

## Introduction

Thou art a figurative, a metaphorical God . . . Neither art thou thus a figurative, a metaphorical God in thy word only, but in thy works too.

John Donne, *Devotions upon Emergent Occasions* (1624)

Here will be the point of Debate; Whether this acknowledged Fitness of Humane Bodies must be attributed, as we say, to a wise and good God; or, as the Atheist averr, to dead senseless Matter. I hope to make it appear, that here, as indeed every where, but here certainly, in the great Dramatick Poem of Nature, is a necessity of introducing a God.

Richard Bentley, *The Folly and Unreasonableness of Atheism* (1699)

John Donne and Richard Bentley both portray nature as a poem authored by God, tapping into a long Christian tradition holding that the “book of nature,” like the book of scripture, should be read for divine meaning. More distinctively, both of these authors identify the book of nature as poetry rather than prose: Donne rhapsodizes about how God’s works are metaphorical, and Bentley refers to nature as a “great, dramatic poem.” Beyond these significant similarities, however, the two men’s conceptions of the theological import of nature could not be more different. Donne writes as a poet himself and at a time when the scientific reforms called for by Francis Bacon had yet to take a firm hold in English intellectual culture. For Donne, God speaks metaphorically in nature as well as scripture, piling up meaning in the creatures. Bentley, by contrast, approaches the book of nature with the eyes of an exacting textual critic and at a time when the new sciences of experimentation and Newtonian physics were quickly gaining ground. For him, the fitness and order of nature – as comprehensively explained by natural philosophers – proves the existence of a providential designer but offers little or no insight beyond that. This book tells the story of how the book of nature got from A to B in the English imagination, considering for the first time the important role that

authors of imaginative literature, human poets, played in this shifting conception of the divine poet.

This book thus adds to our understanding of an important and still-influential intellectual movement while deepening our appreciation of major literary works by seventeenth-century English authors such as John Donne, George Herbert, Henry Vaughan, Margaret Cavendish, Lucy Hutchinson, John Milton, Andrew Marvell, and John Bunyan. In ways that have not yet been fully recognized, these authors describe, promote, challenge, and even practice natural theology in their poetic works. These works in turn played a key role in determining what scientific methods and ideas were considered theologically licit, and in parsing to what extent science could be expected to shed light on religious matters at all. Working through the seventeenth century, I begin with early engagements of Francis Bacon’s revolutionary ideas about natural theology and end in the years of the inaugural Boyle Lectures, when many hoped that scientific learning would soon put an end to religious doubt and disputes. Alongside a growing number of natural philosophers and scientific virtuosi, literary authors explored the theological implications of new ideas, providing trenchant checks and cautions in an intellectual culture becoming increasingly enamored with rational demonstrations of religion. Before considering their contributions in the succeeding chapters, this introduction offers some broader definitions and historical contexts and surveys the most relevant scholarly conversations to date.

### Defining “Literature” and “Natural Theology”

Already in the title of this book, the slipperiness of its key terms is on view. “Literature” currently designates writing that is uniquely creative and distinguished from descriptive, expository, or argumentative writing – areas now covered by academic departments such as history, philosophy, and STEM and found in other sections of the bookstore than the “Literature” section. The term that came closest to covering the same ground in 1600 was “poesy” or poetry, and its most famous theorist was Sir Philip Sidney (1554–86). In his *Defence of Poesie*, published posthumously in 1595 and reprinted throughout the seventeenth century, Sidney defended poetry against charges that it had deleterious effects on readers, along the way defining the genre. All other arts, Sidney writes, have “the works of nature” as their “principall object”; these include astronomy, geometry and arithmetic, music, natural and moral philosophy, history,

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rhetoric and logic, physics and metaphysics. “Only the Poet,” Sidney continues,

disdeining to be tied to any such subjection, lifted up with the vigor of his owne invention, doth grow in effect another nature: in making things either better then nature bringeth forth, or quite new, forms such as never were in nature: as the Heroes, Demigods, Cyclops, Chymeras, Furies, and such like; so as he goeth hand in hand with nature, not enclosed within the narrow warrant of her gifts, but freely raunging within the Zodiack of his owne wit.<sup>1</sup>

Poetry was uniquely the product of human creation; *poesis* in Greek simply meant “making,” and a poet was a “maker” in a way that other writers and scholars were not. Poetry thus overlaps with the current definition of “fiction,” but there are important differences that make “fiction” a misleading term for the works considered in this book.

