

# The Cambridge Companion to Newton

SECOND EDITION

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## 12 The religion of Isaac Newton

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From early in Newton's scholarly career to the end of his life, he displayed a deep interest in prophecy and Church history, and they remained the core elements of his faith. He knew a great deal about Christian doctrine, though his method of study – fueled by a fierce hatred both of Roman Catholicism and the doctrine of the Trinity – was primarily empirical and historical. His approach was also predominantly negative in that he was overwhelmingly concerned with what he took to be the corruption of the simple, original faith preached by Christ and his apostles. He was also fascinated by the history of pre-Christian religions, and in the earliest phase of his work in this area he assumed that there had been one rational religion that had been dispersed around the globe in the wake of the Flood. As Mordechai Feingold shows in his chapter in this volume, in the last three decades of his life Newton devoted a vast amount of time to reconciling different histories of the world in the centuries before the birth of Christ.

Newton's theological writings also tell us a great deal about the man himself. Not only did he believe that he had a special talent, namely his intelligence, but he also believed that he was one of the Elect, part of a chosen saintly remnant that would reign with Christ during the Millennium. For now, as the Bible showed, the gifted Christian had a duty to make use of his superior reasoning facilities to determine what was true and what was false in whatever he chose to study. This confidence in his own understanding was closely related to his view that a truly godly man such as himself had to find his own way in his studies. Newton's belief in the need for the free and independent study of religious topics was also bound up with his support for a broad religious toleration, a position that was particularly pertinent in his own case because of the extreme

views that he held. The brave decision he made in 1674 to avoid taking holy orders, and thus to remain a layman in the Church of England, was almost certainly because the formal demands of the ministry would curtail his freedom to engage in research, rather than because Anglican doctrine clashed with his radically heterodox private beliefs. Indeed, there is no evidence that Newton had arrived at his radical opinions by this time, though he had certainly developed a profound antipathy towards the doctrine of the Trinity by the end of the decade.

#### A STUDENT OF THEOLOGY

The sheer scale of Newton's religious investigations demonstrates that his theological research was central to his life. Although little evidence from his early religious study remains, a list of confessions of various offences that he compiled in 1662 demonstrates that he was a devout individual who took his duties to God extremely seriously. His uncle, stepfather, and first major patron were all Church of England clergymen, though as a teenager during the Cromwellian Protectorate (1653–8) he was exposed to powerful Presbyterian influences.<sup>1</sup> His pronounced puritan moral attitudes were deeply ingrained, and were not shaped by any particular religious upbringing, but he needed serious training to give form to his studies. At the Grantham Free School he attended from 1655 to 1661, pupils were required to attend and take notes on sermons on a daily basis, and they were also taught Greek and Latin to a good level. This provided Newton with the skills both to read original printed sources and, in due course, to compare these sources with manuscript originals. At Trinity College Cambridge, where he arrived in the summer of 1661, he studied the Greek New Testament in much more detail and learned many of the exegetical techniques that formed the bedrock of his independent theological studies from the 1670s. Although divinity was not part of the curriculum, religious discipline and devotion saturated his existence at the college as it had done at school. He and all other students

had to regularly attend the college chapel and the university church (Great St. Mary's), take notes on sermons, and be present at disputes on theological topics.<sup>2</sup>

The opportunity for serious theological study was limited by the famous projects in the exact sciences that Newton undertook in the decade following his introduction to the most pressing problems in mathematics and his discovery of the "new" philosophy in 1664. Within a short time of beginning his intensive theological research programme he had focused his ire on the doctrine of the Trinity, viewing it as a pagan and diabolical fiction that had been introduced early on in the history of the Church. There is no evidence that his extreme position arose as a result of meeting anti-Trinitarians, or of reading anti-Trinitarian texts. Rather, it seems to have been motivated by holding fast to core Protestant values that engendered an extreme dislike both of Roman Catholicism and of idolatry in general. While Newton's pronounced anti-Catholicism did not distinguish him from many of his countrymen, the combination of his heightened sensitivity to idolatry and his view that he should follow the dictates of his understanding gave raise to the belief that the doctrine of the Trinity was a particularly pernicious form of polytheism. Nevertheless, this catastrophic contamination of the true religion had left numerous footprints in the historical record, and he made it his Christian duty to detect them.<sup>3</sup>

Newton was unconcerned with many of the issues that exercised contemporary writers, and blank entries in his theological notebook on the topics of freewill, justification, and the remission of sins are indicative of a broader lack of interest in these subjects. Because Scripture gave no definitive answer to questions about these doctrines, Christians could not know the truth about them with any certainty and should not speak or behave as if they did. Learned and mature people could discuss such topics, but, unless such conversations were conducted in an appropriately charitable manner, they could lead to fundamental disagreements between Christians and even to schism. In particular, Newton condemned those aspects of

religion that were redolent of what contemporaries called "enthusiasm." He showed no sign that he was concerned with attaining the sort of inner spiritual regeneration or "paradise within" that was desired by other puritans such as Bunyan. As he saw it, speculative metaphysical theology, the fraudulent and imaginary fictions of the Roman Catholic Church, and the quest for an emotional brand of inspiration were all examples of religious corruption. In natural philosophy, the same tendencies manifested themselves in the penchant for developing over-ambitious, incredible, and subjective systems of thought, and in the reliance on unsubstantiated hypotheses.

As was true for all other natural philosophers of the period, Newton's cosmology was bound up with his views on the being and attributes of God. In his undergraduate notebook he drew from and built on the ideas of René Descartes, Henry More, and others to devise some preliminary statements about the relationship between God and his Creation. From the start he believed that almost all of the infinite cosmos was empty of matter, and that God (being an "infinite spirit") was present in these vacuous spaces as well as in material objects. At some point in the 1670s, as various contributors to this volume have noted, Newton wrote a lengthy attack on Descartes's *Principia Philosophiae*, whose philosophy had been the target of the infinitist cosmology and vacuist ontology offered by More. In this text, now known as "De gravitatione," he argued that the Cartesian equation of substance with extension was a pathway to atheism because it left no room for God to operate in the cosmos. Extension (which for Newton and More was space that was empty of matter) was an "emanative effect" of God, that is, something that existed necessarily as a result of God's nature, while substantial objects (i.e., material bodies) were separate from God. Newton also attacked Descartes's claim that the size of the cosmos was "indefinite," proposed (according to Newton) on the grounds that if space were infinite it might be identified with God. Empty space was really extended to infinity, and in a novel argument, probably based on the views of Isaac Barrow (the first Lucasian Professor), Newton stated

that empty space was made up of interpenetrating mathematical objects. Unlike Barrow, who had suggested that such entities were potential only, he argued that they were real (if invisible) and constituted an infinite space on the grounds that some mathematical objects were infinitely long.<sup>4</sup>

In the second half of Newton's essay he argued that God had created material objects by a mere act of will, and that this was accomplished by making objects accessible to "the senses and fancy" of perceiving subjects. This, he said, both eradicated unnecessary objects (such as unknowable substances) and removed redundant procedural steps from the divine act of creation. It also opened a pathway towards understanding God's activity through an analysis of the way in which humans moved their own bodies. Newton emphasized that this link was warranted by the numerous Scriptural references to the fact that humans were created in the image of God. Humans did not possess the same creative power as that of the Almighty, but their capacity to engage in freely undertaken self-motion was a "declination" of that power. It followed from this, he suggested, that we could learn about the Creation by empirically investigating the physical processes by which we moved our own bodies. Newton undertook such a research programme early in his career, and the question of how human self-motion was related to divine power remained of central importance to him throughout his life.<sup>5</sup>

The analogy between the human frame and divine creation formed a key part of the (extremely brief) account of Newton's religious beliefs that he published in his lifetime. These ideas were outlined in his *Optice* (1706) (the Latin edition of his *Opticks* [1704]), and in the "General Scholium" to the second (1713) edition of the *Principia Mathematica*. In a series of "Queries" appended to the main text of *Optice*, he argued that the universe was the divine analogue of the physical part of the brain that allowed humans to think and to be aware of the outside world, while in the "General Scholium" he gave a highly influential account of his conception of God. Newton emphasized that the latter was omnipotent and had created a world

that was both exquisitely designed and benignly superintended. God was worthy of worship not because of his infinite perfections but on account of his power and his eternal, omnipresent dominion. His attributes, and indeed his incorporeal substance, were inaccessible to humans as mere finite creatures ("as a blind man has no idea of colours") but could be discussed allegorically. Two issues, however, gave Newton hope that we could know God to a limited extent. Firstly, in the *Queries to Optice*, he rehearsed his claim in "De gravitatione" that we were created in the Image of God and that therefore we could make some inferences about his being from the proper analysis of our own minds and bodies. Secondly, we could understand God, and make inferences about his actions and intentions, from looking at the way he had crafted the natural world. "To discourse of God from the appearances of things," Newton concluded the "General Scholium" to the third (1726) edition of the *Principia*, "does certainly belong to natural philosophy."<sup>6</sup>

#### THE CORRUPTION OF THE TRUE RELIGION

Newton's protracted historical critique of Trinitarian Christianity marks him out as a radical anti-Trinitarian rather than a milder non-Trinitarian. From his scrutiny of the voluminous writings of pagans, the Church fathers and later historians, he produced a detailed picture of the terrible fate that had befallen the true Church in the fourth century. Although there had been many heresies before this, it was at this point, as he saw it, that all the major features of the most terrible heresy, the Great Apostasy, were put in place. These included relic-, image-, and saint-worship, the adoration of the Virgin Mary, and the introduction of the doctrine of the Trinity. Monks, who practiced increasingly bizarre mental and corporeal regimens that Newton examined at length, disseminated this false religion far and wide, and under Theodosius the Great it became the official religion of the Roman Empire at the end of the fourth century.

