



James C.
Ungureanu

Newton Deified and Defied: The Many “Newtons” of the Enlightenment

James C. Ungureanu

*More than any other scientist in history, Isaac Newton has been both deified and defied. In this article, I wish to summarize several aspects of the revised historiography on Newton. I will note in particular Newton’s debt to the *prisca sapientia* and *prisca theologia* for his natural philosophy. I argue that Newton’s natural philosophy cannot be separated from his theology. In the process, however, Newton had radically altered traditional Christian beliefs. And, in so doing, Newton ironically perpetuated the conflict he wished to avoid.*

According to the eighteenth-century French *philosophes*, Isaac Newton’s life and work ushered in the modern age. In early spring of 1727, for instance, Voltaire (1694–1778) had witnessed the funeral preparations for Newton, who was buried in the Jerusalem Chamber at Westminster Abbey. Voltaire described Newton’s ceremony as full of grandeur, his pall carried by English noblemen, including the Lord Chancellor himself. “He was buried,” Voltaire notes, “like a king who had done well by his subjects.”¹ True to that description, his heirs erected in 1731 a monument at his tomb in Westminster Abbey, “a baroque monstrosity with cherubs holding emblems of Newton’s discoveries.”² An inscription below it reads:

Here is buried Isaac Newton, Knight, who by a strength of mind almost divine, and mathematical principles peculiarly his own, explored the course and figures of the planets, the paths of comets, the tides of the sea, the dissimilarities in rays of light, and, what no other scholar has previously imagined, the properties of the colors thus produced. Diligent, sagacious and faithful, in his expositions of nature, antiquity and the holy Scriptures, he vindicated by his philosophy the majesty of God mighty and good, and expressed the simplicity of the Gospel in his manners. Mortals rejoice that there has existed such and so great an ornament of the human race!³

Similarly, Voltaire exclaimed that Newton had been the “greatest man who ever lived, the very greatest, the giants of antiquity are beside him children playing with marbles,”⁴ and in one of his notebooks wrote, “Before Kepler, all men were blind, Kepler had one eye, and Newton had two eyes.”⁵

These hagiographic celebrations of Newton following his death would endure, as when popular writer Benjamin Martin (1705–1782), in his *Panegyrick on the Newtonian Philosophy* (1749), declared that the “mystery that has been hid from Ages, and from Generation ... is now made manifest to all Nations, by the divine Writings of the immortal Sir Isaac Newton.” As such, he concluded, “it is more Honour to be King of the learned British Nation, than Emperor of all the World besides.”⁶ Scottish philosopher and historian David Hume (1711–1776) concurred when he writes, in his *History of England* (1756), that “in Newton this island [i.e., England] may boast in having produced the greatest and rarest genius that ever rose for the ornament and instruction of the species.”⁷ In 1802, French

James C. Ungureanu, PhD (Institute for Advanced Studies in the Humanities-University of Queensland), is Historian in Residence at the George L. Mosse Program in History at the University of Wisconsin-Madison. His most recent book is *Science, Religion, and the Protestant Tradition: Retracing the Origins of Conflict* (University of Pittsburgh Press, 2019).

Article

Newton Deified and Defied: The Many “Newtons” of the Enlightenment

philosophe Henri de Saint-Simon (1760–1825) went so far as to found a new church under the hegemony of scientist-priests, calling it the “Religion of Newton.”⁸ But perhaps the best known, and oft-cited, hagiographic panegyric for Newton came from Alexander Pope’s (1688–1744) famous couplet:

Nature, and Nature’s Law lay hid in Night.
GOD said, *Let Newton Be!* and all was Light.⁹

This *deification* of Newton, with adjectives of “divine” and “immortal,” had become, as historian Peter Gay put it, “practically compulsory.”¹⁰ According to most of the *philosophes*, Newton was the paragon of the Enlightenment, the first great emancipator of human thought from the despotic rule of tradition, prejudice, and authority, ushering in a new epoch of enlightened rationality. Even in our own time, writers continue to enlist Newton in their personal cult of the “greats” of modern civilization.¹¹

However, more than any other scientist in history, Newton himself has been *defied*, in the sense that his disciples and biographers have produced not only an inaccurate but sometimes entirely false account of his life and work. This “Newtonian mythomania,”¹² as one scholar called it, was inaugurated not by the *philosophes* but by Newton’s first biographers. Voltaire had already recognized that they attributed all knowledge and discovery to an idealized Newton:

There are people who think that if we are no longer content with the abhorrence of the vacuum, if we know that the air has weight, if we use a telescope, it is all due to Newton. Here is the Heracles of the fable, to whom the ignorant attributed the deeds of other heroes.¹³

Indeed, it was a contemporary of Newton’s, namely, William Stukeley (1687–1765), who began the fables. Stukeley was Newton’s first biographer, and his *Memoirs of Sir Isaac Newton’s Life* (1752) was clearly a devotional, if not a propagandizing, account of his hero’s life, often extolling Newton and his work as “immortal” and able to “wipe out all faults.”¹⁴ During the Victorian period, Thomas Chalmers (1780–1847), David Brewster (1781–1868), Adam Sedgwick (1785–1873), John F. W. Herschel (1792–1871), and William Whewell (1794–1866), among many others, exalted Newton for his social, intellectual, and moral ideals.¹⁵ Brewster, for instance, published a similar hagiographic account in his *The Life of Sir Isaac Newton* in 1831. Unlike Stukeley, however, Brewster had access to most of Newton’s voluminous, unpublished manuscripts. Yet he decided to reinforce the hagiographic image, calling Newton the “high-priest of science,” rationalizing those aspects that contradicted his mythical Newton.¹⁶

Two other biographers deserve special mention: Member of Parliament and Master of Mint John Conduitt (1688–1737) and English theologian William Whiston (1667–1752). Newton scholar Stephen D. Snobelen points out that, in the notes for a projected biography of Newton, Conduitt believed that Newton was engaged in the reform of both natural philosophy and theology—that is, a “dual-reformation.” Conduitt, who incidentally succeeded Newton as Master of Mint after his death, had access to Newton’s unpublished manuscripts, and was troubled to discover that his friend had been deeply involved in theological questions that veered into religious heterodoxy. But for the ordained clergyman Whiston, who also succeeded Newton as Lucasian Professor of Mathematics at Cambridge, he had no reservations about his mentor’s heresy. He openly converted not only to Newton’s natural philosophy but also to his heterodoxy, which ultimately cost him the Lucasian chair and led to his expulsion from the university. Like his idol, Whiston argued for something like a dual-reformation in natural philosophy and theology.¹⁷

There is no doubt that Newton’s scientific achievements were unprecedented. His pioneering work on the calculus, his theory of universal gravitation, his experiments in optics, and his construction of the first reflecting telescope marked the culmination of movements and ideas that had begun in the Middle Ages. However, Newton is not the man that his most slavish disciples claim him to be. The problem is, of course, that most of the popular accounts are fictions, Voltaire’s “pack of tricks we play on the dead.” For, in addition to his scientific achievements, Newton was also an anti-Trinitarian, a natural magician and alchemist, and, perhaps most important, an adherent of the “*prisca sapientia*” and “*prisca theologia*” of the ancients, which was actually a collection of Renaissance concepts that contended that there was an “original” unity to all religious and philosophical schemes. As we shall see, Newton’s idea of reform was closely associated with the recovery of what he believed was a lost “ancient wisdom” or “theology.” Indeed, Newton’s studies in astronomy, optics, and mathematics occupied only a small portion of his time, whereas most of his efforts were devoted to church history, theology, prophecy, and alchemy.¹⁸

The real Newton first began to emerge in 1936, when economist John Maynard Keynes (1883–1946) purchased a set of Newton’s manuscripts considered to be of “no scientific value” from the Portsmouth Collection.¹⁹ Keynes had examined its contents and prepared a brief essay based on his observations to be delivered at the Royal Society in London. He died, however, three months before the address was to take

place. His brother Geoffrey in turn read the address to the Society, and what was said would forever change Newtonian scholarship:

In the eighteenth century and since, Newton came to be thought of as the first and greatest of the modern age of scientists, a rationalist, one who taught us to think on the lines of cold and untinged reason. I do not see him in this light. I do not think that anyone who has pored over the contents of that box which he packed up when he finally left Cambridge in 1696 and which, though partly dispersed, have come down to us, can see him like that. Newton was not the first of the age of reason. He was the last of the magicians, the last of the Babylonians and Sumerians, the last great mind which looked out on the visible and intellectual world with the same eyes as those who began to build our intellectual inheritance rather less than 10,000 years ago.²⁰

By “magician,” Keynes meant that Newton could no longer be seen simply as the “prince of scientific rationalism,” but someone who was also a mystic and alchemist, who “looked on the whole universe and all that is in it as a riddle, as a secret which could be read by applying pure thought to certain evidence, certain mystic clues which God had laid about the world to allow a sort of philosopher’s treasure hunt to the esoteric brotherhood.” For Newton, according to Keynes, the universe was a “cryptogram set by the Almighty.”²¹

The last several decades have seen an avalanche of books, articles, and conference papers revising popular conceptions of Newton as chiefly a scientist.²² The rest of this article has two central aims. First, I wish to summarize several aspects of this revised historiography, noting particularly Newton’s debt to the *prisca theologia* tradition for his natural philosophy. Secondly, and concomitantly, I argue that Newton’s natural philosophy cannot be separated from his theology. Newton’s life and work, as Keynes so vividly put it, demonstrates one grand project: deciphering the “cryptogram” of God’s creation. Thus “science and religion” for Newton were not distinct spheres, but integral and homogenous. For Newton, God’s truth is revealed in his two books: the book of scripture and the book of nature.

In the process, however, Newton had radically altered his Christian beliefs. And in so doing, Newton ironically perpetuated the conflict he wished to avoid. This, indeed, will further clarify where the “conflict” really lies: that is, not between some abstract notion of “science and religion” but between contending theological beliefs.²³ After decades of scholarship denouncing the “conflict thesis,” the idea that science and religion are irrevocably and fundamentally at odds, historians of science and other scholars continue to talk about it with

little sign of changing public opinion. Acknowledging that conflict emerges within a theological context rather than between science and religion will not only move the discussion forward, but it will also hopefully alert Christian scholars and scientists to the nuances of the debate, and thus help them prepare to redirect (or perhaps correct) their own commitments and convictions.

Religion, Prophecy, and Heresy

Newton “saw himself as the last of the interpreters of God’s will in actions, living on the eve of the fulfillment of the times.”²⁴ How he came to view himself and his work as an instrument of God’s will began before his interests in natural philosophy. Growing up in a Protestant home in the seventeenth century, its ethos was doubtless a historical and scriptural religion. The Bible was also central to his education at grammar school in the 1650s. Richard Westfall points to the possibility that a young and docile Newton read through hundreds of theological books his stepfather, the Reverend Barnabas Smith, left behind at his death in 1653.²⁵ Moreover, several books he is known to have bought in 1661, the year of his matriculation at Trinity College, were on Protestant theology—including John Calvin’s *Institutio christianæ religionis* (1561) and his disciple, Theodore Beza’s *Annotationes maiores in novum testamentum* (1594).²⁶ Furthermore, in one of his notebooks, dated 1662, Newton listed some 50 sins of his youth, exemplifying his teenage turpitude, and, more importantly, demonstrating his austere Protestant piety. The list included, for example, “using the word ‘God’ openly,” “eating an apple at Thy house,” “making a mousetrap on Thy day,” “making pies on Sunday night,” “threatening my father and mother Smith to burne them and the house over them,” “wishing death and hoping it to some,” “striking many,” “having unclean thoughts words and actions and dreamese,” “setting my heart on money,” “not turning nearer to Thee for my affections,” “not loving Thee for Thy self,” among many others.²⁷

Shortly after arriving at Cambridge, Newton appears to have abandoned—or, at least, very quickly moved beyond—the traditional scholastic curriculum. Westfall notes that Newton manifested very quickly an interest toward the new mechanical philosophy in vogue, devouring works of Descartes, Charleton, Galileo, Boyle, Hobbes, More, and others.²⁸ At about the same time, Newton purchased another notebook and began recording the progress of his studies, entitling it with “*Quæstiones quædam Philosophicæ*,” or “Certain Philosophical Questions.”²⁹ In it, theological topics parallel sections on natural philosophy, including discussions on God, creation, the soul, and biblical

Article

Newton Deified and Defied: The Many “Newtons” of the Enlightenment

exegesis. In other words, Newton’s *Questiones* reveals that his stream of thought regarding natural philosophy coincided with his developing theological speculations.

Other notebooks dating from 1664 to 1670 show that Newton was also venturing to ever more complex systems of mathematics. It was during these years, for example, the so-called *annus mirabilis* of 1666, that Newton developed his method of *fluxions*—i.e., the calculus. Newton never did anything halfheartedly, fastidiously incorporating his calculus into his mathematical physics and his study of optics.³⁰ To this, Newton also added the study of alchemy. This was an inconvenient truth for many of his early admirers. In his *Memoirs* of Newton’s life, for instance, Brewster had grudgingly acknowledged that between 1666 and 1669, his studies “were of a very miscellaneous kind,” and involved a “new branch of science which seems at this time to have occupied his attention, and which he continued to prosecute with much zeal during the most active period of his life.” He notes that, among other things, Newton had purchased a variety of chemicals, along with “lenses” and “furnaces,” including a copy of German publisher Lazarus Zetzner’s (1551–1616) alchemical text, *Theatrum chemicum*, which was a massive six-volume compendium or textbook on alchemy published from 1602–1661.³¹ Brewster also went on to cite a letter by Humphrey Newton (no relation), Isaac’s assistant and amanuensis for nearly five years, from 1683 to 1689, wherein he recalled that his master

very rarely went to bed till *two* or *three* of the clock, sometimes not until *five* or *six*, lying about four or five hours, especially at spring and fall of the leaf ... he used to employ about *six* weeks in his laboratory, the fire scarcely going out either night or day ... What his aim might be I was not able to penetrate into, but his pains, his diligence at these set times made me think he aimed at something beyond the reach of human art and industry.³²

Brewster felt he needed to apologize that Newton, a “mind of such power,” could “stoop to be even the copyist of the most contemptible alchemical poetry, and the annotator of a work, the obvious production of a fool and a knave.”³³ I will return to Newton’s alchemy below; for now, it is enough to say that, by the end of the decade, Newton had begun not only serious reading in alchemy, but had also obtained furnaces, initiated his own experimental program, and immersed himself in alchemical networks, all the while he was working out his calculus.

Signs of Newton’s religious heresy began to emerge during the same period, in the early 1670s. Sometime after his appointment to the Lucasian Professorship in 1669, around his early thirties, Newton became

obsessed with certain theological issues. As Westfall observes,

There can be no reasonable question that at least part of the time, when Newton expressed impatience at the interruptions caused by optical and mathematical correspondence during the 1670s, it was theology that preoccupied him.³⁴

During this time, Newton began an exacting, painstakingly intense study of the Bible, which apparently led him to conclude that the doctrine of the Trinity was a post-biblical corruption. Further, having seemingly read all the important patristic writers, Newton came to view Athanasius, the fourth-century bishop of Alexandria, as a charlatan and beguiler of scripture, who introduced metaphysical subtleties into the church, and therefore corrupted the original meaning of the Bible. Newton argued that

as a father and his son cannot be called one King upon account of their being consubstantial but may be called one King by unity of dominion if the Son be Viceroy under the father: so God and his son cannot be called one God upon account of their being consubstantial.³⁵

Though Newton did not want to limit the power of the Son, he determined that Christ’s power was derived solely from the Father and that of himself could do nothing. In all things, the Son submitted his will to the Father, which would be altogether unreasonable if he were his equal. The union of Father and Son was like that of the saints, an agreement of wills.³⁶ By emphasizing those passages that speak of Christ’s subordination to the Father, while dismissing other putative scriptural passages used to support the doctrine of the Trinity as later corruptions, Newton concluded that Christ should be worshipped for his obedience unto death—for what he had done, not for who he is. Though a divine mediator, Christ was subordinate to the Father, whose will he carried out.

