as educational background and Royal Society membership to support his thesis of a causal link between Puritanism, Pietism and science. As the case of Robert Boyle shows, fortunately or unfortunately, historical figures often defy strict categorization, a fact that makes the successful application of the sociological tool of statistics quite difficult to achieve.

### Defining the Puritans

The Puritans constituted an important force in seventeenth-century England. Historian John Spurr describes the time:

England's stormy seventeenth century was the puritan century, the era of the "puritan revolution" when civil war and revolution ushered in government by the saints, and Protestant nonconformists emerged as an undeniable and ineradicable social and political force.<sup>5</sup>

But just who were these people called Puritans, who wielded such influence in England? I will not attempt to provide an all-encompassing definition of the Puritans here, as it is a project far beyond the scope of this essay; but a brief overview is important to correcting some of the problems of Merton's argument.

The label of "Puritan" has a long and varied history. From its earliest usage, in the latter part of the sixteenth century, as a mocking insult suggesting self-righteousness and hypocrisy, to its later anti-monarchical political implications in the seventeenth, "Puritan" as a term has carried with it numerous and different stereotypes.<sup>6</sup> These stereotypes also extended to actions or attitudes that allegedly sprang from Puritan beliefs. Various historians have sought to define Puritans in a way that goes beyond these kinds of broad generalization, focusing on the Puritan's spiritual self-identity, rather than on what they did. David Sceats describes the Puritans this way:

...those committed to pushing to its logical conclusion the programme of reform in the English Church initiated in the time of King Edward VI, but interrupted by Queen Mary's reign of terror.<sup>7</sup>

Puritans were in favor of thorough and real reform, but for the most part mainstream Puritans did not advocate separating from the Church of England. Their concern was the reform of the English church from within, and most Puritans abhorred the label of "Separatist." Their commitment to reform was in some cases radical, but not to the degree that it wished to subvert the entire structure of the Anglican Church. As historian Patrick Collinson describes, Puritans could be distinguished from their English Protestant neighbors by "everything that separated real from merely formal Protestants."<sup>8</sup>

Most of the historical literature on Puritans focuses, as John Spurr notes, on what Puritans did, whether that was lobbying for the reform of the Elizabethan church in the early seventeenth century, leading a political reform in the course of the Civil War and Interregnum, or sustaining their community in the years of persecution during the Anglican reaction after the restoration of the monarchy. This tendency to define Puritans based on their response to their circumstances has meant that it often appears impossible to define just what a Puritan is, since their description is seemingly contingent on their environment at a particular historical moment. Yet Puritans throughout the seventeenth century did have a common spiritual heritage, which, although it underwent change, still kept as its main aim the pursuit of individual salvation as well that of the English Church at large. Both a strong strain of rational analysis and the experience of the heart characterized Puritan spirituality—Puritans sought to find in themselves the marks of grace as evidence of their election.

*Boyle argued that natural philosophy simply cannot encompass the divine, and to argue for a theology and a God that can be totally grasped through the application of reason to the natural order is arrogantly to overreach the limits of human reason.*

Such marks could only be recognized through the work of grace upon the heart, but the understanding of the work of grace could only come through reasoned meditation. Ascertaining these marks of grace was central to puritan theology, for it linked directly with the doctrine of Election, the idea that some were predestined for salvation, while others were damned. Only God truly knew who was assured and who was not, but individuals could gain assurance by finding the signs of grace in their own lives. Thus, "the hope and desire for [election], the awareness of it, and the assurance of it, were fundamental to the Puritan religion."<sup>9</sup> For this reason, much of puritan literature, sermons and otherwise, is preoccupied not only with impressing upon the audience the importance of receiving grace, but also with the intricate analysis of such heartfelt experiences: for the Puritans were in no way pure spiritualists, and faith without reason was no faith at all. What links

Puritans together across the seventeenth century was this theology which combined reason and empirical spiritual experience centered on the pursuit of individual salvation. In his history of seventeenth-century English Puritanism, Spurr writes:

We should remember that the goal of English puritans was not literary monuments, nor was it political power: it was the kingdom of heaven.... [W]hat they did, what they achieved, was in their own eyes ultimately less important than why they did it and who they were: God's people.<sup>10</sup>

In light of this description of the Puritans, how do Merton's uses of the term compare? Merton claims in a preface to his essay to be

using the term Puritan to designate all Protestant groups in seventeenth-century England, a use he deemed acceptable, because he believed that all such groups shared a core set of religious and ethical convictions (a dubious proposition at best). Such a generalization is far outside the historian's ordinary use of Puritan, for which Merton excuses himself, saying that his interest was "social rather than ecclesiastical."<sup>11</sup> Yet within his essay, Merton definitely uses "Puritan" to designate a much narrower band of English Protestants, particularly with regard to the membership of the Royal Society, a scientific society officially founded after the restoration of the monarchy in the 1660s. His equation of the terms Protestant and Puritan has been shown to be a great oversimplification, as has his argument that the majority of members of the Royal Society had Puritan affiliation.<sup>12</sup> The reality of post-Restoration English religion, characterized as it was by the Anglicans and numerous "dissenters"—Independents, Presbyterians, Quakers, with those who might be called Puritans spread across the spectrum of these sects—means that many of the individuals Merton wants to single out as Puritans, such as Robert Boyle, do not fall into any neatly definable sectarian or theological category.<sup>13</sup> Nor can all of these different Protestants be easily classified as "pro-" or "anti-science" in a simple sense. All of the members of the Royal Society shared an interest in science, but how they worked out that interest in relation to religious convictions or lack thereof was different for each individual.

So, in some sense, Merton's use of "Puritan" is shorthand for Protestant, and even more than that, it is shorthand for a set of social values that he saw operating in seventeenth-century England. Merton noted four major tenets of "Puritanism" that directly linked natural philosophy and theology: (a) the presence of an immutable law which must be discovered and obeyed in both the order of na-

ture and in that of theology, (b) the relationship between empiricism and rationalism, (c) the theological requirement for industry so aptly filled by natural philosophy, and (d) the utility of both pursuits.<sup>14</sup> Do these four tenets match up with the ideas of the natural philosophers that Merton is discussing?

In the following sections, I apply in turn each of Merton's four "Puritan" tenets to two works by Robert Boyle that deal specifically

***In Boyle's framework, God's revelation to the individual, not immutable divine law, is paramount for both natural philosophy and theology.***

with the relationship of natural philosophy and theology: *The Excellency of Theology, Compared with Natural Philosophy* (1674), and "The Christian Virtuoso" (1690). The former was written as an extended letter to a "friend" who, having been lead astray by the fleeting glories of natural philosophy, had failed to give theology its proper place of primacy in the pursuit of knowledge. The latter was written by Boyle with the intention of demonstrating that natural philosophy and theology were not incompatible, and that there was no inconsistency between being a "virtuoso" of natural philosophy and a Christian.

Boyle was born in 1626 and died in 1691. He is perhaps best known for the law that bears his name, relating the pressure and volume of gases. He lived through the English Civil War and the Restoration of the monarchy, with all the concomitant religious transformations. Although Merton labels him a "moderate Puritan," it is difficult to ascertain what this would mean or where Boyle fits in among the many Protestant sects of the time. He did, as historian of science Reijer Hooykaas notes, have several influential non-conformist friends, such as Thomas Sydenham—a physician with connections to Oliver Cromwell—and John Eliot, who would later become a missionary to North American Indians. He also did write, during his teens, a narrative of his