For one thing, poetry in the broad Renaissance sense includes lyric verse as well as drama, epic, and myths, whether in verse or not.<sup>2</sup> Today, lyric poetry is typically distinguished from fiction, which normally designates only prose. At a deeper level, despite the association of poetry with fables and fancy in Sidney’s time, there arises some difficulty in using the modern term “fiction” as a synonym for “poetry” in the early modern English context. Some writers of a Platonic bent understood poetry as mimetically participating in reality, for instance. The literary critic Harry Berger identifies a difference between “the norms of Neoplatonic idealism and poetry (fiction)”:

*Fiction* is etymologically and semantically related to terms meaning *invention*, *creation*, *construction* and to terms meaning *illusion*; it suggests both *something made* and *something made up*. Where the idealist tends to minimize the second term in each set, the true poet makes the most of it . . . Thus Sidney, in what is perhaps the locus classicus of the true poet’s credo in his *Apology for Poetry*: “The poet . . . nothing affirms, and therefore never lyeth.”<sup>3</sup>

Not all seventeenth-century authors would agree with Sidney’s contention that a true poet makes no truth claims. To name a prominent example, the Cambridge philosopher Henry More produced in the 1640s a lengthy

<sup>1</sup> Philip Sidney, *A Defence of Poesie* (London, 1595). This edition has no page numbers.

<sup>2</sup> On the complexities of defining poetic mimesis in the Renaissance, see Baxter Hathaway, *The Age of Criticism: The Late Renaissance in Italy* (Ithaca, NY: Cornell University Press, 1962), 8.

<sup>3</sup> Harry Berger, *Second World and Green World: Studies in Renaissance Fiction-Making* (Oakland, CA: University of California Press, 1990), 7.

Ψυχωδία [*Psychodia*] *Platonica: or, a Platonicall Song of the Soul*, comprising 1,029 Spenserian stanzas of allegorical treatment of spiritual affairs resembling not only *The Faerie Queene* (1590, 1596) but also in some respects Bunyan's later *Pilgrim's Progress* (1678). Treating spiritual realities he considered more substantial and consequential than matter, More viewed his poetic effort as "making" rather than "making up." Paradoxically, the same could be said of Margaret Cavendish's 1666 *Blazing World*, discussed in Chapter 5. Diametrically opposed to More's Platonism, Cavendish saw her authorship as a literal process of creation due to her vitalist belief that anything a human imagines is de facto given material being because no other kind of being is possible; authors cannot "make up" but can only "make."<sup>4</sup>

Today we still have not reached consensus on the ontological questions that More and Cavendish faced, but people generally mean by fiction something "made up" rather than something real, whether spiritual or material.<sup>5</sup> Seventeenth-century English authors and readers were generally more conscious of the etymological sense of *poesy*, and in this book I will use "poetry" and "poetic" in the older, capacious sense of *something made* by human imagination. Conveniently, as mentioned, this definition also includes "poetry" in the current sense of lyric verse, which is the subject of the first half of this book. No less than authors of longer narrative works – such as the biblical epic and prose fiction considered in the second half – authors of lyric poetry ranged in the zodiac of their own wit rather than being fettered to the works of nature. In this way, slippery though the category of "literature/poetry" was and is, it can still be distinguished from many kinds of expository prose. Sidney lists a number of non-poetic subjects, including philosophy, mathematics, and history. Had he been writing a century later, he might also have included the prose works of natural theology that became a notable feature of the intellectual landscape in seventeenth-century England.

And what, exactly, is natural theology? Like "poetry," the term means something different now than it did in 1600, with the older sense being broader than the newer one, although this narrowing has started to reverse

<sup>4</sup> In its materialism, *Blazing World* follows a tradition laid down by the first-century BCE Roman poet Lucretius, whose verse epic *De Rerum Natura* was highly influential in early modern Europe and similarly (as its title suggests) does not fit Sidney's definition of poetry as ranging freely from nature and affirming nothing. This poem instead set forth Epicurean materialist philosophy.