At the heart of Newton's account of the way that Christianity had been corrupted were the events during and after the great Council of Nicaea, held in 325 CE. In terms of doctrine, the vast majority of attendees of the council subscribed to the view that the Son was "homouousios" with the Father. What this word actually meant, that is, whether the Greek prefix "homo" should be translated into Latin as "same" or "similar," and whether "ousia" should be translated as "person," "nature," "essence," or "substance," exercised Newton for the rest of his life. Like everyone else, he knew that the term was not found in the Bible, and for that reason alone he considered that it ought to be rejected. However, the term had acquired a much darker resonance in the aftermath of Nicaea, for the Latins in the West had translated *homouousion* as "consubstantial" in order to rebut subordinationist claims that made the Son a creature, or a semi-god. For Newton this was a false definition that made the Son not just equal to God, but composed of the same physical substance (and thus numerically identical). The "physicalist" account of their relationship was a gross and obnoxious perversion that lay at the heart of the demonic debasement of pure Christianity. In reality God was completely different from and infinitely superior to the Son, but graciously allowed the Son various powers by effecting a union of their wills.

Although Newton downgraded the status of Jesus Christ in comparison with the position attributed to him by the orthodox, he had a sophisticated understanding of his nature and office. Christ had come to restore the true religion, as Moses had done before him, and he was truly the divine Son of God who had a unique redemptive mission. Newton denied the Socinian claim that Jesus was merely a man, and he held that Christ had pre-existed his incarnation as the created *Logos* mentioned in John 1:1. For this reason, his views were very close to what his contemporaries understood as Arianism (named after the fourth-century priest Arius), a view that was seen as the most potent heresy in orthodox Christianity. Newton also denied the orthodox position – designed to avoid the implication that part of the divine

godhead had died on the Cross -- that it was only the human part of Jesus Christ, joined to the *logos* by some obscure "hypostatic union," that had suffered and perished. Rather, for Newton Jesus Christ was the intelligent, homogenous incarnate *logos* whose humility, obedience, and crucifixion had prompted God to elevate his status in such a way that he was entitled to be worshipped as the Lamb of God and as the Messiah.<sup>7</sup>

The architect of the great perversion of Christianity was Athanasius. Newton held him responsible not merely for introducing many of the most idolatrous practices and doctrines into official Christianity, but for rewriting and indeed fabricating the history of the Church so as to produce the version now held in common by orthodox Protestants and Catholics. Athanasius's religious misdeeds were immense, but Newton also noted that he and his henchmen were repeatedly punished by civil authorities for crimes such as sedition, immorality, and murder. He helped pervert the Council of Nicaea and other councils that followed, introduced a range of deviant views and ceremonies into orthodox Christianity, and persecuted the godly exponents of the original Christian religion. According to Newton, during a long exile in the Egyptian desert between 356 and 362 Athanasius fabricated a vast array of sources in order to give a Trinitarian tenor to the writings of the most authoritative Church Fathers. At the end of the 350s he also wrote a florid life of Antony, who founded the monastic order in the Egyptian desert. Athanasius was banished from Alexandria by emperors that Newton considered wise and godly (primarily on the basis that they were anti-homousian), but aided and abetted by his friends, and by the devil himself, he always came back into positions of seniority and influence. His greatest crime against the true religion was to ensure that Trinitarian Christianity became the orthodox version of that religion.<sup>8</sup>

Newton used standard scholarly analytic techniques to bolster his claim that Athanasius had rewritten history. He used primary accounts composed by pagan and Christian writers, and he used heterodox sources such as those composed by the fourth- and fifth-century

Arian chronicler Philostorgius, and the modern historian Christopher Sand. However, for more details he scoured major sources such as those he located in the *Annales Ecclesiastici* of Cesare Baronius. One line of argument was to point out that the decision at Nicaea had been by no means unanimous, and that some attendees had subscribed with mental reservation. Another tack was to claim that others present had subscribed willingly, but had understood *homousios* differently from the way it was later portrayed by Athanasius. The so-called argument "from silence" was also crucial to his approach. Athanasius's much later accounts of Nicaea and the events that followed could not be verified by independent documents. As a result of this, Newton was able to read as true all the stories propounded by Athanasius's enemies, which the latter, along with all subsequent orthodox historians denounced as corrupt or absurd. These referred to Athanasius's sedition, lying, immorality, subversion of ecclesiastical practices, and even murder. Orthodox accounts written in Newton's lifetime, which were based on Athanasius's own writings, wasted no opportunity to dismiss such stories as the work of evil and demented Arian heretics, but they provided Newton with a coherent and detailed counter-narrative with which he could run. And he did so with gusto, ploughing through Baronius and other sources to add a tremendous degree of detail and colour to his anti-Athanasian history. For over half a century he worked on this remarkably daring and innovative project, inverting and rebutting the orthodox Protestant and Catholic accounts.

On the topic of the bodily regimens of early Roman Catholics, Newton offered an idiosyncratic and original account that was at least partly autobiographical. In one lengthy diatribe, he lambasted the assumptions that underlay the monks' efforts to grapple with and conquer their sexual fantasies as a means towards attaining a life of perfect celibacy. Drawing on earlier work on the nature and deceptions of the imagination, he detailed the failures of the great founders of monasticism to discipline their lustful tendencies by engaging in dubious spiritual techniques and bizarre corporeal regimens. Taking on the imagination in this way, and indeed, thinking about celibacy

at all, were foolhardy activities, and one was always liable to fail, or even become mad. Solitariness, fasting, and constant meditation, with nothing edifying on which to focus one's thoughts, merely inflamed lust and eroded the defences against it; ultimately fatigue left the conquered monk (and, as the nature of Newton's writings suggested, occasionally himself) distracted by visions of naked women. Newton's concern with the imagination was a recurring theme in his writings, for it was the source of lust, idolatry, and the sort of fictitious intellectual systems that he despised. The only way to deal with it was to rely on the work of the intellect, on robust, empirical information, and on serious, hard work.<sup>9</sup>

#### PROPHECY

Newton's account of sacred history was framed by his understanding of prophecy; that is, he believed that the historical evidence contained in patristic and other writings depicted the fulfilment of various passages and images in prophecy. The most important of the prophetic writings was Revelation, the last book of the New Testament, and in his interpretation of this key text Newton identified strongly with a specific Protestant tradition of prophetic exegesis. Numerous writers, including the Christ's College scholars Joseph Mede and Henry More, had preceded him in interpreting the images of the Apocalypse as the divine history of Jews and Christians. The majority of Protestants held that the prophetic visions articulated in Revelation referred firstly to the persecution of Christians under pagan Roman emperors, and more importantly, to the trials of Protestant saints and martyrs at the hands of Roman Catholicism. Revelation not only depicted the past history of the battle between satanic forces and godliness, but it also held out hope to the blessed that they would reign with Christ in and beyond the millennium to come.

By far the most authoritative interpreter for Newton and many others was Mede, who had attempted to elevate the interpretation of Revelation to a scientific status in his *Clavis Apocalyptica* of 1627.

Five years later Mede produced an expanded version of the work, accompanied by a commentary that showed how various historical visions had already been "accomplished" in specific events. Following others before him, Mede claimed that the apocalyptic vision of the opening of the seven seals described the history of the Christian Church from apostolic times to the end of time. When another vision depicted the sounding of seven trumpets, this described the onset of the Great Apostasy, which, Mede argued, was to be located historically in the warping of true Christianity into the pagano-Christian demon-worship of Roman Catholicism. The sufferings of early Protestants, followed by their eventual triumph over the diabolical beast, was indicated by the vision of the pouring of seven vials of wrath on the agents of the beast. Ultimately, at some time in the future, Christ would return to usher in a millennial rule that would itself be followed by an eternity of bliss of the saints, and of torment for the wicked.