conversion, a type of biographical writing common among more stringent Protestant sects such as the Puritans. Yet, like many in the post-Restoration era, in which the Restoration church settlement left many so-called non-conformists both inside and outside the Anglican church, spread among various groups, Boyle does not fit any one sectarian category easily.<sup>15</sup> Boyle was, Merton states, “one of the scientists who attempted explicitly to link the place of science in social life with other cultural values.”<sup>16</sup> Boyle did not see himself mainly as a natural philosopher, but as an individual who pursued natural philosophy as part of a larger quest after whatever knowledge of the divine was graspable by human reason. While some of his writings were, as Merton terms them, “apologia[s] for science” to religion, in many of his works Boyle was equally—if not more—concerned with maintaining the distinct superiority of theology to natural philosophy.<sup>17</sup> He was not only one of the foremost natural philosophers of his day, but also, Hooykaas notes, “takes his place among the eminent apologists of Christian religion.”<sup>18</sup> In these two essays, especially in *The Excellency of Theology, Compared with Natural Philosophy* (hereafter referred to as *The Excellency of Theology*) Boyle did make a case for the connection between natural philosophy and theology, but it was not made to legitimate natural philosophy to the theological community, as Merton’s thesis argues. In the following sections of the essay, I will show that Boyle’s aim in making the connection between theology and natural philosophy was to re-establish the primacy of theology, to which natural philosophy was a subordinate, if important, pursuit.

### **God’s immutable law: the common foundation of Boyle’s theology and natural philosophy?**

One prominent connection between “Puritanism” and natural philosophy made by Merton is that both entail belief in an “immutable law.” In religion, Merton states, Puritan theology asserted the immutable law of predestination, under which the fate of an individual’s soul was predetermined and set

by God. In science, this immutable law was that of the divine order of nature, which could be discovered through experimental philosophy, but not altered or manipulated. Both natural philosophy and theology were, in a way, deterministic; and through the devoted study of natural philosophy, one could continually acknowledge the divine law which had created the order of the natural world.<sup>19</sup> This link of immutable law is the baseline for Merton’s “Puritan” science. Protestants, because of their theology of the absolute law of predestination, were required to engage industriously in the world, interpreting their spiritual experiences both rationally and empirically. Through the continuous evaluating of spiritual experience by reason, individuals could hope to determine whether they bore the marks of God’s grace, a sign of their individual salvation. The study of the order of nature and of the immutable laws underlying it was an ideal arena for this interaction between industry and empiricism. Merton is correct to draw attention to the link between the immutable divine law of nature’s order and the interests of Protestants in pursuing its study. Robert Boyle echoed the position Merton has described when he writes in *The Excellency of Theology*:

But as the two great Books, of Nature and of Scripture, have the same Author; so the study of the latter does not at all hinder the study of the former.

The study of natural philosophy can even lead the mind “directly to the acknowledgment and adoration of the most intelligent powerful and benign author of things,” Boyle stated in “The Christian Virtuoso.”<sup>20</sup>

Yet, while the immutable law of God’s natural order is a part of Boyle’s understanding of the relationship between theology and natural philosophy, it is not the cornerstone. Boyle did accept natural philosophy as able to discern substantial knowledge about God through the rational study of nature; yet such a religion was, for him, insufficient and, in the end, unsatisfying. In *The Excellency of Theology*, Boyle argued that natural philosophy simply cannot encompass the divine, and

to argue for a theology and a God that can be totally grasped through the application of reason to the natural order is arrogantly to overreach the limits of human reason:

So although bare Reason well improv'd will suffice to make a man behold many glorious Attributes in the Deity; Yet the same Reason, when assisted by Revelation, may enable a man to discover far more excellencies in God, and perceive them, that he contemplated before, far greater and more distinctly.<sup>21</sup>

Merton's statement that natural philosophy and theology were linked for "Puritans" because both were founded on immutable divine laws does not reveal the logic that underlay Boyle's integration of the two. For

***The two forms of empiricism contributed to two levels of the understanding of the divine; spiritual empiricism the truths about God's own nature and will, natural philosophical empiricism data about God's order of nature.***

