

Natural Philosophy and Religion

Many of the doctrines of natural philosophy contrasted with the teachings of religion, and there were a number of possible solutions to this problem. Some authors appealed to the radical difference between the realms of faith and philosophy, relying on the Averroistic doctrine of the “double truth”. This was the case, for example, of Pietro Pomponazzi. Yet other authors, such as Bessarion or Simone Porzio, who came from very different backgrounds, went on the offensive, rejecting any confusion between philosophy and faith at the latter’s expense (even though Bessarion, like Ficino, argued for a greater compatibility between Platonism and Christianity). There were also others, like the Jesuit Pedro da Fonseca (1528–1599), who considered Plato’s natural philosophy too dangerously similar to Christianity and therefore preferred the Aristotelian paradigm. On the other hand, some thinkers tried instead to genuinely reconcile philosophy and faith, particularly during the periods of doctrinal conflict and religious warfare that followed the Reformation. This was particularly true in Protestant countries, where even at the end of the sixteenth century the problem of the double truth was a matter of intense debate. Reformed scholars displayed a clear bias against Aristotle, the philosopher who they held responsible for sustaining the scholastic edifice of Catholic theology, and in Wittenberg they even mounted a short-lived attempt to replace him with Pliny: but the disordered approach of the *Natural History* made it unsuitable for superseding the Aristotelian encyclopedia for teaching. Philipp Melanchthon (1497–1560) reconciled the distinction between religion and science of nature by arguing that nature was creation of God and everything in it had to be seen as the work of providence. Some philosophers, such as John Amos Comenius (1592–1670), supported the alliance between natural science and religion by arguing for a philosophy based on the biblical teachings, even though this position was often intended to combat the excess of natural philosophers rather than to offer an alternative system. On the other hand, both in Protestant and Catholic contexts, scientists like Rheticus (1514–1574) and Galileo denied that the Bible had any scientific value. Scholars like John Case (d. 1600), who considered Aristotelianism compatible with Christian dogmas such as creation and divine providence, were particularly fond of searching for ways to syncretize theology with natural philosophy. Attempts to reconcile the Philosopher with the Christian religion, even at the cost of relying on forced or fanciful readings, were still being made in the seventeenth century.

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Nor were these problems confined to Christian learned contexts: they were the subject of a number of similar reflections within the Jewish tradition as well. Jewish thinkers often considered natural science a mere system of hypotheses, which was capable of grasping only the superficial appearance of things, and was subordinate to the absolute truth offered by the Torah. This position was defended by authors such as Judah Loew ben Bezalel (also known as Maharal, 1520–1609), who posited a radical distinction between the natural world and the teachings of Torah, as well as Azariah Figo (1579–1547). In particular, Loew claimed that while it was possible to illuminate and explain the natural order of the physical world, this was not true of the relationship between God and his creation. This attitude was probably in part due to Jews' sense of exclusion and marginalization from the institutions where natural philosophy was taught and practiced (an important exception to this rule was Italy, where personalities like Elijah del Medigo (circa 1458–1493) took advantage of the separation between science and theology in the universities). Nonetheless, all of these Jewish authors—both the Italian “free-thinkers” and those who defended the superiority of the Torah—still relied on Aristotle as the main authority for natural philosophy, and there were multiple attempts by philosophers like Joseph ben Shem Tov (circa 1400–circa 1480) and Abraham Farissol (1451–circa 1525) to integrate the Stagirite within the Hebraic philosophical tradition. A minority of Jewish authors, including Moses Isserles (1520–1572), considered natural philosophy a useful tool for demonstrating the glory of God.