Newton agreed with most of Mede's findings, and was full of praise for his general approach. Indeed, his admiration for Mede outshone his respect for any other author in any other intellectual tradition. Newton appreciated the way that Mede had "methodized" prophecy by showing how an array of visions, understood correctly, really described the same events from different perspectives. This "synchronizing" of prophetic images was not original with Mede, but he had performed the task with a clarity, simplicity, and generality that was absent in the work of his predecessors. Newton followed Mede closely, and occasionally slavishly, and concurred that the Great Apostasy was marked by the advent of the principal features of Roman Catholicism in the fourth century. He endorsed specific dates that Mede offered for the opening of the seals and the sounding of the trumpets, and he shared his view that Christ's return was to be expected at some time in the future. Nevertheless, in significant ways, Newton's interpretation differed substantially from Mede's. He placed the invention of the doctrine of the Trinity at the center of the perversion of Christianity in the fourth century, thus locating

the Trinitarian and other Romanist "inventions" of Athanasius at the heart of the Great Apostasy. Not only did Newton bring forward the origins of the Great Apostasy by a few decades in contrast with Mede, but he emphasized that these much earlier events, and not the battles between Protestants and Roman Catholics in his own day, were the most significant episodes in sacred history.<sup>10</sup>

With characteristic ambition, Newton attempted to generalize the technique of synchronisms far beyond what Mede had accomplished. In a burst of creativity in the late 1680s he wrote down the outlines of a five-book treatise, the first of which concerned the language of the prophets, and the second of which concerned the allusions to the Apocalypse in the law, history, and religious ceremonies of the Jews. Drawing on Mammonides's *De Culhu Divino*, Josephus's *Antiquities of the Jews*, John Selden's *De Synedriis et Praefecturis Iuridicis Veterum Ebraeorum*, and John Lightfoot's "Prospect of the Temple Service," as well as a wealth of other primary and secondary sources (many reproduced in Bryan Walton's *Biblia Sacra Polyglotta*), Newton proceeded – as Mede had done earlier – to show how the events described in Revelation were set in the Tabernacle, and how its architecture and ceremonies foreshadowed the structure of the true (Judæo-Christian) Church, its division of offices, its proper forms of worship, and its future fate. As he launched into an analysis on the architecture of the Temple described in the first few chapters of Revelation, he gave increasingly detailed accounts of its dimensions, noting that he felt minded to give a "fuller" account elsewhere since other commentators had made so many mistakes.<sup>11</sup>

At some point he did just this, writing an account of Solomon's Temple based both on the claim that it was the same as that described in Ezekiel chs. 40–3, and also on certain assumptions about its connections with the Second Temple that was constructed by Zerubbabel, completed by Herod, and destroyed by the Romans in 70 CE. Newton built on the work of the previous commentators he had criticized, especially Lightfoot, Juan Bautista Villalpando (Villalpandus), Benito Arias Montanus, and Louis Cappellus. Although reliant on these analyses,

Newton's treatment was an original, erudite, and critical examination that drew on and reconciled as many different and independent sources as he could find. He made extensive use of Josephus's description of the Second Temple, took notes on the Talmud, and compared Hebrew, Greek (Septuagint) and Latin versions of Ezekiel – with the Septuagint version usually being preferred. To aid him in his task of correcting and harmonizing these sources, he made his own calculations of the optimal form of the Temple by deriving the lengths of both ordinary and sacred cubits (the ancient units of measurement). Newton's restoration of the exact dimensions of the Temple was accompanied by his account of its typological import for the future history of the Church. Solomon's Temple had been built with an inner and an outer court, the first being reserved for the priests, and the second for the people. The fact that gentiles were able to move around the outer court when it was rebuilt was an indication that idolaters had been allowed to pollute the Church (Ezek. 46:2); the account of gentiles treading down the outer court in Revelation 11 thus portended the great perversion of the Christian religion.<sup>12</sup>

Prophecy was not only written by way of allusion to the religious practices of the Jews, but it also took into account what Newton took to be a "figurative" language in which references to natural disasters referred to epoch-making social and political events in the human realm. This language had been written and spoken by a number of learned people who had lived in India, Egypt, and Persia at the time the prophecies were written down. He followed Mede and Henry More in listing a number of "definitions" based on this esoteric Indo-Egypto-Persian language, which had supposedly been decoded in the so-called "Chaldee" paraphrases found in the Targums (Jewish Aramaic translations of the Hebrew Scriptures) and in the early medieval work on dream interpretation (the *Oneirocriticon*) written by a Byzantine Christian known as Achmet. Based on the Medeian assumption that the prophets spoke in this figurative language, Newton understood the frequent apocalyptic references to natural objects such as the Sun, Moon, and stars, and to hailstorms, earthquakes, floods, meteors,



and comets, as accounts of historical political episodes. Indeed, it was a grave hermeneutical error to understand such references as real natural events. In one early version of his book on the language of the prophets, he followed the "definitions" with an extended section entitled the "Proof," which invoked a number of passages from the Old Testament to justify the claims made in Achmet. Newton was so conversant with the figurative language that he was able to immediately understand prophetic phrases as references to political events.<sup>13</sup>

Newton made use of his notion of the figurative language in a letter to Thomas Burnet in 1681 on the nature of Creation described in Genesis. Burnet, who had just written the first of two parts of his *Telluris Theoria Sacra* (Sacred Theory of the Earth), had asked Newton whether his own account of the creation of the Earth was not a suitable and plausible replacement for the narrative given by Moses. Newton admitted that Burnet's theory, which explained the origins of the solar system in terms of natural causes, was ingenious, but balked at Burnet's over-confident claim that his work gave the true account of Creation. Newton also took umbrage at the suggestion that Moses had propounded a fictitious story or "hypothesis," which he knew to be false, and which was designed to appeal to the imaginations of his unlearned audience. Although Newton agreed that Moses had "accommodated" his discourse to the capacities of the vulgar, he argued that Moses had described the visible or "sensible" creation, and had crafted his story to convey what ordinary people would have seen (rather than what they could currently imagine) if they had been present during the first few days of creation. Thus, although the Mosaic narrative bore no relationship to the physical development of the cosmos, it was not false. Moses, who was writing as a prophet rather than as a philosopher, could have given more detail about other features of the universe, such as the existence of other star systems (where Newton believed there was life on orbiting planets), but had decided not to, conversing instead in the figurative language of Asia and the Middle East.<sup>14</sup>

Newton rehearsed this division between what was appropriate to the Bible, and what was relevant only to natural philosophy in the *Principia Mathematica*. In the Scholium to Definition VIII, he distinguished between "absolute" and "relative" notions of space and time, claiming that the techniques described in his own book would make it possible for scientifically sophisticated users to derive true and absolute accounts of the world from a number of different measures. By contrast, ordinary people were stuck with "sensible" or "relative" conceptions of things because they were governed by their sense-experiences. For example, their inability to abstract from their sensory information left them unable to determine what was truly at motion and truly at rest in the case of two objects moving relative to each other. According to Newton, the so-called "common" sensory referents of terms such as "space," "place," and "motion" were to be understood when interpreting Scripture, but not when dealing with the natural world. Just as people corrupted natural philosophy when they dealt only with sensible or relative measures, so interpreters perverted the meaning of biblical terms when they understood Scriptural terms as referring to true or absolute quantities. Because such words concerned only what ordinary people could sense, nothing about the real nature of the physical cosmos could be gleaned from the Bible.<sup>15</sup>

The figurative language was key to applying prophetic terms to real-world geopolitical events but further justification in the form of "Propositions" or "Positions" was required to link various images to each other. In a major break from Mede's system, Newton synchronized each successive vial with its "correspondent" trumpet, the variant descriptions in the corresponding vials and trumpets presenting a different view of the specific historical event in question. He also broke with Mede by making the key period of 1260 years (42 prophetic months) of apocalyptic time begin with the onset of the fifth vial and trumpet, and terminate with the close of the sixth, rather than (as Mede had argued) with the start of the Great Apostasy in the fourth century. There was intense prophetic activity in the time marked



out from the first vial and trumpet to the end of the fourth, but it was the fifth and sixth trumpets/vials that were synchronized with a number of other key images in Revelation. These included the 42 months of the beast making war against the saints, the reign of the Whore of Babylon, and the treading underfoot of the holy city by the gentiles. Although this placed Newton's own time firmly within the 1,260-year period, his scheme emphasized the significance of those events that had taken place during the first four vials and trumpets. It expressed his view that the pouring of the vials should not be reserved for the heroic triumphs of Protestantism, and implied that nothing of any prophetic significance whatsoever had taken place since the Reformation. Mede's work had promised both his Puritan and Anglican readers a millennium whose start was imminent, but Newton's system deferred the expected date of the Second Coming (the start of the seventh trumpet and vial) many hundreds of years into the future.<sup>16</sup>

For his historical interpretation of prophecy, Newton pored over a vast number of sources, dwarfing the research efforts undertaken by Mede and others. He made slight changes to the dates Mede gave for the early development of the Great Apostasy, but retained Mede's general view of how specific events constituted "fulfillments" of various prophecies. The fourth century witnessed the gradual setting up of the religion of the beast on Earth, soon after the latter had been expelled from heaven. Trinitarian ("homousian") emperors took over the Christian world, and a swathe of demonic corruptions polluted Christian doctrine and practice. All this came to a head at the end of 380, when the 7th seal was opened, and in 395 (after fifteen years of silence), the sounding of trumpets, and pouring of vials began. Despite the multitude of terrible events that befell the Church in the fourth and fifth centuries, things worsened at the start of the seventh century CE, with the strengthening of Roman Catholicism and the advent of Islam.