Thus by the mid-1670s, Newton was committed to some type of anti-Trinitarianism theology. In 1553, Michael Servetus (1509–1553), who was a brilliant physician and often credited for discovering the pulmonary circulation of blood, was executed in Calvin’s Geneva for publishing his *De Trinitatis Erroribus* (1531) and *Dialogorum de Trinitate* (1532), in which he argued that the Council of Nicaea was a great apostasy, and that the promulgation of the doctrine of the Trinity had offended God.³⁷ At around the same time, a group of Italian humanists who similarly rejected a number of orthodox doctrines, including the doctrine of the Trinity, fled Switzerland for Poland in hopes of finding religious tolerance. Included in this refugee group was Laelius Sozzini (Latinized as “Socinus”) (1525–1562), the man from whom Socinianism derives its name.

Laelius doubted the doctrine of the Trinity and questioned the Atonement. His more well-known nephew, Faustus Socinus (1539–1604), systemized his uncle's theology, and became the leader of the so-called "Minor Reformed Church," or what would later be called "Unitarians," who, of course, deny the doctrine of the Trinity.³⁸

During Newton's lifetime, numerous English anti-Trinitarian treatises appeared. In fact, many of the Latitudinarian divines, who were a group of liberal Anglican clergymen who aligned themselves with progressive and liberal movements, often expressed anti-Trinitarian sympathies. Moreover, the Latitudinarians, in many ways a product of the earlier Cambridge Platonists, hailed the sciences as signs of a new age of light.³⁹ English philosopher and Anglican Samuel Clarke (1675–1729), for example, who was a personal friend of Newton, published in 1712 his *The Scripture Doctrine of the Trinity*, in which he promoted a "moderate Arianism," according to Maurice Wiles.⁴⁰ If Clarke's views were "moderate," Newton's anti-Trinitarianism was still yet more radical. In one of his "drafts on the history of the Church," for example, Newton fumed that "the heathens made all their Gods of one substance and sometimes called them one God, and yet were polytheists."⁴¹ Most of Newton's theological writings are singularly devoted to exposing the so-called "falsifiers" of New Testament texts, vilifying the Church Councils as the corruptors of the pristine and original religion.

Indeed, integral to Newton's anti-Trinitarianism was his deep interest in biblical prophecy, and, ultimately, his high view of scripture. While working out his notes on the *Principia* and formulating his "*Regulae Philosophandi*," or "Rules for the Study of Natural Philosophy," Newton was also engaged in developing a hermeneutic of the prophetic books of the Bible. He wrote,

So many and clear Prophecies, concerning the things to be done at Christ's second coming, are not only for predicting but also for effecting a recovery and re-establishment of the long-offt truth, and setting up a kingdom wherein dwells righteousness.⁴²

He goes on to say that the coming events will "prove" the Apocalypse, and "all together will make known the true religion, and establish it."⁴³ Like many others during his time, Newton argued that miracles associated with biblical claims were the best evidence to guarantee both the authority of the Bible and the authority of Christ as portrayed in the Bible. And according to Newton, of all the kinds of miracles, fulfilled prophecies were the most convincing.

But what needs to be emphasized here is that, just as Newton formulated rules for the study of nature, he also formulated rules for interpreting the Bible.⁴⁴ As he proceeded with both endeavors, it seems clear that his methodology in the two domains reinforced one another and that they depended strongly on his conceptions of God and of the relationship between God and creation. Parallels between the two abound. One of the most remarkable parallels is between Newton's first rule for the study of nature and the ninth of his "Rules for methodising the Apocalyps," which, incidentally, were both formulated at approximately the same time. The first rule in the *Principia* states that we are to admit "no more causes of natural things than such as are both true and sufficient to explain their phenomena," because "nature is simple and does not indulge in the luxury of superfluous causes."⁴⁵ The ninth rule for prophecy reinforced a similar interpretation of scriptural passages based on the principle of simplicity:

... choose those constructions which, without straining, reduce things to the greatest simplicity ... Truth is ever to be found in simplicity, and not in the multiplicity and confusion of things. As the world, which to the naked eye exhibits the greatest variety of objects, appears very simple in its internal constitution when surveyed by the philosophic understanding, so it is in these visions. It is the perfection of all God's works that they are done with the greatest simplicity. He is the God of order and not confusion. And therefore as they that would understand the frame of the world must endeavor to reduce their knowledge to all possible simplicity, so must it be in seeking to understand these visions.⁴⁶

What is most important for our purposes is that, in these early statements, Newton believed that he had recovered some of the original purity of pristine Christianity. Indeed, Newton saw himself in a "special bond to God ... destined to unveil the ultimate truth about God's creation."⁴⁷ In a series of letters to philosopher John Locke (1632–1704), beginning in November of 1690, Newton outlines a "historical account of two notable corruptions of Scripture," which reveals Newton's theological agenda as both reformist and heretical.⁴⁸ The two corruptions were ostensibly the prime trinitarian passages in the Bible: 1 John 5:7, and 1 Timothy 3:16. Newton also composed another letter about some twenty-six additional passages, all lending support to trinitarianism, which he believed were also corruptions:

By these instances it's manifest that y^e scriptures have been very much corrupted in y^e first ages & chiefly in the fourth Century in the times of the Arian Controversy. And to y^e shame of Christians be it spoken y^e Catholicks are here found much more guilty of these corruptions (so far as I can yet

Article

Newton Deified and Defied: The Many “Newtons” of the Enlightenment

find) & then to justify & propagate them exclaimed against the Hereticks & old Interprets, as if the ancient genuine readings & translations had been corrupted.⁴⁹

It is notable that Newton’s prophetic interests and heretical leanings continued even after the publication of his *Principia*, and are therefore evidenced both in his personal correspondence and unpublished manuscripts.

Several conclusions can be drawn here. The most obvious is that Newton used his scientific discoveries in support of the belief in an intelligent and all-powerful God. Newton’s famous “General Scholium” in his 1713 edition of the *Principia* is devoted entirely to his ideas about God. In it, Newton powerfully declared that “this most elegant system of sun, planets, and comets could not have arisen without the design and dominion of an intelligent and powerful being.” For Newton, the “true God is a living, intelligent, powerful” God who “rules all things, and he knows all things that happen or can happen.” The true God, in short, “endures always and is present everywhere.”⁵⁰ Moreover, his 1692–1693 letters to classical scholar and theologian Richard Bentley (1662–1742), the first of the Boyle lecturers in natural theology, show that he would assist a project which turned the *Principia* into an argument for divine providence.⁵¹

Newton’s piety and his search for the “true religion” were part and parcel of a developing pattern in his intellectual thoughts. But herein lie perhaps the most disturbing elements of Newton’s religious convictions. As Snobelen has shown, there is an anti-Trinitarian subtext to his theology in the General Scholium.⁵² Here Newton referred to God as “*Pantokrator*” – that is, the “Almighty” or “universal ruler.” In his private papers, he used the same expression to declare that the *Pantokrator*, the Father alone, is truly God, and that the metaphysical speculations of the “Gentiles” (i.e., the homoousians) corrupted the original meaning of the term “God.” The parallels show that Newton had used the Scholium, in part, as a subversive anti-Trinitarian polemic, something only his most trusted friends would have recognized.