Boyle, natural philosophy and religion were related on the basis of what each could offer to the individual, not in Merton's sense of the theological demand that each individual take responsibility for personal salvation and, thus, pursue the study God's creation, but rather in the sense of the elevation of an individual closer to knowledge of the divine will. As Boyle wrote in *The Excellency of Theology*:

[The individual may] know something of the Nature of God by the Light of Reason, yet we must owe the knowledge of His Will or Positive Laws to His own Revelation.<sup>22</sup>

And later in the text Boyle wrote:

[Through revelation, God shows] there are Discoveries more valuable than those which relate but to the Objects that he has expos'd to all men's Eyes.<sup>23</sup>

Individuals can and should study nature to discover which attributes of God are contained therein, but such a contemplation of nature is incomplete without the addition of God's revelation, as may be found through the scriptures and the study of theology. In Boyle's framework, God's revelation to the individual, not immutable divine law, is paramount for both natural philosophy and theology.

### **Rationalism and empiricism in Protestant theology and science: identical or parallel concepts?**

In Merton's argument, science and theology are linked not only by the two forms of divine immutable law, but also because both are founded on a combination of rationalism

and empiricism. For Merton, these ideas also connect science and theology through the ideas of the Protestant work ethic and of utility, tenets of "Puritanism" that I examine below in two sections of this essay. Theologically, Puritanism did have both rational and empirical strains. Puritans, al-

though undoubtedly influenced by earlier scholastic theology, liked to describe their theology as "practical affectionate divinity" which was, "a theology that engaged with—indeed arose from—experience, context and situation, seeing itself as the handmaid of godliness."<sup>24</sup> Spiritual experience required rational analysis to be understood, but reason without empirical experience permitted only a superficial understanding.

Merton is correct in saying that there was a link between empiricism in natural philosophy and in spiritual experience. Both placed strong emphasis on the individual's gaining insight through direct personal experience. Spiritually, one could truly know God only through a direct experience in which God touched the heart. Philosophically, true knowledge was gained by actually observing and measuring the data oneself. Yet beyond

this shared emphasis on the real presence of the individual, the theological and philosophical concepts of empiricism were rather different. Boyle's emphasis on revelation demonstrated the key distinction between the two:

Reason cannot discover Truths [about God] but when Revelation once sufficiently propos'd them to Her, she can readily embrace and highly value diverse of them.<sup>25</sup>

Revelation could, in the form of spiritual experience, provide the material of Divine Truths, which could be shaped by reason, whereas empirical natural philosophical experience could provide observations and data by which reason could construct hypotheses about the natural world. The two forms of empiricism thus contributed to two levels of the understanding of the divine; spiritual empiricism the truths about God's own nature and will, natural philosophical empiricism data about God's order of nature. Philosophical empiricism was insufficient, as God could not be seen only with a "Philosophical eye"; and Boyle argued that, as a result, far better conceptions of God had been "penned by fishermen and early Christians" (who placed a greater premium on spiritual empiricism) than by most Greek, Roman, and Chinese philosophers.<sup>26</sup> Rather than being a double application of an identical concept, as Merton argues, in Boyle's *The Excellency of Theology*, the meaning of the link between rationalism and empiricism takes two distinct but parallel paths, in religion and natural philosophy respectively. Rationalism and empiricism did link natural philosophy with theology in Boyle's eyes; but again, the theological version of the relationship, emphasizing the centrality of the empirical experience of the reception of revelation, was the superior one.