Newton's counter-orthodox history of the Church contained a number of remarkable features. For example, he argued that the

terrible sufferings and tribulations of orthodox Christians in the fifth century were examples of divine justice. As he saw it, the thousands of Christians tortured and killed by goths, Vandals, and Huns were merely the victims of divine providence. The peaceful anti-Trinitarians, who worshipped the true God, were brutally persecuted by the orthodox, and were thus the godly saints and martyrs described in prophecy. While many exponents of the true faith fled to godly neighboring countries, God made use of what Newton termed the "wonderfully" violent goths and Vandals to exact vengeance for the hideous crimes committed against his own people. Amidst the litany of unprecedentedly ferocious acts against defenseless nuns and monks, the puritan Professor of Mathematics could see signs of godliness. There was a great deal of evidence that their efforts to thwart the expansion of Trinitarian Christianity stemmed from religious considerations rather than mindless savagery. They never, he said, persecuted their victims for their religious beliefs, but only for their immorality, and there was ample evidence – if one looked through pagan and indeed Newtonian spectacles – of the nefarious simfulness of early Roman and Alexandrian Christians.<sup>17</sup>

#### RESTORING LOST KNOWLEDGE

The assumption that he was restoring some lost and corrupted tradition lay at the heart of Newton's aim to recover a pristine non-Trinitarian Christianity, but it also galvanized his search for an earlier ur-religion that could be traced back to Moses and Noah. In this, he was knowingly drawing on a Renaissance Neo-Florentine tradition of lost knowledge, the *prisca sapientia*, which held that there had been a wisdom that had been lost but which could now be recovered. This learning, a syncretic mixture of philosophical and religious knowledge known to Noah, Pythagoras, and others, could be pieced together from the meticulous scrutiny of a number of different classical sources, whether they were the writings of poets and ancient historians, or the allegedly authentic texts of the pre-Christian magus,

Hermes Trismegistus. By writing in this tradition, Newton implicitly placed himself in a line of restorers of the true Noachid religion that included Moses and Christ himself.

In this undertaking, Newton joined Copernicus, Kepler, and others by invoking the great ancient Greek heliocentrists as authoritative predecessors. In an early version of Book 3 of the *Principia*, known as the "liber secundus" (written in 1685), he referred to the true (Newtonian) learning of the ancient Chaldeans. This evidence, coupled with the existence of contemporary drafts on the ancient religion in the hand of his *Principia* amanuensis Humphrey Newton, shows that early in the genesis of his masterwork he wanted to show that it was a restoration of a true philosophy that had been corrupted by the Aristotelian version. Although these claims did not feature in the version of the *Principia* that was published, Newton soon proposed a series of *prisca*-tinted additions to an apparently imminent second edition. In early 1692 he told the Swiss scholar Fatio de Duillier that the Ancients had been aware of Universal Gravitation, and he added that he was going to add a series of "Classical Scholia" to Propositions 4-9 in Book 3 of a second edition of the *Principia*. These "scholia," which survive in a number of drafts, also expressed his belief that the Ancients held God to be the true cause of all the phenomena of the universe. In May 1694 Newton discussed these views with the Scottish mathematician David Gregory. He revealed that he thought that the Egyptian Thoth was a Copernican, and that the atomistic philosophy of Epicurus and Lucretius was true. He gave Gregory a copy of the "Classical Scholia" for publication (as long as their real authorship was suppressed), and they duly appeared in a preface to Gregory's 1702 book on the elements of geometry and astronomy.<sup>18</sup>

These references to the Ancients' learning were the offshoot of a much larger project that took up much of Newton's time in the 1680s and 1690s. This was composed of three elements. The first was a re-analysis and harmonization of the various histories of the pre-Christian world to be found in the Old Testament and in various

pagan histories. The second part, from which the "Classical Scholia" were excerpted, involved rereading the works of classical historians and poets in order to divine signs of the true philosophy that the ancient writers had apparently veiled in various symbolic forms of writing. The last element dealt with the original, true religion that was safeguarded by Noah during the Flood and promulgated to his descendants. Newton drew heavily from the writings of Samuel Bochart and Gerard Vossius, as well as from Ralph Cudworth and other English writers Sir John Marsham and John Spencer. He argued that this "vestal" religion, which was soon practiced all around the world, had taken place in circular temples or pyramids, in the center of which burned a fire – a symbol of the Sun. By making their temples symbols of the cosmos, the Ancients had recognized that the world was the temple of God and had properly worshipped God for his power and dominion. This feature, as well as its specifically heliocentric structure, made it not only the original religion but also, as Newton explicitly described it, the most "rational" religion of all. With the exception of revelation there was no way, he added, that one could come to knowledge of God except from the investigation of nature. He concluded by pointing out that ancient naturalists were all priests in their respective cultures, implying that the modern natural philosopher, who was deciphering God's work, was engaged in an intrinsically religious pursuit.<sup>19</sup>

Newton's investigation of the ancient religion had radical elements. His contemporaries disagreed profoundly over how much credit should be given to the learning of the Egyptians. Many condemned their idolatry and ludicrous beliefs, while others, most notably Ralph Cudworth, argued that they had practiced an elite and esoteric form of religion that they had veiled in mystery to deceive the vulgar. Not only was this the source of the wisdom of the Israelites, but philosophers such as Plato and Pythagoras had traveled to Egypt to learn it. Although Newton was later deeply critical of Egyptian learning, and of the way Platonism had infected authentic Christian doctrine, early on in his career he argued that

the Egyptians had cultivated and been guardians of the true religion. He claimed that there was a "mystical" esoteric philosophy that underpinned the authentic varieties of ancient atomism as well as the philosophies of Orpheus and Pythagoras. They had known that there was life on other star systems; that the Earth was a planet; that comets traveled in ellipses beyond the sphere of the Moon; and they knew the true order of planets moving outwards from the Sun. In the "Classical Scholia" Newton argued that Thales and others had taught that everywhere was full of gods, that is, they were aware that an infinite spirit, God, existed everywhere and was the immediate cause of gravity. It was this learning that had been exported out of Egypt by Orpheus, Pythagoras, and many others, and it was always combined with a rational religious system, such as the one cultivated in vestal temples by the Roman king Numa Pompilius.<sup>20</sup>

The Ancients had attached a mystical significance to the numbers seven and twelve, the latter being made up of the seven heavenly objects, the four elements and the quintessence. In time, just as Galileo would later name the satellites of Jupiter after the Medici, so the progeny of Noah named the stars and planets after their heroes. However, this was a dangerous activity, and crafty priests began to argue that stars animated with the souls of the dead understood and influenced the activities of people down below. Humans, ever prone to superstition, soon fell to worshipping heavenly objects in their own right. This, Newton thought, was a "plausible" sort of idolatry, and it soon led to the worshipping of gods and goddesses in the various temples, and then to the belief that the souls of the dead could be translated into animals. Ancient Egyptian priests, for example, had claimed that they alone could command various souls and spirits to appear by virtue of various necromantic arts. It was these corruptions that Moses was sent to reform, but humans would soon turn away from the divine law that he imposed. Christ had once more returned people to the true Noachid precepts, but as Newton saw it, this religion had been perverted by Roman Catholics into the most obtuse form of idolatry – the worshipping of dead men and statues.<sup>21</sup>

Newton's belief in the great intellectual accomplishments of the Ancients was inextricably linked to what he thought the *Principia* was, and what he took to be his role as its author. He believed that, by publishing the *Principia*, he was recovering the actual knowledge that had been known to the Ancients, and his proposals to add references to this Ancient wisdom in various guises of the *Principia* were not mere "glosses" to a scientific text. He accepted the notion that the ancient priests of nature had amused the vulgar by revealing their precious mysteries in the form of obscure allegories and concentric hieroglyphs, the latter representing the true planetary order within the solar system. Ultimately, however, knowledge of these philosophical and religious truths had been corrupted by a misguided literalist hermenautics that resulted in idolatry and – in the case of the concentric signs – by the acceptance of Aristotelian geocentrism. For this reason, the *Principia Mathematica* functioned in part as a tool with which Newton could decode the poetic allegories that the Ancients had supposedly used to hide their own knowledge. Similarly, the relationship between the technically forbidding *Principia* and its readers mirrored the much older association between the knowledge held by the elite philosopher-priests and the ignorant common people.