<sup>5</sup> Here I mean in common parlance and not in literary theory, where these questions continue to be posed. Like Cavendish, for instance, poststructuralist critics tend to oppose platonic theories of knowledge and representation.

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in response to recent work by philosophers, historians, and even natural scientists.<sup>6</sup> The newer and narrower definition was most memorably stated by William P. Alston in 1991: “the enterprise of providing support for religious beliefs by starting from premises that neither are nor presuppose any religious beliefs.”<sup>7</sup> Conspicuous examples of natural theology in English under this definition can be found among the Boyle Lectures (1692–present), in William Paley’s *Natural Theology* with its analogy of the watch and watchmaker (1802), the Bridgewater Treatises (1833–40), and the twentieth-century theories of the anthropic principle and Intelligent Design. Authors in this tradition see themselves as intentionally setting aside any religious presuppositions and using only their own reason and scientific observation to draw conclusions about God’s existence and attributes. This enterprise has often been viewed by Christians as a means of engaging with people outside their religious tradition – often atheists, but early on, Muslims and Jews as well. Often the stated goal was to refute or convert those people; sometimes it might be to shore up the beliefs of Christians against doubt or arguments from unbelievers. In the scheme of Jewish and Christian history, this combative and scientific conception of natural theology is relatively short-lived, cropping up in the late seventeenth century.<sup>8</sup> Despite ongoing efforts to prove religion rationally, many would say that “natural theology” is also long dead, its logic having been defeated by David Hume’s 1779 *Dialogues Concerning Natural Religion* or else by Darwin’s naturalistic explanation of design in nature.

The older and broader version of natural theology is harder to kill. In his magisterial 1605 *Advancement of Learning*, Francis Bacon divides philosophy into three parts: divine, natural, and humane, the first of

<sup>6</sup> A key example is John Hedley Brooke, Russell Re Manning, and Fraser Watts (eds.), *The Oxford Handbook of Natural Theology* (Oxford: Oxford University Press, 2013), which features a wide array of articles on various historical and philosophical aspects of natural theology and explicitly sets out to explode narrow and misleading definitions of natural theology. An example of this kind of work being done for a broad audience is scientist-turned-rector John Polkinghorne’s 2005 lecture in Carlisle Cathedral entitled “Where Is Natural Theology Today?,” *Science & Christian Belief* 18, no. 2 (2006): 169–79.

<sup>7</sup> William P. Alston, *Perceiving God: The Epistemology of Religious Experience* (Ithaca, NY: Cornell University Press, 1991), 289.

<sup>8</sup> Older works reasoning about God(s) without recourse to scripture exist but are not seen as defining a genre in this way. Cicero’s first-century BCE *De Natura Deorum*, situated outside Judaism and Christianity, is an example, as is Anselm’s notorious ontological argument for God’s existence in his eleventh-century *Proslogion*. See Alvin Plantinga, “God, Arguments for the Existence of,” in *The Routledge Encyclopedia of Philosophy*, ed. E. Craig (New York: Routledge, 1998), [www.rep.routledge.com/articles/thematic/god-arguments-for-the-existence-of/v-1](http://www.rep.routledge.com/articles/thematic/god-arguments-for-the-existence-of/v-1).

these being his other name for natural theology. Concerning “DIVINE PHILOSOPHIE or NATURALL THEOLOGIE,” he writes, “It is that knowledge or Rudiment of knowledge concerning GOD, which may be obtained by the contemplation of his Creatures which knowledge may be truly termed Divine, in respect of the object; and Naturall in respect of the Light.”<sup>9</sup> For Bacon, natural theology was what happened when “natural light” was applied to a divine object: this includes natural theology under Alston’s definition, but no stipulation is made that theological presuppositions be set aside. Natural theology in this view is simply a different mode of knowing (or knowing about) God that might exist alongside religious faith. Natural theology meant exercising human faculties of reasoning and knowing in addition to believing religious truths supernaturally revealed, for instance through the Bible or a mystical experience. Understood in this way, natural theology appears in the Bible itself, and this was recognized by early modern English Christians. Psalm 19.1 was often cited, which in Authorized Version reads, “The heavens declare the glory of God; and the firmament sheweth his handiwork”; another popular reference was Romans 1.20: “For the invisible things of [God] from the creation of the world are clearly seen, being understood by the things that are made, even his eternal power and Godhead.” Bible passages might not weigh with the “notorious infidels” against whom the Boyle Lectures were later deployed, but they clearly weighed with seventeenth-century English readers of natural theology.