### **A shelter from sin: natural philosophy and the "Protestant work ethic"**

"The combination of rationalism and empiricism which is so pronounced in the Puritan ethic forms the essence of the spirit of modern science," Merton states, and this link between science and theology is also evident

in the related theme of the "Puritan work ethic." The rigorous application of reason to empirical experience would ensure that individuals did not fall prey to the temptation of sin. The demand of Puritanism for "systematic, methodic labour," and "constant diligence in one's calling" matches perfectly to experimental natural philosophy, with its requirement to study all aspects of nature empirically, Merton claims. The eschewing of idleness by Puritans as a means of avoiding sinful temptations again is a natural fit with the demands of experimental philosophy. Rather than being tempted by vice, one can occupy oneself with experiments.<sup>27</sup> *The Excellency of Theology* does have some references to these advantages of natural philosophy. Boyle noted that God gave human beings reason, "which permits the study of Natural Philosophy by its exercise," and in doing so, they may come to a greater knowledge of God's attributes.<sup>28</sup> Again, though, Boyle deemed natural philosophy insufficient both as a means of obtaining knowledge of God and as a motivator for worthwhile industry and guard against temptation. For in Boyle's eyes, the contemplation of theological truths increased the piety and virtue of the contemplator. He wrote:

[Studies of Divine truths] not onely  
Restrain One undue Passion, but  
Advance all vertues, and free us from  
all Servile Fears of the Deity: and tend  
to give us a strong and well-grounded  
Hope in Him.<sup>29</sup>

For Boyle, natural philosophy was not the primary source of valuable occupation, but it did elucidate a method that, if applied to theology, could render it even more valuable. "Nor do I doubt, but that a much greater progress might be made in the Discovery of Subjects where, though we can never know all, we may still know farther," Boyle stated, when speaking of theology. Rigorous analysis was far more productively applied to theology than to natural philosophy:

[If] Speculative Geniuses would propose to themselves particular Doubts



and Enquiries about particular Attributes, and frame and examine Hypotheses, establish Theorems, draw Corollaries; and (in short) apply to this study the same sagacity, assiduity and attention of mind which they often employ about inquiries of a very much inferior nature [a far more comprehensive knowledge of God could be achieved].<sup>30</sup>

The focus of one's industry should be rational analysis of God's revelation, to which natural philosophy might contribute some insight into God's natural order or a method of analysis. For Boyle, theology remained as the dominant partner in relationship to natural philosophy.

### **The usefulness of theology compared to natural philosophy**

Experimental philosophy was a means of earnest activity, but activity that was of service to the world. This melded, according to Merton, with the "Puritan" bias against the withdrawal of monastic life and their spiritual goal of "the good of many." In short, Merton argues, "science embodies two highly prized values: utilitarianism and empiricism."<sup>31</sup> Boyle did see natural philosophy as useful, but its primary utility was in pointing individuals towards a greater acknowledgment of God's glory. This argument is especially

*Boyle was concerned with those who professed belief in the veracity of the scriptures but for whom a natural philosophy without divine revelation had come to assume a place of primacy in explaining the world.*

clear in "The Christian Virtuoso," where he stated:

And indeed, the experimental philosophy giving us a more clear discovery, than strangers to it, of the divine excellencies displayed in the fabrick and conduct of the universe...very much indisposeth the mind, to ascribe such admirable effects to so incompetent and pitiful a cause as blind chance, or the tumultuous justlings of atomical

portions of senseless matter; and leads it directly to the acknowledgment and adoration of a most intelligent, powerful and benign author of things....<sup>32</sup>

Merton rightly notes that the need for industrious occupation that would enable the individual to glorify God is one link between the utility of natural philosophy and religion; yet what is striking in the Boyle texts is his relative weighting of theology over natural philosophy. In *The Excellency of Theology*, Boyle wrote of using a "balance" to "show that [natural philosophy's] Excellencies, though solid and weighty are less so than the prepondering ones of theology."<sup>33</sup> Theology not only drew one more closely into an understanding of the divine, but also had ends and goals that were ultimately far more useful than those of natural philosophy.