Moreover, there is a direct connection between Newton’s search for the “true religion” and his alchemical writings and experiments. We now know that Newton transcribed and composed about a million words on the subject of alchemy. During the early modern period, “alchemy” and “chymistry,” as it was called then, were not distinct disciplines. Alchemy was never simply about the transmutation of metals into gold.⁵³ As historian William Newman has recently shown, Newton’s engagement with alchemy was rational, serious, sustained, and largely experimental.⁵⁴

But to what end? If we turn to other Newton scholars, we find hints of an answer. P. M. Rattansi, for instance, insisted that Newton’s alchemical papers demonstrated his growing allegiance to the hermetic doctrine of “universal spirit” animating all life—a doctrine which he shared with the Cambridge Platonists.⁵⁵ More explicitly, according to Betty Dobbs and Richard Westfall, Newton posited “occult” forces of attraction and repulsion in his system of physics. In his early years at Cambridge, Newton compiled a massive “*Index Chemicus*,” a compendium of over one hundred pages that contained thousands of references to more than 150 alchemical works.⁵⁶ Between the years 1668 and 1696, Newton spent approximately one third of his time working out some of these alchemy formulas. This work occupied the spring and autumn of each year, during which time his “furnace never went out.” The only other work to get in the way of his alchemy was the writing of the *Principia*, which took only about eighteen months.

But, again, what was Newton after in his alchemical research and experiments? According to Dobbs, during the seventeenth century “alchemy served a real though largely unconscious religious function for the adepts and that spiritual aspect of alchemy received emphasis during a time of religious unrest and dissatisfaction after the Reformation.”⁵⁷ Dobbs argues that Newton used alchemy as a critical counterweight against the inadequacies of ancient and contemporary atomism, which was seeing something of a revival at the time. Mechanical philosophies before Newton were not unified by any means, but these variegated theories generally agreed that bodies interacted only by contact. Thus, when Newton devised his own mechanical theory, he tacitly promoted nature’s ability to act on bodies from a distance with what he called “active principles,” which earned him the opprobrium of German philosopher Gottfried Leibniz (1646–1716) and Dutch physicist Christiaan Huygens (1629–1695), among others. But for Newton, these “active principles” were responsible for gravity, magnetism, fermentation, and other forces. As Dobbs writes, “the alchemical active principle—the vital spirit of which he [Newton] was in hot pursuit—was no more and no less than the agent by which God exercised his providential care among the atoms.”⁵⁸ For Newton, alchemy was important because it could demonstrate God’s action in the world, and thus forever lay atheistic mechanistic philosophy to rest.

For Newton, the “active principles” are God’s means of ordering and bringing activity to the world, and thus exercising his divine providence over it. Activity in nature was the province of divinity, and where Newton used the term “active” in his discussions of forces, we really should understand, wrote Dobbs, “that a divine

spirit is there at work either directly or indirectly, and that divine spirits ... are unequivocally incorporeal."⁵⁹ What is more, Newton identified this "divine spirit" with Christ, who acted as God's viceroy:

He [Christ] is said to have been *in the beginning with God* & that *all things were made by him* to signify that as he is now gone to prepare a place for the blessed so in the beginning he prepared & formed this place in which we live & thenceforward governed it. For the supreme God doth nothing by himself which he can do by others.⁶⁰

With this, we can see a fascinating connection between Newton's alchemy and his anti-Trinitarianism. For, in the same manuscript, Newton goes on to say that "God & his son cannot be called one God upon account of their being consubstantial," but only through a "unity of Dominion ... the Son receiving all things from the Father, being subject to him, executing his will ... & so is but one God with the Father as a king & his viceroy are but one king."⁶¹ In other words, Christ, as God's executive, directs the "active principles." Thus, universal gravity, for Newton, demonstrates the omnipresence of God the Father; the alchemical agent in micromatter indicates continuing supervision of the world by God's viceroy, the Christ. Newton's alchemy, then, was his attempt to locate God's hand in nature, and thus push back against what he saw as an increasingly mechanized universe. Newton, it seems, found a way to link God to gravity through alchemy.

Newton preferred not to publicize his involvement in alchemy. A handful of his contemporaries did know about it though. A fascinating correspondence between Newton and Locke, for example, following the death of Boyle, reveals that the three men exchanged alchemical secrets and pledged each other to silence.⁶² As Newman observes, if Newton was a "magician," then so were Boyle, Locke, and many other figures of the so-called "scientific revolution." This should not surprise us for, to borrow a concept from Alfred North Whitehead, this was the "climate of opinion." As Dobbs pointed out, alchemy—and the study of the natural world in general—held a special religious function for these thinkers, especially ones who were dissatisfied with the general state of the religious world. Indeed, Newton's most concentrated work on alchemy and the scriptures occurred concurrently. In both alchemy and theology, Newton believed that a pure ancient doctrine had been corrupted in the course of its transmission through history. But he also believed that it could be recovered by intensive interpretative efforts devoted to a wide range of texts. His method for interpreting scriptural prophecies, as we took note of earlier, could equally have described his approach to the alchemical writings.

Newton was certain that all of the prophets had written in "one & the same mystical language," which was "as certain & definite in its signification as is the vulgar language of any nation whatsoever." He went on:

The Rule I have followed has been to compare the several mystical places of scripture where the same prophetic phrase or type is used & to fix such a signification to that phrase as agrees best with all the places.⁶³

This process of understanding both alchemical and biblical text engendered an allegorical hermeneutic. Newton came to believe that the account of Creation presented in Genesis was an allegorical description of an alchemical process. In the mid-1670s, Newton copied a manuscript note which begins:

It may seem an admirable & new paradox y^t Alchemy should have concurrence wth Antiquity and Theology; y^e one seeming merely humane & y^e other divine; & yet Moses, y^t ancient Theologue describing and expressing y^e most wonderful Architecture of this great world tells us y^t y^e spirit of God moved up y^e waters wth was an indigested chaos, or mass created before by God.⁶⁴

Out of this chaos, "God's great Alchemy" created the order of the world, manipulating matter by means of the *spiritus* as the alchemist tried to do in the laboratory. The alchemist's work was thus analogous to the divine activity at the Creation: both achieved their effects through the manipulation of the subtle vegetative spirit. As Newton explained in a notebook from the 1680s:

[J]ust as the world was created from dark Chaos through the bringing forth of the light and through the separation of the aery firmament and of the waters from the earth, so our work begins forth the beginning out of black chaos and its first matter through the separation of the elements and the illumination of matter.⁶⁵

Newton's research in alchemy and theology were thus simultaneous and interconnected. In both cases, Newton was engaged in a process of textual interpretation, devoted to uncovering the secret truth that had been distorted and concealed by intentional obfuscation.

The Recovery of the Ancients

What is most important here for our purposes is that, as Dobbs observed, "Newton's intellectual development is best understood as a product of the late Renaissance, a time when the revival of antiquity had conditioned the thinkers of Western Europe to look backward for Truth."⁶⁶ While he was working out his alchemy and composing his rules for the interpretation of biblical prophecy and for the understanding of nature, Newton had also immersed himself in the study of comparative

Article

Newton Deified and Defied: The Many "Newtons" of the Enlightenment

mythology and the origins of religious idolatry, which had become an increasingly popular genre of seventeenth-century historiography.

We know, for instance, that Newton owned, read, and annotated the universal histories of Walter Raleigh (1552–1618), Samuel Bochart (1559–1667), Gerardus Joannes Vossius (1577–1649), John Marsham (1602–1685), Robert Morden (1650–1703), Anton van Dale (1638–1708), and others, all of whom dealt with the "history" of religious idolatry through an examination of Jewish, Christian, and pagan sources. Such histories were attempts to justify the ways of God to humankind by disclosing the providential order in an otherwise postlapsarian world. Perhaps most important for Newton was Vossius's *De theologia gentili, et physio-logia Christiana, sive, De origine ac progressu idololatriæ: ad veterum gesta, ac rerum naturam, reductæ: de que naturæ mirandis, quibus homo adducitur ad Deum* (1641), which was one of the first books to examine the theology of non-Christian religions from a historical perspective. As one of Holland's leading humanists, who was also the son of a Reformed minister and himself a minister, Vossius believed that "true religion" required both true knowledge and true worship of the true God. Although pagan religion and idolatry are false, their object were ultimately correct. For Vossius, even false religion may have a divine origin since God reveals himself not only in scripture but also in nature and history.⁶⁷

Newton took the material found in Vossius and others and composed, sometime in the mid-1680s, perhaps one of his most puzzling manuscripts, *Theologiæ Gentilis Origines Philosophicæ*, or "The Philosophical Origins of Gentile Theology."⁶⁸ But as Westfall rightly points out, the *Origines* was the "most important theological work" Newton ever produced. Here Newton offered a history of the gradual corruption of an original, pristine, and true religion. He traced true religion back to the biblical Noah and his family. According to Newton, this Noachide religion survived in the Temple at Jerusalem and, to some extent, in pagan temples, especially those of the Roman cult of Vesta, the goddess of the hearth.