As with “poetry,” then, in this book I use “natural theology” in the older and broader sense: the enterprise of using reason and observation to arrive at truths about God and God’s attributes in a wide array of contexts, within and outside of the Christian faith. Natural theology in this conception may have a goal of engaging with atheists or infidels, or it may not. Moreover, besides resolving the doubts of believers, it can also function as a positive spiritual exercise. The natural historian John Ray, who has been called the founding father of English natural theology, declared in his seminal *Wisdom of God Manifested in the Works of Creation*:

It may be (as some Divines have thought) part of our business and employment in Eternity to contemplate the Works of God, and give him the Glory of his Wisdom, Power and Goodness manifested in the Creation

<sup>9</sup> Francis Bacon, *The Oxford Francis Bacon, Vol. IV: The Advancement of Learning*, ed. Michael Kiernan (Oxford: Oxford University Press, 2000), 78–79.

of them. I am sure it is part of the business of a Sabbath-day, and the Sabbath is a Type of that eternal Rest.<sup>10</sup>

Here natural theology is cast not as an argumentative exercise but a spiritual discipline; the assumption is that it is undertaken by people who already believe the Bible, and the hope is that it will still be undertaken in heaven. As was the case with the broad definition of poetry, though, there are still some things that this older type of natural theology is not: these authors are contemplating God's works in nature, the "book of the Creatures," and not God's special revelation, for instance in the Bible. Bacon distinguishes natural theology from "DIVINITIE, or INSPIRED THEOLOGIE," which he calls "the Haven and Sabbath of all Mans contemplations."<sup>11</sup> The book of the creatures, these writers were aware, included themselves as well; their own rational faculties, innate ideas, and bodies might be brought forward as shedding light on their creator.

### Natural Theology in the Scientific Revolution

Just above, Francis Bacon served as the source of a capacious definition of natural theology he inherited from his forebears. This gives a fairly good idea of natural theology at the time but paints a misleading picture of Bacon, sometimes hailed as the father of modern science. Among his other accomplishments, Bacon can be partially credited with the narrowing of natural theology's scope and aims over the course of the seventeenth century, and not just indirectly through his hoped-for program of scientific observation and experimentation. Having defined natural theology in *Advancement of Learning*, Bacon immediately downplays it as worthy of natural philosophers' time. "The boundes of this knowledge," he continues, are

that it sufficeth to convince atheism, but not to informe Religion . . . For as all works do shewe forth the power and skill of the workeman, and not his Image: So it is of the works of God; which shew the Omnipotencie and wisdome of the Maker, but not his Image . . . Wherefore by the contemplation of Nature, to induce and inforce the acknowledgement of God, and to demonstrate his power, providence, and goodnesse, is an excellent argument, and hath beene excellently handled by diverse.<sup>12</sup>

<sup>10</sup> John Ray, *The Wisdom of God Manifested in the Works of Creation* (London, 1691), 124. This book was based on a series of lectures delivered at Cambridge decades earlier.

<sup>11</sup> Bacon, *The Oxford Francis Bacon*, ed. Graham Rees et al., iv:24. <sup>12</sup> *Ibid.*, iv:24.



This passage signals a seismic shift in natural theology going forward, a shift this book will explore through the lens of imaginative literature. In its immediate context in the *Advancement*, however, it functions chiefly to dismiss natural theology. Now that this endeavor has been “excellently handled,” Bacon goes on to outline his hopes that his countrymen will focus on various understudied branches of natural philosophy, avoiding any prideful effort to find theological content in nature beyond the already well-established truths of God’s existence and providence.