#### SCRIPTURAL EXEGESIS

Newton's knowledge of the Bible was acknowledged as extraordinary by many of his contemporaries. He knew extended passages by heart, and had memorized a vast number of textual interconnections, holding the standard protestant belief that various passages of Scripture "interpreted" each other. This was a propitious moment to study the origins of the Bible. From the middle of the seventeenth century, various polyglots and critical editions of the New Testament proliferated, providing further fuel for both defenders and critics of orthodoxy. Increasingly drawn into the Republic of Letters, Church of England divines found themselves having to devise new methods to defend the sanctity of their preferred versions of Scripture against

attacks by deists, anti-Trinitarians, Spinozists, and Roman Catholic exegetes such as Father Richard Simon. Simon, whose works on the critical history of the texts of the Old and New Testaments were translated into English in the 1680s, was particularly disturbing for Anglican scholars. He made an extensive survey of ancient manuscripts in various European libraries, especially those of the Vatican and Louis XIV, and his work eroded confidence that any particular Greek manuscript of the New Testament could serve as the basis for an authoritative version of Scripture. In England, disputes over the meaning, authenticity, and Scriptural basis for the doctrine of the Trinity came to the fore in the wake of the Glorious Revolution of 1688-9.

Newton was keenly aware of these debates, and made copious use of the rich textual resources at his disposal. By the 1680s he was in contact with a number of other scholars at Oxford and Cambridge who were interested in examining the oldest surviving manuscripts of the Greek New Testament, and he subjected the human record of the word of God to the same type and degree of scrutiny with which he examined the documents relating to the history of the Christian Church. By removing what he took to be false interpolations from the accepted text of the Bible, he was able to reconstruct what he took to be the original and authentic version. Unsurprisingly, the bulk of his exegetical energies were devoted to examining the doctrine of the Trinity. In the spring of 1690, having just completed his stint as MP for Cambridge University in the first parliament after the Glorious Revolution, Newton was invited by his new friend John Locke to consider the pedigree of two central Trinitarian proof-texts, 1 Tim. 3:16 and 1 John 5:7-8 (which contained the so-called "[Johannine comma]"). These passages had long been subject to criticism from heterodox writers, and many Anglican divines were also hesitant to appeal to their authority.

In November 1690 Newton sent Locke a lengthy discussion of the two texts in question, arguing that both were examples of forgery. Unlike Simon, he was not prepared to consider them as the harmless actions of over-enthusiastic Catholic scribes, nor could they be excused by having been introduced to counter obvious heresies. In

the case of the Johannine comma, Newton undertook a lengthy treatment of how and why the text had been introduced. Early scribes had glossed the original text in margins of various manuscripts in order to make it more clearly support the doctrine of the Trinity, and in time the gloss had "crept in" to the main text. He performed the same analysis on 1 Tim. 3:16, using evidence from Walton's *Biblia Sacra Polyglotta* about the readings of these passages in other bibles, along with references in secondary literature to the oldest extant Greek manuscripts. He told Locke that his essays were merely neutral pieces of textual criticism, though his argument was clearly aimed at eroding the authority of the major texts used to support the doctrine of the Trinity. All the evidence, he concluded, showed that the texts were missing from the oldest manuscripts, and thus they had been added in much later. He complained to Locke that it was hypocritical of Protestants to condemn Catholics for interfering with the authentic Word of God when their own bibles contained such perniciously false readings.<sup>22</sup>

As he had done with the writings of Athanasius, so Newton used conventional forensic techniques to demonstrate when, how, why, and by whom the original text of the New Testament had been corrupted. The man responsible for introducing the Johannine comma was Jerome, the fourth-century translator of the Vulgate (the "common" Latin version of the Bible used by the Catholic Church after the Council of Trent). In a "Preface" to the Epistles allegedly written by Jerome, the latter had claimed that the older Latin version of 1 John had wrongly omitted the comma, which could be seen in the oldest Greek versions. He defended his inclusion of the text in his own translation, firstly because it was in the Greek manuscripts, and secondly because it confirmed the true faith. For Newton, who accepted that Jerome was the author of the Preface, the first claim regarding the presence of the text in the oldest Greek manuscripts was patently false. It was not in the oldest surviving texts (as Richard Simon confirmed), nor was it cited by any of the Church Fathers in the great Arian controversy. Claims by modern editors of various bibles to have

personally witnessed ancient manuscripts containing the text were inventions of the "popish clergy," Newton argued, and similarly, Jerome's admission that it ought to be included because it corroborated the true faith showed that his action was not that of a disinterested translator. Ultimately, he told Locke, the non-Trinitarian reading made much more sense than the standard verses did.<sup>23</sup>

Newton used the same approach to the passage on "the great mystery of godliness" in 1 Tim. 3:16, and some weeks later he drafted another letter to Locke in which he subjected a number of other texts to the same type of scrutiny. Locke went to some lengths to get the text translated into French and published by the Genevan scholar Jean le Clerc. Le Clerc – with Newton's blessing – suggested that the unknown author bolster his argument with evidence from the writings of Richard Simon and Gilbert Burnet. The facts that the pieces were cast as examples of textual criticism, that they were anonymous, and that they would be translated into a different language, would all have made Newton's authorship impossible to detect, but for various reasons his enthusiasm for the project had dimmed by the end of 1691 and he successfully prevented its publication. Perhaps, despite the appearance of being a mere piece of criticism, it was obvious what the author's leanings were – and perhaps he feared that a determined detective could unmask his identity. As Scott Mandelbrote shows elsewhere in this volume, despite Newton's best efforts to suppress the text, it had a complex afterlife that led to its belated appearance in print in 1754.

#### THE DIVINE COSMOS

Like every other English natural philosopher, Newton assumed that the degree of order and beauty visible in the cosmos was *prima facie* evidence of the existence of an intelligent designer. In late 1692, he answered pertinent questions sent to him by the classical scholar and clergyman Richard Bentley regarding the implications for natural

theology of the doctrines in the *Principia*. Bentley, who was preparing to deliver the first Boyle lectures aimed at defending religion against atheists and deists, forced Newton to confront the fact that references to God were almost entirely absent from the work, and his questions prompted Newton to extend "divine design" arguments to astronomy and physics. The current nature and structure of the solar system, especially the fact that the Sun had just the right amount of heat and light to support life, could not have arisen by chance. The direction, speed, and mass of the planets also revealed a divine hand, since only a supremely intelligent being could have calculated and effected all these parameters in such a way that the result was the stable system we now witnessed. Bentley also forced Newton to think more deeply about the possibility of giving a physical explanation for Universal Gravitation. Although he told Bentley that he would accept a plausible account of that kind, or even a "spiritual" explanation, the evidence from the "Classical Scholia" and other sources suggests that he believed that the only direct or real cause of motions in the universe was God.<sup>24</sup>

Nevertheless, Newton was also privately committed to the notion that God made use of secondary or physical causes to effect great changes in the cosmos, though he also apparently believed that these events were occasionally superintended by angels. Soon after his correspondence with Bentley, Newton told David Gregory that he thought that the satellites of Jupiter were held in reserve by God for a new creation, and a few years later he told Gregory that the material agent that would probably effect the destruction of those planets closest to the Sun was the Great Comet that had appeared at the end of 1680. In 1725 Newton repeated this idea to John Conduitt (the husband of his half-niece Catherine), saying that the supernovae of 1572 and 1604 were examples of the same process happening in other solar systems. After a number of further orbits, the 1680 comet would be directed by a group of "intelligent beings superior to us" to crash into a waning Sun, causing its heat to increase dramatically. It would destroy any

life on those planets closest to it, including the Earth, though Newton also believed that the latter would be "repeopled" by the Creator. When Conduitt asked him whether he had expressed his views about the impending physical end of the world with sufficient clarity in his *Principia*, Newton replied with a rare chuckle that he had said enough for the cognoscenti to know his meaning.<sup>25</sup>