Newton also believed that these adherents of true, primitive religion had acknowledged the heliocentric cosmos in the architecture of their temples or prytanæa, which were constructed around central fires that represented the sun. As Newton wrote,

... one design of y^e first institution of y^e true religion to propose to mankind by y^e frame of y^e ancient Temples, the study of the frame world as the true Temple of y^e great God they worshipped. And thence it was y^t y^e Priests anciently were above other men well skilled in y^e knowledge of y^e true frame of Nature & accounted it a great part of their Theology.⁶⁹

Thus the original, pristine monotheistic religion included the study of nature. The ancient priests, such as the Persian magi and the Chaldeans of Babylon, were at once astronomers and theologians. This expression of belief in a *prisca theologia* pervaded Newton's theological writings.

But this primitive religion and its knowledge of the natural world was lost over time with the rise of idolatry, for just as Judaism had been corrupted after the time of the prophets, so Christianity had been led astray by proponents of the doctrine of the Trinity. Yet Newton also believed that God periodically brought about reformations that restored primitive religion, and the two most notable figures he cites are Moses and Christ. Thus, like other Protestant universal histories, Newton argued that men had discarded an absolute faith in God for a "veneration" of secondary effects, thereby confusing form and content, the kernel and the husk.

Perhaps most importantly, Newton also proposed a way to recover the pristine religion of Noah. Newton, in short, called on a divinely sanctioned natural philosophy to return humanity to a prelapsarian Paradise. Indeed, Newton considered the notion that he himself might be part of "a remnant, a few scattered persons which God hath chosen," who "can set themselves sincerely & earnestly to search after truth."⁷⁰ It was this "remnant" who preserved or were able to recover ancient natural philosophy and true religion with the kind of dedication and commitment that Newton himself had given to science, theology, and history. The discoveries made by Newton in natural philosophy, then, were merely the rediscovery of the ancient revelations.

The *Origines*, therefore, is an apocalyptic narrative of decline that emphasized the crucial role science could play in overcoming corruption in religion and natural philosophy. In this sense, Newton had decentered the Bible, despite his dedication to biblical chronology and prophecy. There is no way, he wrote in *Origines*, "to come to y^e knowledge of a Deity but by the frame of nature." For as far back as Noah, the true system of the world was known through the study of nature, "so that anyone of keen mind, from any people, might gather the truth from it, and thus come to know God from his works." After all, the trinitarians had corrupted the biblical text, and thus undermined the earlier metaphor of "Two Books," the book of nature and the book of God's word. The true "frame of nature," then, is made manifest only through a painstaking program of inductive investigation of nature.

All of this also shows strong echoes of the Renaissance commonplace of the lost *prisca sapientia*, particularly the

Hermetic tradition. Indeed, according to Frank Manuel, Newton felt closer to the hermetic philosophical tradition than he did to the English mechanical philosophers of his own time.⁷¹ In the fifteenth century, Marsilio Ficino (1433–1499), a central figure in Renaissance humanism, worked for the Medicis, the powerful royal and banking family of Florence, translating new works of Plato that had recently been discovered. Around 1463, a new set of documents was recovered from a Macedonian monastery. These came to be known as the *Corpus Hermeticum*, purported to be the ancient writings of Hermes Trismegistus, an Egyptian sage who was admired by some of the early Church Fathers, including Athenagoras, Clement of Alexandria, Tertullian, Lactantius, and Eusebius.⁷² However, it was later demonstrated by Isaac Casubon (1559–1614) that these texts were actually from the fourth century CE, written by several authors, and from a number of different theological perspectives.⁷³

Immensely rich in content, there are only a handful of features of the Hermetic tradition that we can note. Ficino's foreword to his translation of the *Corpus* became commonplace. Combing aspects of Neoplatonic and late antique Christian thought, Ficino argued that Hermes was "the father of all theology." "There arose," he wrote, "a single, internally consistent, primal theology (*prisca theologia*)."⁷⁴ A similar interpretation was made by Giovanni Pico della Mirandola (1463–1494), another central figure of Renaissance humanism. To be sure, Pico's ideas were not solely derived from Hermeticism, but his debt to it is revealed in that in his "nine hundred theses" on philosophical, Cabalistic, and theological conclusions, ten are directly drawn from several works of the *Corpus*.⁷⁵ Central to both Ficino and Pico's interpretation of the *Corpus* is that they believed that there was

a fundamental agreement among the various traditions of intellectual history, which included the Greek philosophy of Plato and Aristotle, the Judeo-Christian tradition of the Bible and its theological interpretation in the works of Thomas Aquinas, and the esoteric traditions of the Cabala, Hermeticism, and Arab philosophy.⁷⁶

The popularity of the *Corpus* continued into the next century. While none of these traditions, however, were uniquely or even primarily "Hermetic," they gained authority by virtue of their connection with the primary values expressed in the vestiges of the Hermetic tradition. Both Jacques Lefèvre d'Étaples (1455–1536) and Philip Melancthon (1497–1560), one a professor of the Genevan reformer John Calvin (1509–1564), the other a close colleague of Martin Luther (1483–1546), offered distinct interpretations of the *Corpus*. The physician,

natural philosopher, and alchemist Paracelsus (1493–1541) was also part of this broader background. His work illustrates the importance of the Pythagorean or Neoplatonic worldview that had revitalized the Hermetic tradition. This Neoplatonic approach to the world continued to endure as an important element within "modern" science throughout the seventeenth century. Newton, for example, was deeply involved with the study of Paracelsan alchemy.⁷⁷

Newton, of course, was not alone among his contemporaries who appealed to the *prisca* tradition.⁷⁸ But it is only with his theological and chronological writings that we can now see how Newton regarded his natural philosophy as an integral part of a radical and comprehensive recovery of the true ancient religion. This apparently eccentric idea, and its significance for Newton's approach to mechanics, can be shown in his drafts for the additional corollaries that he wrote around 1694 for a projected second edition of the *Principia*. This material was intended to support the philosophical assertions on which the *Principia's* demonstrations rest. Ultimately, however, most of it remained unpublished. Nevertheless, it is clear that Newton regarded such ideas as an essential justification for his system of mechanics, together with its theories of matter, space, and gravitation.

These drafts have become known by Newtonian scholars as the "classical" Scholia, for they drew heavily upon the thoughts of Greco-Roman philosophers. A letter from Swiss mathematician Nicolas Fatio de Duillier (1664–1753) to Dutch physicist Christiaan Huygens (1629–1695) in 1691 provides a clear public statement of Newton's interests in the *prisca sapientia* of the ancients. Fatio, who had been chosen by Newton to prepare a second edition of the *Principia*, informed Huygens that Newton believed he had discovered quite clearly that the ancients, like Pythagoras, Plato, and others, had already discovered the true "system of the world," including his own inverse-square law.⁷⁹ Likewise, after visiting Newton at Cambridge in 1694, the Scottish mathematician David Gregory (1659–1708) reported that Newton

spread himself in exhibiting the agreement of this philosophy with that of the ancients, and principally with that of Thales. The philosophy of Epicurus and Lucretius is true and old, but was wrongly interpreted by the ancients as atheism ...⁸⁰

Gregory went on to note that

He [Newton] has written a tract on the origin of the Gentiles. Religion is the same at all times, but that which was received pure by Noah and the first men, the Nations corrupted by their own inventions; Moses initiated a reformation but retained the different