Whether or not Bacon should be given the credit, many of his dreams of reforming scientific inquiry were progressively realized over the course of the seventeenth century.<sup>13</sup> These reforms were not as sudden and monolithic as the term “scientific revolution” might suggest, but there were several recognizable and directed tendencies, including (1) Copernican astronomy (further developed by figures such as Galileo and Johannes Kepler); (2) atomic or corpuscularian theories of matter (associated with the revival of interest in Epicureanism, especially as presented in Lucretius’s *De rerum natura*, and championed by Thomas Hobbes); (3) an emphasis on observation, experimentation, and collaboration as the best method for advancing knowledge (set forth, for example, in Bacon’s *Advancement*); and (4) an aim of marshalling natural knowledge for the glory of God and the benefit of humankind, as in the charter of the Royal Society of London.<sup>14</sup> Unfolding in a Christian context, these developments raised questions about the theological appropriateness of new scientific endeavors, and initially Christianity was used to justify scientific efforts more than the other way around.<sup>15</sup> However, as various scientific

<sup>13</sup> In this book I use “science” and “scientific” in the broad older sense of “pertaining to natural knowledge.” “Science” in the modern sense of empirical observation and experimentation corresponds most closely to the early modern category of “natural philosophy,” though the two are not synonymous. When I refer to “scientific reform,” I mean along the lines described here, and particularly the reforms inspired by Bacon.

<sup>14</sup> For an overview of scientific developments in early modern Europe, see John Henry, *The Scientific Revolution and the Origins of Modern Science* (London: Palgrave Macmillan, 2008) and Steven Shapin, *The Scientific Revolution* (Chicago: University of Chicago Press, 1996).

<sup>15</sup> See Peter Harrison, “Religion and the Early Royal Society,” *Science & Christian Belief* 22, no. 1 (2010): 3–22 and “Physico-theology and the Mixed Sciences: The Role of Theology in Early Modern Natural Philosophy,” in Peter R. Anstey and John A. Schuster (eds.), *The Science of Nature in the Seventeenth Century: Patterns of Change in Early Modern Natural Philosophy* (New York: Springer, 2005), 165–83. A foundational study of the confluence of science and theology in seventeenth-century England is Amos Funkenstein’s *Theology and the Scientific Imagination: From the Middle Ages to the Seventeenth Century* (Princeton, NJ: Princeton University Press, 1986). Harrison argues similarly that the moral (not just religious) value of the new sciences was initially urged by scientific reformers in “The Fashioned Image of Poetry and the Regular Instruction of Philosophy? Truth, Utility, and the Natural Sciences in Early Modern England,” in David Burchell



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reforms gained traction over the century – Charles II’s chartering the Royal Society for Improving Natural Knowledge in 1662 was a major coup – proponents of new sciences such as John Wilkins, Robert Boyle, and John Ray began to position themselves as uniquely able to promote religion in turn. *Pace* Bacon, these men held that natural theology had not yet been “excellently handled,” that there was more science could do in the service of theology now that science was being advanced along sounder lines.

Despite Bacon’s lack of interest in propagating natural theology, his own words were used to justify a new type of natural theology that arose in this intellectual climate. “Physico-theology,” first used as a noun in 1712, developed in seventeenth-century England out of older types of natural theology but paid more attention to – and put more argumentative weight on – the physical phenomena being uncovered by natural history, experimentation, and Newtonian physics.<sup>16</sup> Seventeenth-century authors of natural theology repeatedly quoted Bacon’s assertion that “God never wrought miracle to convince atheism, because his ordinary works convince it.”<sup>17</sup> God’s “ordinary works,” these authors wanted to show, are remarkable in their quantity, beauty, order, and fitness to their many roles in the magnificent whole of creation. Physico-theology did not have to be construed as setting aside religious presuppositions and combatting atheists and infidels, but as atheism appeared to be gaining ground, the effort was increasingly framed that way. When in 1692 Robert Boyle’s will provided for the endowment of a lecture series in natural theology, for instance, the brief was that a minister should be paid to “preach Eight Sermons in the Year, for proving the Christian Religion against notorious Infidels, viz. *Atheists, Deists, Pagans, Jews and Mahometans.*”<sup>18</sup> A nineteenth-century historian would observe of Richard Bentley’s inaugural Boyle Lectures that, although delivered from the pulpit, these “sermons” were not in fact

and Juliet Cummins, eds. *Science, Literature, and Rhetoric in Early Modern England* (London: Ashgate, 2007), 15–36.