#### THE ESSENTIALS OF CHRISTIANITY

Newton's religious interests shifted in the last decades of his life. He retained a deep interest in prophecy and Church history, though the ferocious attacks on the morals of early Roman Catholics were absent from his mature writings. His account of the Ancients' heliocentric religion also disappeared, to be replaced by a monumental research program on the subject of ancient chronology (discussed elsewhere in this volume by Mordechai Feingold). Newton also devoted increasing attention to the early foundations of Christianity and to the proper ecclesiastical structure of the true Church. Christ and his apostles had inaugurated a pristine religion and an appropriate ecclesiastical polity, and in the first two centuries of the Church, all the authentic Churches had agreed in one and the same basic faith. There was much in common between the religion of the Jews and the gentiles, for they worshipped the same God and adhered to the same law (except the ceremonial element). However, when Jesus the true Messiah was raised from the dead, Newton claimed, "the Christian religion began to be preached among the Jews & seven years after among the Gentiles, who were thereby grafted into the stock of the Jews & became Gods people <or> Church called by Daniel the host of heaven, & persevered under the heathen Roman Emperors in various afflictions and persecutions." As for Church government, he believed that the Bible did not prescribe a specific structure but only a system that was sufficient for encouraging piety, practicing the true religion, excommunicating those who were impious or immoral, and relieving the poor.<sup>26</sup>

Newton insisted that whether expressed in the baptismal creed, or gleaned from reading the Scriptures themselves, the basic truths necessary for salvation that he called "milk for babes" were easy to understand. Christians had to believe that Jesus Christ was the Messiah prophesied in the Old Testament, that he was born of a Virgin, died for humans on the Cross, rose on the third day, and ascended to heaven. They should hold that Christ had sent the Holy Ghost to help the disciples with their preaching, and would return to judge the quick and the dead. Central aspects of the true religion were recalled by the earliest Christians in simple practices. Keeping the Sabbath celebrated the creation of the world, and Christ's passion was honored by means of the breaking of bread. In two statements of belief, he noted that the essence of the true religion consisted of two parts, the duty to God and the duty to humanity. The first commandment was to love the true God absolutely and with all one's heart and soul, while the second was to love one's neighbor as one's self. To commit idolatry by whoring after false gods was to break the first commandment, while to indulge in lustfulness, pride, greed, and ambition was to forsake the second. The first commandment had been routinely broken by the Israelites and latterly by Christians, while the second was the "moral law of all nations." In one extension of the second commandment, Newton added that men were not to feed on the flesh or drink the blood of living animals, and they were to be merciful even to animals.<sup>27</sup>

Central to Newton's Christian faith was the belief that there were other religious truths that were more difficult to understand, and the study of these topics (such as prophecy and Church history) was a duty for more mature Christians. Referring to Hebrews 5:14, he remarked that these were "strong meats for men of full age," and with such truths, he noted, "the mind is to be fed continually as the body is with meats." The meat was not to be mixed with the milk (cf. 1 Cor. 3:2), and issues such as what Christ did before his incarnation, where he was and what he did between his death and resurrection, what he was now doing in heaven, when he would return, and what he would



do after the Day of Judgment, were all questions that Christians could discuss and should endeavor to understand, but about which they should not condemn each other. In the same way, "disputable" questions concerning the nature and origin of matter, the production of the world by natural causes, free will, providence, the nature of angels, the state of the dead before the resurrection, forms of Church government, the question of whether the dead would rise with physical bodies, were all topics for Christians to study privately and to debate, but not subjects over which to divide the Church. Indeed, at one point Newton stated that disputing to this extent was to become "carnal" (following 1 Cor. 3:1-2). Similarly, philosophical opinions, such as whether the Earth went round the Sun, and whether there were many habitable worlds, had no place in religion; it was the introduction of such elements into religion that had helped to corrupt it. The discussion of all human opinions, doctrines, and theories potentially led to strife, and such issues could be studied in the proper way by philosophers but not by divines.<sup>28</sup>

For Newton, the issue of how to deal with disagreements between sincere Christians demanded an understanding of how the Christian polity was to be ordered. As with every other religious issue, he believed that this question could only be resolved by having recourse to the study of the early Church. This body of believers contained many sorts of people with very different opinions, and every member was allowed to remain in the state he was, whether circumcised or not. However, in these first ages of Christianity, Newton claimed, there were already two sorts of people who greatly troubled the "Churches of the uncircumcision." These were the Jews who tried to impose upon them the ceremonies of the law "and the traditions of their Doctors," and those gentiles who tried to force onto them the opinions of the heathen philosophers (discussed in the following section). For as long as different groups did not attempt to impose their own practices on others, the early community was truly Christian. At this time there existed two groups of Jewish Christians, the Nazarenes and Ebionites, who differed from

each other in key elements of their doctrine and practice but who did not condemn each other (at least initially) despite disagreeing over doctrine. While the former lived peacefully with the uncircumcised Christians, the Ebionites became overly zealous of the law after the siege of Jerusalem and endeavored to impose it on the converted (uncircumcised) gentiles. For this, Newton complained, they should be considered schismatics. His extensive analysis of the wide variety of views present in the early Church, and of the charitable attitudes each group apparently adopted towards each other, clearly underpinned his commitment to religious toleration in his own age.<sup>29</sup>

#### THE ARACHNID ORIGINS OF HERESY

In a new and extended project begun in the last two decades of his life, Newton devoted substantial efforts to grasping how pristine apostolic Christianity had been corrupted. As stated in 2 Thessalonians 2:7, a central text for radical Protestants, the early Church was troubled by the "Mystery of Iniquity," an apostasy that would gradually erode the integrity of the Church until its wicked author was revealed as the Man of Sin. For Newton the Mystery of Iniquity consisted of the "metaphysical theology of the heathens & Cabbalists," a bundle of absurd doctrines regarding the transmigration of souls, celestial intelligences, and, above all, the notion that the cosmos had been created by beings that were physical emissions of God. This evil force began in the Apostles' days but was successfully held in check, however, after a while it "broke into" the true Church, revealing the true nature of the Man of Sin. As Newton and others saw it, the miscreants, whose leaders were termed gnostics on account of the pretended knowledge that they professed, were true heretics, "Antichrists or enemies to y<sup>e</sup> true Church of Christ." They were surpassed in their pernicious historical influence only by the Roman Catholics, who in due course would perfect the most egregious elements of gnostic doctrines.<sup>30</sup>



The origins of the heresy were to be found in the idolatrous opinions of the ancient Egyptians, who by now were no longer the source of Newton's admiration. He noted that their bizarre ideas lay at the heart of the "metaphysical philosophy" of the heathens which dealt with the origin of the universe, the generation of the gods, and the transmigration of souls. The Egyptians devised the foundational emanationist myth concerning the origins of the cosmos and the practice of worshipping dead kings, representing the divine creation of the world "by a spiders weaving a web out of her own bowels." The Phoenicians based their own religious beliefs and practices on the same model, and from them (as Newton learned from Irenaeus's remarks on Hesiod's *Theogony*), the Greeks did the same. The Israelites were exposed to the heathens and began to worship their gods, and it was this depraved idolatry that Moses had countered by means of his own narrative about the origin of the world, which was produced (as Newton put it) "by the immediate will of the supreme God." Later on, the Jews again lapsed into idolatry and once more imbibed the deviant metaphysical theology by conversing with the Chaldeans, Egyptians, and Greeks. Newton claimed that Plato had derived his own philosophy from talking to the Jews when he was in Egypt, and he had appropriated the most significant elements of the Cabbalistic philosophy, which contained some of the worst aspects of the emanationist heresy. In turn, it was the study of Plato and other Greek philosophers by heathens prior to their conversion to Christianity that was one of the chief conduits by which heresies entered the Church.<sup>31</sup>

Some gnostics, such as those Newton termed the "hereticks of the circumcision" (Simon Magus, Nicolas, Cerinthus, and Menander) were influenced directly by Jewish Cabbalism. Drawing on Knorr von Rosenroth's *Kabbala Denudata* (1677-84) and Jacques Basnages's *History of the Jews* (1708), Newton showed at length how Cabbalist doctrine was based on emanationism. According to this system, there was a primary boundless and omnipotent being called En-Soph, from which emanated a sphere called the garment. Under that was another sphere called the sphere of splendor, and,

under that, a third sphere called the sphere of air. Within the last of these, ten subordinate beings called sephiroths (sephirahs) or splendors were gradually produced. The first of these was the first man, Adam Kadmon (also called Kether the Crown), from which flowed the second, which was Cochmah (Hachama) or Wisdom. From these arose the third, Binah (or Prudence), and these three higher beings were collectively called the Arich Anpin (the Man with a great, or long face). The remaining seven "gods" or "powers" (termed the Seir Anpin, or the Man with a little face) were produced from the higher sephiroths, and Newton suggested that the "Clymical Cabbalists gave the name of these seven <inferior Sephirahs> to the seven metals." The seven lower powers, he asserted, were understood by the Cabbalists to be the intelligences seated in the orbs of the planets. At one point, doubtless inspired by Basnage, he concluded that this cosmic structure must have been based on the Aristotelian system in which intelligences moved their respective planets, since the seven lower sephiroths and the Arich Anpin together corresponded to the eight Aristotelian orbs.<sup>32</sup>

Heretical doctrines such as these began to menace Christianity in the Apostolic age, and Newton argued that it was against them that Paul had warned (1 Tim. 1:4, 4:7 and 6:20) believers not to pay heed to fables, endless genealogies and "oppositions of science falsely so called." It was in imitation of the Jewish sephiroths that the gnostic heretics - with Simon Magus, whom Peter allegedly confronted as a sorcerer in Acts 8:9-24, as their founder and inspiration - devised their complex "aeons" (emissions from the primary being). From Irenaeus and the other great early heresiographer Epiphanius, Newton learned that Simon called the first emanation the first conception of the "mind" of God, which he also termed his wife Ennoia. After God impregnated Ennoia, the latter descended to the lower world and produced many further aeons. Other gnostics devised their own genealogies according to this general structure. The early second century religious teacher Basilides claimed that God emitted Nous, and Nous produced Logos, while Logos in turn emitted Prudence.