Article

Newton Deified and Defied: The Many “Newtons” of the Enlightenment

things of the Egyptians (it was the Egyptians who most of all corrupted religion with superstition) and from them it spread to other Gentiles. Christ reformed the religion of Moses.⁸¹

We should also note that when Gregory published his own *The Elements of Astronomy, Physical and Geometrical* in 1702, he included Newton’s ideas on the antiquity of the theory of gravitation in its Preface.⁸²

Many of Newton’s own revised manuscripts survive. In the draft Scholium of Proposition VI, Newton includes an extensive discussion of Lucretius and his contribution to gravitation theory:

Even the ancients were aware that all bodies which are round about the Earth, air and fire as well as the rest, have gravity towards the Earth, and that their gravity is proportional to the quantity of the matter of which they consist. Lucretius this argues in proof of the void ...⁸³

Further, in the draft Scholium of Proposition VIII, Newton asserted that Pythagoras had known the inverse-square law theory. He argued that Pythagoras had discovered by experiment the inverse-square relationship in the vibrations of strings. From this discovery, he said, Pythagoras went on to apply the same principle to the heavens:

... and consequently by comparing those weights with the weights of the planets, and the lengths of the strings with the distances of the planets, he [Pythagoras] understood by means of the harmony of the heavens that the weights of the planets towards the Sun were reciprocally as the squares of their distances from the Sun ...⁸⁴

In his reading of the ancients, Newton sees them as ascribing the cause of gravity to God, the “Deity.” In the draft for the Scholium of Proposition IX, Newton empathically draws from Marcobius, Cicero, Virgil, Porphyry, and Orpheus. “So far I have expounded the properties of gravity,” he wrote,

... Its cause I by no means recount. Yet I shall say what the ancients thought about this subject. Thales regarded all bodies as animate ... He held the sun and Planets for Gods. And in the same sense Pythagoras ... said that the sun was the prison of Zeus ... And to the mystical philosophers Pan was the supreme divinity inspiring this world with harmonic ratio like a musical instrument and handling it with modulation, according to the saying of Orpheus “striking the harmony of the world in playful song.” Thence they named harmony God and soul the world composed of harmonic numbers ... From this, it seems, arose the opinion of the Peripatetics concerning Intelligences moving solid globes. But the souls of the sun and of all the Planets the more ancient philosophers held for one and the same divinity exercising its powers in all bodies whatsoever ...⁸⁵

The above citations reveal a remarkable proposition: the more ancient the philosophy, the closer it was to the true natural philosophy. Although these were drafted and unpublished portions of Newton’s thoughts, the same basic thesis of the *prisca sapientia* and *prisca theologia* can be found in both the General Scholium of the 1703 *Principia* and the concluding pages of his 1704 *Opticks*. So published or not, Newton argued that his mathematics represents a recovery of the true natural philosophy of the ancient *prisca* tradition.

This belief in restoring both religion and natural philosophy to its original, pristine nature was Newton’s attempt at a “dual-reformation.” Newton’s goal, his entire scientific project, was therefore an attempt to “revive” or perhaps restore the Ur-religion of the Noachides. This connection between natural philosophy and an original, pristine theology, moreover, is found in the “handmaiden” philosophy of the Church Fathers, in which the Greek classical past was put to the service of theology—the queen of the sciences. Thus there is definite continuity between the supposed “modern” Newton and an ancient Christian tradition.

Conclusion

Newton’s religion, alchemy, hermeticism, and natural philosophy were tributaries that flowed and coalesced into a remarkable project: deciphering God’s will and actions in the universe. He attempted to achieve this by calling for a reformation not only in current discussions of natural philosophy, but in theology as well. Thus it seems clear that if Newton had not had the theological conceptions that he did, his scientific achievements would have turned out to be strikingly different. This observation raises serious questions about our understanding of so-called “conflicts” between religion and science. The new mechanical philosophy that emerged in the eighteenth century was not atheistic. For Newton, a mechanistic world was imbued with the presence of God.

But among Newton’s disciples, the immediate presence and activity of God in nature gradually eroded. The concept of force was ultimately secularized, and came to be regarded as inherent in matter. Eventually, natural philosophers came to apply this modified mechanistic explanation to principles of light, magnetism, electricity—even biology. Matter was “brute,” autonomous, and self-sufficient. Newton’s notion of “active principles” was absorbed into a materialistic philosophy: the very kind that he intended to refute in his published and unpublished writings. Ironically, it was this materialistic philosophy that came to be known as the “Newtonian” worldview.⁸⁶

Interestingly, the popularization of the “Newtonian” worldview was not primarily the work of scientists. Hubert Butterfield recognized this new “habit of mind,” and in his *The Origins of Modern Science* (1958) argued that the transmission of the scientific movement of the eighteenth century into a comprehensive materialistic philosophy was largely achieved by literary men, who “invented and exploited a whole technique of popularisation.”⁸⁷ This observation, moreover, leads Butterfield to conclude that “the great movement of the eighteenth century was a literary one—it was not the new discoveries of science in that epoch but, rather, the French *philosophes* movement that decided the next turn in the story and determined the course Western civilization was to take.”⁸⁸ Gay also recognized Voltaire’s desire to have “Newton’s physics without Newton’s God,”⁸⁹ and thus it was not science per se that was absorbed so much as a “new thinking cap,” a new view of life and the universe. As we have seen, this continues to be the case with modern popularizers of Newton.

Therefore, how odd it is that what came to be called the “Newtonian” worldview was so antithetical to everything Newton himself believed in. Newton’s natural philosophy grew out of his desire to explain how God acts in his creation. In the end, however, the real Newton was *defied* and was replaced with the *deified* Newton. Thus a very different, and far more complex, view of the relationship between science and religion can be obtained simply by looking more closely at the kind of scientific work done in the eighteenth century. And yet the story is still more complicated, for while he sought to show the harmony between science and religion, Newton had sacrificed core Christian beliefs. His gift to Christians lies chiefly in his determined, all-encompassing effort to ascertain God’s will and action in creation; but his rejection of Christian tradition and his embrace of what amounts to an incipient—and, doubtless, crude—form of biblical higher criticism, also serves as a cautionary tale. ●

Notes

¹See Voltaire’s *Letters Concerning the English Nation* (London, 1733), XIV and XXII.

²Richard S. Westfall, *Never at Rest: A Biography of Isaac Newton* (Cambridge, UK: Cambridge University Press, 1980), 874.

³“Sir Isaac Newton: Scientist, Mathematician and Astronomer,” Westminster Abbey, <https://www.westminster-abbey.org/abbey-commemorations/commemorations/sir-isaac-newton>.

⁴Cited in Theodore Besterman, *Voltaire* (Oxford, UK: Blackwell, 1976), 246.

⁵Cited in Peter Gay, *The Enlightenment: An Interpretation*, vol. 2, *The Science of Freedom* (New York: W.W. Norton, 1969), 2:131.

⁶*Ibid.*, 131.

⁷*Ibid.*, 130.

⁸Frank E. Manuel, *The Religion of Isaac Newton* (New York: Oxford University Press, 1974), 53.

⁹Alexander Pope, “Epitaph, Intended for Sir Isaac Newton,” in *The Major Works* (Oxford, UK: Oxford University Press, 2006), 242.

¹⁰Gay, *The Enlightenment*, 2:131.

¹¹See, e.g., Daniel J. Boorstin, *The Discoverers: A History of Man’s Search to Know His World and Himself* (New York: Vintage Books, 1983), 401–2; Allan Bloom, *The Closing of the American Mind* (New York: Simon and Schuster, 1987), 264; and finally the great science popularizers Carl Sagan, *The Demon-Haunted World: Science as a Candle in the Dark* (New York: Ballantine Books, 1996), 271; and Neil deGrasse Tyson and Donald Goldsmith, *Origins: Fourteen Billion Years of Cosmic Evolution* (New York: W. W. Norton, 2005), 64.

¹²Manuel, *The Religion of Isaac Newton*, 53.

¹³Voltaire, *Letters*, XIV.