The Benefits which men may receive from the Divine, surpass those which they receive from the Naturalist, both in the Nobleness of the Advantages and in the Duration of them, [for] the boasted use of Natural philosophy, by its advancing Trades and Physick, will still be to serve the Body; which is but the Lodging and Instrument of the Soul.<sup>34</sup>

Theology, thus, could always claim to be the supremely utilitarian object of study, for it

alone dealt with the true nature and state of the soul. Natural philosophy, in Boyle's mind, was indissolubly linked to theology, as it gave the individual a greater understanding of God's attributes; but it was never sufficient unto itself to provide full theological understanding.

What of Merton's claim that "Puritans" were particularly concerned with "the good of many" and were, thus, united with Francis Bacon. Bacon, according to Merton, believed in the power of science to improve the "material condition of man," which, "apart from its purely mundane value," was "a good in the light of the Evangelical Doctrine of Salvation by Jesus Christ."<sup>35</sup> Boyle had his sus-

picions about the benefits that could be generally derived from natural philosophy. Whereas the study of theology benefited all individuals equally, natural philosophy was less egalitarian. Many improvements that resulted from the work of natural philosophy “prejudiced one sort of Men as much as they Advantage another.”<sup>36</sup> Natural philosophy had its own particular uses, but theology was the source of universal improvement and, thus, had superior value.

Just as the skill of a jeweller is preferable than that of a mason because of the nobleness of the object [where we know upon tradition the value of jewels over common stones], so a more dim and imperfect knowledge of God, and the Mysteries of Religion, may be more desirable, and upon that account more delightful, than a clearer knowledge of those Inferior Truths that Physicks are wont to teach.<sup>37</sup>

Boyle believed that natural philosophy gained its true utility only when inspiring the individual toward the study of theology, a pursuit that would always generate truths far superior to those discovered through natural philosophy.

### **Boyle’s project: re-establishing the priority of theology**

If, as Merton’s thesis argues, the seventeenth century was the age of “Puritan science,” why did Boyle bother to write such lengthy expositions of the relationship between theology and natural philosophy? One would suppose that the natural philosophic community, if dominated by “Puritans,” would be in full agreement with his arguments for the supremacy of revealed theology, thus rendering his project superfluous. Boyle’s essays depict a picture of the natural philosophic community that differs from Merton’s thesis. In his preface to *The Excellency of Theology*, Boyle lamented:

The undervaluation of the study of things sacred is not his [a friend’s] fault alone, but is grown so rife among many (otherwise ingenious) Persons, especially Studiers of Physicks, that I wish the ensuing Discourse were much less seasonable than I fear it is.<sup>38</sup>

Directly in contrast to Merton’s argument that natural philosophers were chiefly concerned with making natural philosophy acceptable to a dominant theology, Boyle stated that it was students of “Physicks,” in particular, who were prone to demoting theology below natural philosophy. Natural philosophers had fallen prey to undervaluing theology, because of

...a certain secret Pride, grounded upon a Conceit, that the Attainments of Natural Philosophers are so noble a kind and argue so transcendent an Excellency of Parts in the Attainer, that he may justly undervalue all other Learning, without excepting Theology itself.<sup>39</sup>

But notable in Boyle’s comments is his stress on the undervaluation of theology. Boyle was not writing to atheists, agnostics, or skeptics, for if he were, Boyle stated that his argument would have been different, focusing much more on scriptural proofs. Boyle was concerned with those who professed belief in the veracity of the scriptures but for whom a natural philosophy without divine revelation had come to assume a place of primacy in explaining the world. Theology was being subsumed into natural philosophy, rather than being maintained as superior. He was, thus, not seeking to demonstrate the religious value of science to an atheistic community, but rather to combat what he saw as an insufficient natural theology, and to reconfigure the relationship between natural philosophy and theology.