His pupil Valentinus awarded God two wives Ennoia and Theleus, or Understanding and Will, calling them the affections of the unknown father. Both of these men, Newton claimed, had lived in Alexandria and had conceivably learned these views from Egyptian Cabbalists.<sup>33</sup>

Newton divided up the progressive contamination of Christianity by gnosticism into four distinct periods. The first age lasted until the date conventionally given for the end of the Age of the Apostles, which lasted until the death of John in c. 100 CE. Based on the testimony of Irenaeus, Newton asserted that the first heretics were either Jews or Samaritans, such as Nicolas (allegedly the founder of the Nicolaitans condemned in Revelation), Simon, Cerinthus, and Menander, "but these being checked by the authority of Apostolick men who had conversed with Christ, [they] made no progress." The second age of heresy lasted until the death of Polycarp, teacher of Irenaeus and disciple of the apostle John, in 169 CE. Gnostics such as Saturninus, Basilides, Carpocrates, Valentinus, and Marcion now began to spread their poison in Christian communities, but the Church maintained the unity of its doctrine and the mutual respect of its followers, and so avoided being contaminated by the heresies.<sup>34</sup>

At the end of this period the "false prophets" Montanus and his female supporters Prisca and Maximilla, became extremely powerful, and the third age of heresy set in. According to Newton, their heresy "being a more refined sort of Gnosticism than any of the former spread much faster & within the space of twenty <or thirty> years insinuated it self into the Church of Rome." Montanism (or Cataphrygianism) was exceptionally dangerous, since it was carried out under the guise of traditional Christianity. During their celebration of the Eucharist, the heretics offered sacrifices to a god composed of the Bythos (the first being) and two Aeons, termed by them the Father, the Son, and the holy ghost. So seductive was this doctrine that it gained adherents such as Victor, bishop of Rome, and Tertullian. Irenaeus and a few others attempted to thwart their superstitious beliefs, divisive practices, and metaphysical wranglings, but to no avail. Victor claimed that the Word of God was "the λόγος ἐνδύθητος of the father from all eternity," and this inward word (*logos*

*endiathetos*) or wisdom emitted from the Father as a ray of light was emitted from the Sun. This explicit denial that the *logos* was a separate being with its own authentic will and understanding constituted the first formal introduction of emanationism into the Roman Church. Newton considered it to be equally reprehensible that Victor had introduced into the Church the practice of excluding Christians for opinions deemed to be heretical, excommunicating a tanner named Theodotus for affirming that Christ was a mere man born of the virgin by the power of the holy ghost.<sup>35</sup>

Newton dated the onset of the fourth age to 255 CE, in the days of Pope Stephen. The groups comprising the gnostic heretics now recognized each other's baptisms as authentic, and as Newton learned from Basnage, in the time of Stephen, the Church of Rome accepted the baptism of heretics and recognized their sacraments. It excommunicated the righteous African and Eastern Churches for forbidding the same, and thus gnosticism contaminated the original doctrine of the Church to its core. Allowing these heretical sacraments was, Newton noted, "the greatest step that could be made towards a reconciliation <with the mystery of iniquity>," and it gave rise to a terrible division within the Church. As ever, he understood that the degradation of the Church into parties was inevitably accompanied by the embrace of really (and not nominally) heretical doctrines and idolatrous practices. Auricular confession and corporal penance were now introduced into the life of the ailing institution, and with the rise of popery it disintegrated into parties. Finally, Newton returned to the source of the great perversion of religion that had blighted the Church in the fourth century. The notion of *logos endiathetos* led inexorably to the concept of *homouousios* and its physicalist and emanationist Latin rendition as "consubstantial," which – as we have seen – undermined the orthodox doctrine of the Trinity.<sup>36</sup>

#### A PRACTICAL RELIGION

Rumors of Newton's heterodox opinions began to circulate soon after the publication of the second edition of his *Principia* in 1713,

although already in 1705 he had been attacked by a large crowd of students as an "occasional conformist" (i.e., as a dissenter who only worshipped publicly for show). It is unclear to what extent he was a sincere member of the Church of England, that is, whether he exercised some sort of mental reservation when he publicly professed his allegiance to articles of faith that he privately denounced. According to Humphrey Newton, he worshipped regularly at the university church, Great St. Mary's, in the mid to late 1680s, though Humphrey also remembered that Newton's attendance at the college chapel had been perfunctory. Here, and on those occasions when Newton took public office, he publicly subscribed to the doctrines of the Church of England, although this must have caused him serious concerns. In his only explicit comment on the matter, penned at the end of his life, he argued that it was a strength of the Church of England that it allowed as broad a swathe of opinions as possible (such as his own). Radically, as ever, Newton insisted that it could impose on its members only those doctrines and statements that had Scriptural warrant, a view that excluded the Nicene and Athanasian creeds as well as a number of Articles.<sup>37</sup>

Newton always insisted that Christianity was a practical and useful religion, and he noted that "as faith without works is dead, so doctrines or opinions which do not tend to good works are unprofitable & useless." According to John Conduitt, he condemned the irreligious tendencies of late Stuart and Georgian society and was especially moved by stories of cruelty to animals. He lived by the Mosaic-Christian values he espoused in his writings and often displayed extraordinary acts of charity. His avoidance of "dead works" was primarily aimed at religious idolatry but a related and equally dangerous aspect of Christian backsliding was undue attention to the fictional products of the mind and the eye. Newton's abstinence from sexual relations, and from "inordinate desires of the flesh" – the wrong kind of love – was also a primary religious duty. Like his other Cambridge colleagues, his vocation as a scholar prevented him from getting married or engaging in carnal relations. Nevertheless, his

lengthy critique of the lustful thoughts and practices of the first monks shows that his commitment to chastity lay at the heart of his life of faith. Thinking about relations with women, or about women at all, was a distraction from his godly mission and an ever-present temptation that could only be avoided by hard work.<sup>38</sup>

In his later career, Newton consistently assailed the introduction of "metaphysics" into religion, and he criticized those who turned religion into a set of theories rather than realizing that its most fundamental tenets were moral and practical truths. The acceptance by allegedly orthodox Christians of the strange "metaphysical" doctrines of the heathen philosophers, the Cabbalists and latterly, the schoolmen, was the "grand occasion" by which the "moral and monarchical" meaning of Scripture had been turned into an unintelligible, "physical" sense. This contrast between false and idolatrous "metaphysical" or "physical" religious systems, and the true "moral and monarchical" version of Christianity lay at the heart of Newton's religious faith. God was the "supreme monarch of the universe," and he was worthy of being worshipped not because he was infinitely good or intelligent – although he was – but because he exercised infinite power and dominion. Fraudulent priests might convince the ignorant to believe in vanities, or "imaginary ghosts or Demons," but neither the priests nor the supposed supernatural entities had any real power. For Newton, it was the inability to exercise this power that bound together the idolatrous products of the imagination and the (false) consubstantiality of the Son and the Father: "'Tis not consubstantiality but power & dominion w<sup>ch</sup> gives a right to be worshipped." This was the defining characteristic of God, though in his wisdom he occasionally allowed Jesus Christ to exercise some of that power and dominion.<sup>39</sup>

Newton's religious studies formed the most significant part of his life, and they were not completely separate from his other intellectual pursuits. Although he adopted very different approaches to problems that arose in separate academic fields, his theological writings were governed by the same general standards as those that operated

in his scientific and mathematical work. Reason, hard work, and the disciplined use of the senses were always to be preferred before hypotheses, premature systems and, in general, to the figments of the imagination. It is because these principles guided his theological studies for more than half a century that they cannot be considered as the half-baked musings of a dilettante. Whatever credence we give to his religious researches today, they were the products of the same brilliant and intellectually daring analyst who contributed so much to science and mathematics.