¹⁴William Stukeley, *Memoirs of Sir Isaac Newton’s Life* (London, 1752).

¹⁵See, e.g., Patricia Fara, *Newton: The Making of Genius* (New York: Columbia University Press, 2002); Rebekah Higgitt, *Recreating Newton: Newtonian Biography and the Making of Nineteenth Century History of Science* (London, UK: Pickering & Chatto, 2007). See also Richard Yeo, “Genius, Method, and Morality: Images of Newton in Britain, 1760–1860,” *Science in Context* 2, no. 2 (1988): 257–84, <https://doi.org/10.1017/S0269889700000594>.

¹⁶David Brewster, *The Life of Sir Isaac Newton* (New York: Harper & Brothers, 1836), 18. Brewster repeated this praise verbatim in *Memoirs of the Life, Writings, and Discoveries of Sir Isaac Newton*, 2 vols. (Edinburgh, Scotland: Edmonston and Douglas, 1860 [1855]), 1:3.

¹⁷Stephen Snobelen, “‘The True Frame of Nature’: Isaac Newton, Heresy, and the Reformation of Natural Philosophy,” in *Heterodoxy in Early Modern Science and Religion*, ed. John Brooke and Ian Maclean (Oxford, UK: Oxford University Press, 2005), 223–62. See also the many other articles by Snobelen on the topic: especially, “Isaac Newton, Heretic: The Strategies of a Nicodemite,” *British Journal for the History of Science* 32, no. 4 (1999): 381–419, <https://doi.org/10.1017/S0007087499003751>; “‘God of gods, and Lord of lords’: The Theology of Isaac Newton’s General Scholium to the *Principia*,” *Osiris* 16, no. 1 (2001): 169–208, <https://doi.org/10.1086/649344>; and “To Dis-course of God: Isaac Newton’s Heterodox Theology and His Natural Philosophy,” in *Science and Dissent in England, 1688–1945*, ed. Paul Wood (London, UK: Ashgate, 2004), 39–65.

¹⁸In addition to Westfall and Manuel, more substantial studies on these themes include, e.g., the pioneering work of B. J. T. Dobbs, *The Foundations of Newton’s Alchemy or ‘The Hunting of the Greene Lyon’* (Cambridge, UK: Cambridge University Press, 1975) and *The Janus Faces of Genius: The Role of Alchemy in Newton’s Thought* (Cambridge, UK: Cambridge University Press, 1991). For more recent studies, see Andrew Janiak, *Newton as Philosopher* (Cambridge, UK: Cambridge University Press, 2008); Rob Iliffe, *Priest of Nature: The Religious Worlds of Isaac Newton* (Oxford, UK: Oxford University Press, 2017) and William R. Newman, *Newton the Alchemist: Science, Enigma, and the Quest for Nature’s “Secret Fire”* (Princeton, NJ: Princeton University Press, 2019).

¹⁹See discussion in A. N. L. Munby, “The Keynes Collection of the Works of Sir Isaac Newton at King’s College, Cam-

Newton Deified and Defied: The Many “Newtons” of the Enlightenment

bridge,” *Notes and Records of the Royal Society of London* 10, no. 1 (1952): 40–50, <https://royalsocietypublishing.org/doi/10.1098/rsnr.1952.0006>. More recently, see Daniel Kuehn, “Keynes, Newton and the Royal Society: The Events of 1942 and 1943,” *Notes and Records of the Royal Society of London* 67, no. 1 (2013): 25–36, <https://royalsocietypublishing.org/doi/10.1098/rsnr.2012.0053>.

²⁰Quoted in Munby, “The Keynes Collection of the Works of Sir Isaac Newton,” 42.

²¹Ibid.

²²Credit for this revised view largely goes to the ongoing efforts of the men and women behind the Newton Project, <http://www.newtonproject.ox.ac.uk/>. For a brief history of this remarkable digital harvest, see the review by Niccolò Guicciardini, “Digitizing Isaac Newton,” *Isis* 105, no. 2 (2014): 403–9, <https://doi.org/10.1086/676577>.

²³See James C. Ungureanu, *Science, Religion, and the Protestant Tradition: Retracing the Origins of Conflict* (Pittsburgh, PA: University of Pittsburgh Press, 2019).

²⁴Manuel, *The Religion of Isaac Newton*, 23.

²⁵Westfall, *Never at Rest*, 58.

²⁶Ibid., 309–10.

²⁷Cited in Richard S. Westfall, “Short-Writing and the State of Newton’s Conscience, 1662,” *Notes and Records of the Royal Society of London* 18, no. 1 (1963): 10–16, <https://doi.org/10.1098/rsnr.1963.0002>.

²⁸Westfall, *Never at Rest*, 89.

²⁹For a detailed discussion of Newton’s Trinity notebook, see J. E. McGuire and Martin Tammy, eds., *Certain Philosophical Questions: Newton’s Trinity Notebook* (Cambridge, UK: Cambridge University Press, 1983).

³⁰For a detailed discussion of these years, see Westfall, *Never at Rest*, 140–175.

³¹Brewster, *Memoirs of the Life*, 1.27–29. See also the detailed discussion in Newman, *Newton the Alchemist*, 136–49.

³²See Brewster, *Memoirs of the Life*, 2:50–54.

³³Ibid., 2:300–302.

³⁴Westfall, *Never at Rest*, 310.

³⁵Yahuda MS. 15.7, fol. 154, cited in Manuel, *The Religion of Isaac Newton*, 58.

³⁶Manuel, *The Religion of Isaac Newton*, 59.

³⁷See Earl Morse Wilbur, ed. and trans., *The Two Treatises of Servetus on the Trinity* (Cambridge, MA: Harvard University Press, 1932).

³⁸After Socinus’s death, his followers continued to defend and develop the basic doctrinal position he espoused, eventually producing the “Racovian Catechism” of 1605. See, e.g., Thomas Rees, *The Racovian Catechism, with Notes and Illustrations* (London, UK: Longman, Hurst, Rees, Orme, and Brown, 1818). For a general history of Unitarianism, see E. M. Wilbur, *A History of Unitarianism: Socinianism and Its Antecedents* (Cambridge, MA: Harvard University Press, 1945). See also Andrea Greenwood and Mark W. Harris, *An Introduction to the Unitarian and Universalist Traditions* (Cambridge, UK: Cambridge University Press, 2012), especially 32–50.

³⁹Newton was both a student and friend of Cambridge Platonists Henry More (1614–1687) and Ralph Cudworth (1617–1688) and Latitudinarian Isaac Barrow (1630–1677). See Dennis G. Wigmore-Beddoes, *Yesterday’s Radicals: A Study of the Affinity between Unitarianism and Broad Church Anglicanism in the Nineteenth Century* (Cambridge, UK: James Clarke & Co., 1971), 15–27. See also Martin I. J. Griffin, Jr., *Latitudinarianism in the Seventeenth-Century Church of England* (Leiden, Netherlands: Brill, 1992).

⁴⁰Maurice Wiles, *Archetypal Heresy: Arianism through the Centuries* (Oxford, UK: Clarendon Press, 1996), 110. A full-length study on Clarke can be found in Thomas C. Pfizenmair, *The Trinitarian Theology of Dr. Samuel Clarke (1675–1729): Context, Sources, and Controversy* (Leiden, Netherlands: Brill, 1997).

⁴¹Yahuda MS. 15.7, fol. 154, cited in Manuel, *The Religion of Isaac Newton*, 59–60.

⁴²Isaac Newton, *Observations upon the Prophecies of Daniel and the Apocalypse of St. John* (London, 1733), 252.

⁴³These “Rules” have been reproduced in Manuel, *The Religion of Isaac Newton*, Appendix A, 107–125.

⁴⁴Ibid.

⁴⁵Isaac Newton, *The Principia: Mathematical Principles of Natural Philosophy*, trans. I. Bernard Cohen and Anne Whitman (Berkeley, CA: University of California Press, 1999), 794.

⁴⁶Cited in Manuel, *The Religion of Isaac Newton*, 120.