Boyle’s specific focus, as evidenced by his repeated references to “your friend Descartes” in addressing the intended recipient of *The Excellency of Theology*, was on those followers of Descartes who were described as deists. Deism in Boyle’s time, as Hooykaas notes, is “customarily defined as the doctrine that God gave the world its laws and left it to its fate,” although there were many deists who did “acknowledge God’s constant concern for creation.”<sup>40</sup> Perhaps a better definition of deists would be the following: those who neglect “revealed religion [and] argue that the natural light (i.e., that of reason) is sufficient to arrive at pure religion.”<sup>41</sup> Natural philosophers who subscribed to this view believed they could arrive at all sufficient knowledge

of God through reason and study of the natural world. God's revelation outside of that of the natural order, thus, had little importance. Descartes was often taken as a model in this strain of thought, with his rational arguments for the existence of God, which could be arrived at by human reason alone. Natural philosophy, for Descartes' followers, assumed a place of primacy among other types of learning, not because naturalists were atheists or skeptics, but because their view of religion put such a premium on natural theology, or on that which could be discovered by a combination of rational and empirical study of nature. Boyle sought to reassert the importance of the rational and empirical study of theology. Spiritual experience and revelation were two key elements of theology that could not be grasped through the study of nature. In these two essays, Boyle strove to prove that reason alone was insufficient. In *The Excellency of Theology*, Boyle constructed a brief dialogue between himself and his imagined audience of deists. He argued that the immortal nature of the soul could be ascertained only with assurance through God's revelation. "Yet didn't Descartes demonstrate the immortality of the soul by reason only?" Boyle's imagined audience asks. No, Boyle would answer, for all the Cartesian proof offers is a rational demonstration that the soul is distinct from the body, not that it continues on after the destruction of the body. For Boyle, such a proof is an example of the failure of natural philosophy to match the elevation offered by theology and divine revelation. The Cartesian proof, he wrote, is good for "Atheists, Epicureans and other men, Naturalists who will not allow God to have anything to do in the case."<sup>42</sup> For natural philosophers who profess to be Christians, it was insufficient, and presented a flawed relation between natural philosophy and theology.

At the heart of Boyle's arguments was his desire to maintain the proper connection between the two, in the face of the dangerous conflation of theology with natural philosophy offered by the deists. The natural theology expounded by the deists marginalized theol-

ogy into the mere partner of philosophy. What Boyle was arguing against, in one sense, was the secularization of natural philosophy suggested by the deist conception of the relation between natural philosophy and theology, with its devaluing of revelation. One of Boyle's chief concerns was to define "the natural philosopher" in such a way that interest in theology was not only a permissible, but an integral part. "Men can be philosophers who also study Divine Learning," Boyle stressed in *The Excellency of Theology*; natural philosophers should not be limited to the study of natural philosophy.<sup>43</sup> As Boyle argued:

[I am] no Lecturer or Professor of Physicks, nor have ever engaged myself by any Promise made to the Publick, to confine myself, never to write of any other subject. Nor is it Reasonable, that what I did or may write, to gratifie other mens Curiosity should deprive me of mine Own Liberty, and Confine me to One Subject.<sup>44</sup>

Boyle wished to restore the relationship between theology and natural philosophy to one where theology was universally accepted as the cornerstone discipline, so that natural philosophers' interest in theology could only enhance their natural philosophic work.

In "The Christian Virtuoso" and in *The Excellency of Theology*, Boyle argued for natural philosophy and theology to be integrated; but he did not advocate a relationship in which theology became simply another basis for the rational methods of natural philosophy, as deists who argued that God could be found purely through reason and the study of nature did. In his "Puritan thesis," Merton correctly distinguishes several points of correlation between natural philosophy and theology, but his conception that men like Boyle were chiefly interested in making natural philosophy acceptable to their faith leads him to misunderstand that governing belief in Boyle's case was theology, rather than natural philosophy. Boyle valued natural philosophy highly, but the determinant element in the relation of natural philosophy to theology was theology. Natural philosophy and theology did share the idea of an immutable law, but it was revelation, for