## NOTES

- 1 Newton's maternal uncle William Ayscough, his stepfather Barnabas Smith (d. 1653), and the Trinity College fellow Humphrey Babington (brother of the best friend of Newton's mother) were all Church of England clergymen. His landlord while in Grantham was William Clarke, a staunch parliamentarian and Presbyterian Alderman (mayor) of Grantham in 1650-1 and 1656-7.
- 2 Newton's confessions are in Sheltonian shorthand in the Fitzwilliam notebook, Fitzwilliam Library, fols. 3r-4v.
- 3 Newton's religious writings are published at [www.newtonproject.ox.ac.uk](http://www.newtonproject.ox.ac.uk).
- 4 See A. R. Hall and M. B. Hall, *Unpublished Scientific Papers of Isaac Newton* (Cambridge: Cambridge University Press, 1962), pp. 132-4 and 137-41.
- 5 Hall and Hall, *Unpublished Scientific Papers*, pp. 141-4.
- 6 Newton, *The Mathematical Principles of Natural Philosophy* . . . translated into English by Andrew Motte, 2 vols. (London, 1729), vol. 2, pp. 389-92.
- 7 Socinus's views, by no means accepted by all "Socinians," are detailed in S. Mortimer, *Reason and Religion in the English Revolution: The Challenge of Socinianism* (Cambridge: Cambridge University Press, 2010); for the history of Arianism see M. Wiles, *Archetypal Heresy: Arianism through the Centuries* (Oxford: Oxford University Press, 2001). For similarities between Newton's position and those of leading Socinian writers, see S. Snobelen, "Isaac Newton, Socinianism and 'The One Supreme God,'" in M. Mulrow and J. Rohls (eds.), *Socinianism and*
- 8 Accounts of Athanasius's misdemeanors can be found in numerous locations in Newton's papers. National Library of Israel, Yahuda Ms. 2.3 and 2.5 detail the spread of Roman Catholicism in Europe, Asia, and Africa, while the text entitled "Paradoxical questions concerning the morals and actions of Athanasius," now in the William Andrews Clark Memorial Library, Los Angeles, contains a number of impassioned reflections about Athanasius's general behavior and his rewriting of history, as does Yahuda Ms. 19.
- 9 The most extensive treatment of the deviant corporeal regiments of the early monks is Yahuda Ms. 11.
- 10 Newton's first major attempt at a systematic account of the internal order and historical meaning of prophecy is Yahuda Ms. 1.1-1.8, composed in the late 1670s or early 1680s.
- 11 Yahuda Ms. 9.2, fols. 1r and 8r, dated to the late 1680s on the basis that it is in the hand of Humphrey Newton.
- 12 Huntington Library, Babson Ms. 434, fols. 3r-6r, and 39r-40r and 58r (for Newton's own description of his harmonizing strategy); Yahuda Ms. 2.4 (an earlier version of the Babson Ms.); Yahuda Ms. 13.2 fols. 19r-22v (notes from the Talmud). More generally, see R. Delgado-Moreira, "What Ezekiel Says': Newton as a Temple Scholar," *History of Science* 48 (2010), 153-80.
- 13 Yahuda Ms. 1.1 fols. 20r-23r (draft at 24r-27r) and 28r-55r (for the "Proof," with another version at Yahuda Ms. 1.1a).
- 14 Newton, *Correspondence*, vol. 2, pp. 323, 326, and 331-2.
- 15 Newton, *The Principia: Mathematical Principles of Natural Philosophy*, translated by I. B. Cohen and A. Whitman (Berkeley, CA: University of California Press, 1999), pp. 408-15, esp. pp. 411 and 413-14.
- 16 See Yahuda Ms. 1.1-1.5 passim.
- 17 Yahuda Ms. 1.6, fols. 35r-44r.
- 18 Newton, *Correspondence*, vol. 3, pp. 193-4, 338, 384, and 386; David Gregory, *Astronomiae Physicae & Geometricae Elementa* (Oxford, 1702). The original "liber secundus" is now CUL Add. Ms. 3990.
- 19 Yahuda Ms. 41, fols 1r-12v (esp. fols. 5r-7r), a work entitled "The Original of Religions" that was probably written at some point in the early 1690s (with drafts at Yahuda Ms. 17.3).
- 20 See Yahuda Ms. 16.2, fols. 3r-v and 17.2, fols. 15r-19v.

- 21 Yahuda Ms. 41, fols. 5r–7r.
- 22 Newton, *Correspondence*, vol. 3, p. 83.
- 23 Newton, *Correspondence*, vol. 3, pp. 88–92.
- 24 Newton, *Correspondence*, vol. 3, pp. 233–56.
- 25 King's College Cambridge, Keynes Ms. 130.11.
- 26 Yahuda Ms. 15.2, fols. 23r, 24r; 15.3, fols. 43r–46r; 15.7, fol. 116r.
- 27 Yahuda Ms. 15.6, fols. 100r–v and 102v; and Keynes Ms. 7, fol. 1r; 3, fols. 1r–3r, 9r, 17r, 27r, and 33r–34r.
- 28 Yahuda Ms. 15.3, fol. 45r (for falling out over religious matters as an example of carnality); 15.5, fol. 79r (and esp. fol. 80r); 15.6, fol. 100v and 15.7, fols. 134r–b.
- 29 Yahuda Ms. 15.4, fols. 68v–69r; 15.5, fols. 77v–79v; 15.6, fol. 97r, and 15.7, fols. 122v, 123r–v, 126r, and 176r. See in particular Yahuda Ms. 15.6, fols. 100v–103v for an analysis of the gradual corruption of the Apostles' creed. The Nazarenes, according to Newton, did not believe in Christ's pre-existence, nor did they believe that Christ had created the world, while the Ebionites believed that Jesus was a mere man, born the natural son of Joseph and Mary, and onto whom the divine nature of Christ descended. Newton considered the two groups separately, but understood the Ebionites to be schismatic Nazarenes; see Yahuda Ms. 15.7, fols. 171r–172r. The major source for the knowledge of the Ebionites was Epiphanius's *Panarion*.
- 30 Yahuda Ms. 15.4, fols. 53r–55r; 15.5, fols. 77v, 79r; 15.6, fols. 110r–114v; 15.7, fols. 120v, 131v, and 138r–139v.
- 31 Yahuda Ms. 15.5, fols. 77r–80r; 15.6, fols. 110r–111r and 116r–117r; 15.7, fols. 137r–139r.
- 32 Yahuda Ms. 15.7, fols. 120r, 127r–128r, and 137r–138r. For the sources of Newton's analysis see M. Goldish, *Judaism in the Theology of Isaac Newton* (Dordrecht: Kluwer Academic, 1998), 141–54. Newton seems to have been interested in the *Kabbalah Denudata* from the early 1690s, and he owned the 1708 English translation of Basnage's work.
- 33 Yahuda Ms. 15.5, fols. 83r–85r; 15.6, fols. 108r–111r; 15.7, fols. 127r–131r. For the confrontation of Irenaeus and Epiphanius with the early heresies of the Church (many of the details of which were undoubtedly hatched in their own imaginations), see J. G. A. Pocock, *Barbarism and Religion*, 6 vols. (Cambridge: Cambridge University Press, 1999–2015), vol. 5, *Religion: The First Triumph*.
- 34 Yahuda Ms. 15.4, fols. 68v–70r and especially 15.6, fols. 105r–107r.
- 35 Yahuda Ms. 15.4, fols. 70r–71r; 15.5, fols. 77r–82r; 15.7, fols. 116r–v, 121v–123Av, 126r, 139r, 170r.
- 36 Yahuda Ms. 15.4, fols. 71r–72r and 75r–76r (for Basnage); 15.6, fols. 109r and 112r, and esp. 15.7, fols. 130r–v, 139r, and 170r–177v.
- 37 Keynes Ms. 3, fols. 51r–52r (for Newton's account of the Church of England), Humphrey's reminiscences are at Keynes Ms. 135. For an accurate account of Newton's private beliefs published soon after his death, see William Whiston, *A Collection of Authentic Records* (London, 1728), pp. 1076–7. Larry Stewart gives an excellent account of the rumors surrounding Newton's heterodoxy in his "Seeing through the Scholium: Religion and Reading Newton in the Eighteenth Century," *History of Science* 34 (1996), 123–65, while Richard Westfall produces clear evidence that Newton was the target of accusations of "occasional conformity" at Cambridge in the first few years of the eighteenth century in *Never at Rest: A Biography of Isaac Newton* (Cambridge: Cambridge University Press, 1980), pp. 623–6. For the general techniques Newton used to hide his own views, see S. Snobelen, "Isaac Newton, Heretic: The Strategies of a Nicodemite," *British Journal for History of Science* 32 (1999), 381–419.
- 38 Yahuda Ms. 15.4, fol. 68v; Keynes Ms. 6, fol. 1r.
- 39 Yahuda Ms. 15.3, fol. 47v; 15.5, fols. 98r–99r; 15.6, fol. 115r and 15.7, fols. 154r and 176r.