<sup>16</sup> For a helpful introduction to physico-theology from a number of angles, see Ann Blair and Kaspar von Greyerz (eds.), *Physico-theology: Religion and Science in Europe, 1650–1750* (Baltimore, MD: Johns Hopkins University Press, 2020) and especially the chapters by Scott Mandelbrote, John Hedley Brooke, and Peter Harrison. See also Scott Mandelbrote, “The Uses of Natural Theology in Seventeenth-Century England,” *Science in Context* 20, no. 3 (2007): 451–80.

<sup>17</sup> Bacon made this claim in his 1612 essay “Of Atheisme” as well as *The Advancement of Learning* (1605): see *Oxford Francis Bacon*, iv: 78 and xv: 51. This claim of Bacon’s was quoted in works of natural theology such as Richard Baxter’s *Reasons of the Christian Religion* (London, 1667), 13 and John Wilkins’s *The Principles and Duties of Natural Religion* (London, 1675), 91.

<sup>18</sup> Richard Bentley, *The Folly and Unreasonableness of Atheism* (London, 1699), dedication. This section has no page numbers.

“the instructions of the Sabbath, but popular lectures, of which the doctrines of revealed religion formed no part.”<sup>19</sup> Subsequent Boyle lecturers followed suit.

While a number of seventeenth-century authors thus ignored Bacon’s call to focus exclusively on natural philosophy, others did not, driving a wedge between science and theology that is still visible today. Some advocates for educational reform (notably John Webster and Samuel Dell) called for an end to the prideful intermingling of human philosophy and divinity in university curricula, for instance, and members of the nascent Royal Society debated whether metaphysical topics such as final causes should come within their purview.<sup>20</sup> Authors’ varying views of the usefulness of natural theology also reflect the religious diversity of early modern England: critics of natural theology were often of a more theologically reformed bent, stressing God’s freedom to act in unintelligible ways. Authors who continued to promote or practice natural theology, conversely, tended to be less theologically reformed and friendlier to the state church; later in the century, several notable proponents of natural theology (John Wilkins, Edward Stillingfleet, John Tillotson) were bishops.

Increasingly, too, those who continued to see value in natural theology stayed within the bounds Bacon set in the *Advancement of Learning*. The older idea of a “book of nature” in which humans could read divinely inscribed spiritual meanings gave way to logic inferring a powerful and providential creator from the evidence of the bounty, order, and fitness of creation.<sup>21</sup> Bacon did not explicitly attack the notion of a book of nature, choosing instead in the *Advancement* to attack the idea that God’s “image” is found in nonhuman creation, an idea he points out is not found in the Bible but in heathen traditions. But the heart of the notion of a book of nature is gone in Bacon’s writings.<sup>22</sup> By “interpretation of nature,” for

<sup>19</sup> James Henry Monk, *The Life of Richard Bentley, D.D.* (London: J.G.&F. Rivington, 1833), 46.

<sup>20</sup> Mandelbrote, “The Uses of Natural Theology,” 452–55; Katherine Calloway, “Owen and Scientific Reform” in Crawford Gribben and John Tweeddale (eds.), *The T&T Clark Handbook of John Owen* (London: T&T Clark, 2022), 223–50. On final causes, see for instance Elliot Rossiter, “From Experimental Natural Philosophy to Natural Religion: Action and Contemplation in the Early Royal Society,” in Alberto Vanzo and Peter R. Anstey (eds.), *Experiment, Speculation and Religion in Early Modern Philosophy* (London: Routledge, 2019), pp. 184–203.

<sup>21</sup> On the medieval concept of the book of nature, see Kellie Robertson, *Nature Speaks: Medieval Literature and Aristotelian Philosophy* (Philadelphia: University of Pennsylvania Press, 2017), 60–64.

<sup>22</sup> See below, pp. 35–40, for a more detailed survey of Bacon’s views on natural theology. Katherine Attie has shown in how Bacon strategically deploys the trope of a book of nature in order to pitch his scientific instauration to James I; this is not to say, however, that Bacon himself approached nature emblematically. See Katherine Attie, “Prose, Science, and Scripture: Francis Bacon’s Sacred