Boyle, that set the place of natural philosophy in relation to theology. Empiricism and rationalism were needed in faith and philosophy, but spiritual empirical experience and rational analysis of revelation would bring assurance of the most important Divine truths. Industry and utility could be practiced in natural philosophy, but through theology one's work was elevated and the results made ultimately useful. In all aspects, it was theology that determined the role of natural philosophy in Boyle's understanding of the connection between the two, a role which was always of secondary importance relative to that of theology. Boyle's arguments did not demonstrate a particular sectarian agenda, nor an advocacy of the profession of natural philosophy to the religious community, despite what Merton's thesis would suggest. His chief concern was to maintain a meaningful position for theology in light of the growing encroachment of a more secularized natural philosophy. Instead of the work of a "Puritan" natural philosopher, Boyle's writings can be seen as an early contribution to the long-lasting and broader debate over the propriety and nature of the relationship between theology and natural philosophy.

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#### Endnotes:

1. Merton, p. 20.
2. Merton uses the term "science," although in a true historical sense this is anachronistic, as the term science was not used in its current sense until the nineteenth century. In discussing Boyle's views, I have always used the term "natural philosophy," but when directly discussing Merton's assertions I have maintained his use of the term science.
3. Merton, p. 25.
4. Boyle, quoted in Hunter, p. 57.

5. Spurr, p. 1.
6. Hill, p. 20.
7. Sceats, p. 4.
8. Collinson, quoted in Sceats, p. 4.
9. Spurr, p. 159.
10. Spurr, pp. 202-203.
11. Morgan, p. 64, n. 11. Morgan's essay is a thorough analysis of the historiography that has developed around the Puritan thesis, coupled with an attempt to authenticate Merton's thesis by applying it to the writings of numerous individuals who, by today's historical standards, are designated as "true" Puritans.
  12. For example, see Hall, and Morgan.
  13. *Ibid.*, p. 48.
  14. Merton, pp. 24-25, 28.
  15. *Ibid.*, p. 44. ("[T]he climate of values most conducive to and interest in science was found among the moderate Puritans, as exemplified by Robert Boyle"); Hooykaas, p. 10; Spurr, p. 131. It is interesting to note that in other discussions of Boyle's religion and science, Boyle is identified as orthodoxly Anglican. See Hunt, where he asserts that the "allegiance to Anglican theology made it 'philosophically' possible for Robert Boyle to pursue his studies in 'natural philosophy'" (p. 57). Apparently one person's "moderate Puritan" is another's "orthodox Anglican," which is perhaps unsurprising, given the confused nature of post-Restoration English religion.
    16. Merton, p. 21.
    17. *Ibid.*
    18. Hooykaas, p. 57.
    19. Merton, 28-29.
    20. Boyle, *The Excellency of Theology*, p. 121; "The Christian Virtuoso," p. 125.
    21. Boyle, *The Excellency of Theology*, p. 5.
    22. *Ibid.*, p. 6.
    23. *Ibid.*, p. 182.
    24. Sceats, pp. 11-12.
    25. Boyle, op. cit., p. 15.
    26. *Ibid.*, p. 5.
    27. Merton, p. 25.
    28. Boyle, op. cit., p. 68.
    29. *Ibid.*
    30. *Ibid.*, pp. 89, 94.
    31. Merton, pp. 24-25.
    32. Boyle, "The Christian Virtuoso," p. 41 (p. 125 in the anthology).
    33. Boyle, *The Excellency of Theology*, p. 115.
    34. *Ibid.*, p. 132.
    35. Merton, p. 24.
    36. Boyle, op. cit., p. 133.
    37. *Ibid.*, p. 160.
    38. *Ibid.*, author's preface.
    39. *Ibid.*, p. 164
    40. Hooykaas, p. 6. An example of Boyle's designation of Descartes as "friend" or "your favourite" is found on p. 144 of *The Excellency of Theology*.
    41. *Ibid.*, pp. 3, 6.
    42. Boyle, op. cit., pp. 25-27, 36.
    43. *Ibid.*, introduction.
    44. *Ibid.*, author's preface.

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