⁴⁷Manuel, *The Religion of Isaac Newton*, 19.

⁴⁸Isaac Newton, *Correspondence of Isaac Newton*, vol. 3: 1688–1694, vols. 1–3, ed. H. W. Turnbull (Cambridge, UK: Cambridge University Press, 1961), 3:82–146.

⁴⁹Newton, *Correspondence of Isaac Newton*, 3:138.

⁵⁰See Newton, *Mathematical Principles of Natural Philosophy*, 939–43.

⁵¹Newton, *Correspondence of Isaac Newton*, 3:233–56. In his December 10, 1692 letter to Bentley, Newton explicitly states: “When I wrote my treatise about our Systeme I had an eye upon such Principles as might work wth considering men for the beleife of a Deity & nothing can rejoice me more than to find it useful for that purpose.”

⁵²Snobelen, ““God of gods, and Lord of lords,”” 169–208.

⁵³See Lawrence M. Principe, “Alchemy Restored,” *Isis* 102, no. 2 (2011): 305–12.

⁵⁴Newman, *Newton the Alchemist*, especially 497–99.

⁵⁵P. M. Rattansi, “Newton’s Alchemical Studies,” in *Science, Medicine and Society in the Renaissance*, 2 vols., ed. Allen G. Debus (Cambridge, UK: Cambridge University Press, 1972), 2:167–82; see also his “Some Evaluations of Reason in Sixteenth- and Seventeenth-Century Natural Philosophy,” in *Changing Perspectives in the History of Science*, ed. Mikulas Teich and Robert Young (London, UK: Heinemann Educational Books, 1973), 148–66.

⁵⁶See Richard Westfall, “Isaac Newton’s Index Chemicus,” *Ambix* 22, no. 3 (1975): 174–85, <https://doi.org/10.1179/amb.1975.22.3.174>.

⁵⁷Dobbs, *The Foundations of Newton’s Alchemy*, 80.

⁵⁸See discussion in B. J. T. Dobbs, “Newton’s Alchemy and his Theory of Matter,” *Isis* 73, no. 4 (1982): 511–28. See also Dobbs, “Newton’s Alchemy and His ‘Active Principle’ of Gravitation,” in *Newton’s Scientific and Philosophical Legacy*, ed. P. B. Scheurer and G. Debrock (Boston, MA: Kluwer Academic Publishers, 1988), 55–80.

⁵⁹Dobbs, “Newton’s Alchemy and his Theory of Matter,” 526.

⁶⁰Yahuda MS 15, cited in Dobbs, “Newton’s Alchemy and his Theory of Matter,” 527.

⁶¹Ibid.

⁶²Newton, *Correspondence of Isaac Newton*, 3:193, 215, and 216.

⁶³Cited Dobbs, *The Foundations of Newton’s Alchemy*, 109.

⁶⁴Cited in *ibid.*, 111–13.

⁶⁵Cited in *ibid.*, 164.

⁶⁶Dobbs, *The Janus Faces of Genius*, 10.

⁶⁷On Vossius, see, e.g., C. S. M. Rademaker, *Life and Work of Gerardus Joannes Vossius (1577–1649)* (Assen, Netherlands:

Van Gorcum, 1981) and Nicholas Wickenden, *G. J. Vossius and the Humanist Concept of History* (Assen, Netherlands: Van Gorcum, 1993).

⁶⁸On this text, see Richard S. Westfall, "Isaac Newton's *Theologia Gentilis Origines Philosophica*," in *The Secular Mind: Transformations of Faith in Modern Europe*, ed. W. Warren Wager (New York: Holmes & Meier, 1982), 15–34; J. Knoespel, "Interpretive Strategies in Newton's *Theologia gentilis origines philosophica*," in *Newton and Religion: Content, Nature, and Influence*, ed. James E. Force and Richard H. Popkin (Dordrecht, Netherlands: Springer, 1999), 179–202; and Snobelen, "Isaac Newton, Heretic," 381–419.

⁶⁹Yahuda MS 41, fol. 7r, cited in Knoespel, "Interpretive Strategies in Newton's *Theologia gentilis origines philosophica*," 196.

⁷⁰Yahuda MS 1.1, cited in Westfall, *Never at Rest*, 325.

⁷¹Manuel, *The Religion of Isaac Newton*, 45.

⁷²Florian Ebeling, trans. David Lorton, *The Secret History of Hermes Trismegistus, Hermeticism from Ancient to Modern Times* (Ithaca, NY: Cornell University Press, 2007), 43.

⁷³There are several important studies on the *Hermetic Corpus*. The one I found most useful for this article is Brian P. Copenhagen, ed., *Hermetica: The Greek Corpus Hermeticum and the Latin Asclepius in a New English Translation, with Notes and Introduction* (Cambridge, UK: Cambridge University Press, 1992).

⁷⁴Quoted in Ebeling, *The Secret History of Hermes Trismegistus*, 62.

⁷⁵*Ibid.*, 66.

⁷⁶*Ibid.*, 65.

⁷⁷See Charles Webster, *From Paracelsus to Newton: Magic and the Making of Modern Science* (Cambridge, UK: Cambridge University Press, 1982).

⁷⁸See discussion in Iliffe, *Priest of Nature*, 189–218.

⁷⁹Newton, *Correspondence of Isaac Newton*, 3:193, cited in J. E. McGuire and P. M. Rattansi, "Newton and the 'Pipes of Pan,'" *Notes and Records of the Royal Society of London* 21, no. 2 (1966): 109, <https://doi.org/10.1098/rsnr.1966.0014>.

⁸⁰Newton, *Correspondence of Isaac Newton*, 3:338, cited in McGuire and Rattansi, "Newton and the 'Pipes of Pan,'" 110.

⁸¹Newton, *Correspondence of Isaac Newton*, 3:338.

⁸²See David Gregory, *The Elements of Astronomy, Physical and Geometrical*, 2 vols. (London, 1715), 1:i–xii.

⁸³Cited in McGuire and Rattansi, "Newton and the 'Pipes of Pan,'" 112.

⁸⁴Cited in *ibid.*, 116–17.

⁸⁵Cited in *ibid.*, 119.

⁸⁶See, e.g., Margaret C. Jacob, "Newton and the French Prophets," *History of Science* 16, no. 2 (1978): 134–42, <https://doi.org/10.1177%2F007327537801600204>; Edward B. Davis, "Newton's Rejection of the 'Newtonian World View': The Role of Divine Will in Newton's Natural Philosophy," *Fides et Historia* 22, no. 2 (1990): 6–19; and J. B. Shank, "'There Was No Such Thing as the 'Newtonian Revolution,' and the French Initiated It.' Eighteenth-Century Mechanics in France before Maupertuis," *Early Science and Medicine* 9, no. 3 (2004): 257–92, <https://doi.org/10.1163/1573382042176263>.

⁸⁷Herbert Butterfield, *The Origins of Modern Science: 1300–1800* (New York: The Macmillan Company, 1958), 160.

⁸⁸Butterfield, *The Origins of Modern Science*, 166.

⁸⁹Gay, *The Enlightenment*, 2:140–50.

ASA Members: Submit comments and questions on this article at www.asa3.org→RESOURCES→Forums→PSCF Discussion.



ASA Launches Career Center

Employers: Find Your Next Great Hires

- **EMAIL** your job directly to job-seeking professionals
- **PLACE** your job in front of highly qualified members
- **SEARCH** our resume database of qualified candidates
- **MANAGE** jobs and applicant activity right on our site
- **LIMIT** applicants only to those who are qualified
- **FILL** your jobs more quickly with great talent

Professionals: Keep Your Career on the Move

- **POST** multiple resumes and cover letters or choose an anonymous career profile that leads employers to you
- **SEARCH** and apply to hundreds of fresh jobs on the spot with robust filters
- **SET UP** efficient job alerts to deliver the latest jobs right to your inbox
- **ACCESS** career resources, job-searching tips and tools

Visit <https://careercenter.asa3.org> to get started!