Source: <https://plato.stanford.edu/entries/natphil-ren/>

Galileo

Galileo's increasingly overt Copernicanism began to cause trouble for him. In 1613 he wrote a letter to his student Benedetto Castelli (1577–1644) in Pisa about the problem of squaring the Copernican theory with certain biblical passages. Inaccurate copies of this letter were sent by Galileo's enemies to the Inquisition in Rome, and he had to retrieve the letter and send an accurate copy. Several Dominican fathers in Florence lodged complaints against Galileo in Rome, and Galileo went to Rome to defend the Copernican cause and his good name. Before leaving, he finished an expanded version of the letter to Castelli, now addressed to the grand duke's mother and good friend of Galileo, the dowager Christina. In his Letter to the Grand Duchess Christina, Galileo discussed the problem of interpreting biblical passages with regard to scientific discoveries but, except for one example, did not actually interpret the Bible. That task had been reserved for approved theologians in the wake of the Council of Trent (1545–63)

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and the beginning of the Catholic Counter-Reformation. But the tide in Rome was turning against the Copernican theory, and in 1615, when the cleric Paolo Antonio Foscarini (c. 1565–1616) published a book arguing that the Copernican theory did not conflict with scripture, Inquisition consultants examined the question and pronounced the Copernican theory heretical. Foscarini's book was banned, as were some more technical and nontheological works, such as Johannes Kepler's *Epitome of Copernican Astronomy*. Copernicus's own 1543 book, *De revolutionibus orbium coelestium libri vi* ("Six Books Concerning the Revolutions of the Heavenly Orbs"), was suspended until corrected. Galileo was not mentioned directly in the decree, but he was admonished by Robert Cardinal Bellarmine (1542–1621) not to "hold or defend" the Copernican theory. An improperly prepared document placed in the Inquisition files at this time states that Galileo was admonished "not to hold, teach, or defend" the Copernican theory "in any way whatever, either orally or in writing." Galileo was thus effectively muzzled on the Copernican issue. Only slowly did he recover from this setback. Through a student, he entered a controversy about the nature of comets occasioned by the appearance of three comets in 1618. After several exchanges, mainly with Orazio Grassi (1583–1654), a professor of mathematics at the Collegio Romano, he finally entered the argument under his own name. *Il saggiaiore* (The Assayer), published in 1623, was a brilliant polemic on physical reality and an exposition of the new scientific method. Galileo here discussed the method of the newly emerging science, arguing:

Philosophy is written in this grand book, the universe, which stands continually open to our gaze. But the book cannot be understood unless one first learns to comprehend the language and read the letters in which it is composed. It is written in the language of mathematics, and its characters are triangles, circles, and other geometric figures without which it is humanly impossible to understand a single word of it.

He also drew a distinction between the properties of external objects and the sensations they cause in us—i.e., the distinction between primary and secondary qualities. Publication of *Il saggiaiore* came at an auspicious moment, for Maffeo Cardinal Barberini (1568–1644), a friend, admirer, and patron of Galileo for a decade, was named Pope Urban VIII as the book was going to press. Galileo's friends quickly arranged to have it dedicated to the new pope. In 1624 Galileo went to Rome and had six interviews with Urban VIII. Galileo told the pope about his theory of the tides (developed earlier), which he put forward as proof of the annual and diurnal motions of Earth. The pope gave Galileo permission to write a book about theories of the universe but warned him to treat the Copernican theory only hypothetically. The book, *Dialogo sopra i due*

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massimi sistemi del mondo, tolemaico e copernicano (*Dialogue Concerning the Two Chief World Systems, Ptolemaic & Copernican*), was finished in 1630, and Galileo sent it to the Roman censor. Because of an outbreak of the plague, communications between Florence and Rome were interrupted, and Galileo asked for the censoring to be done instead in Florence. The Roman censor had a number of serious criticisms of the book and forwarded these to his colleagues in Florence. After writing a preface in which he professed that what followed was written hypothetically, Galileo had little trouble getting the book through the Florentine censors, and it appeared in Florence in 1632

In the *Dialogue's* witty conversation between Salviati (representing Galileo), Sagredo (the intelligent layman), and Simplicio (the dyed-in-the-wool Aristotelian), Galileo gathered together all the arguments (mostly based on his own telescopic discoveries) for the Copernican theory and against the traditional geocentric cosmology. As opposed to Aristotle's, Galileo's approach to cosmology is fundamentally spatial and geometric: Earth's axis retains its orientation in space as Earth circles the Sun, and bodies not under a force retain their velocity (although this inertia is ultimately circular). But in giving Simplicio the final word, that God could have made the universe any way he wanted to and still made it appear to us the way it does, he put Pope Urban VIII's favourite argument in the mouth of the person who had been ridiculed throughout the dialogue. The reaction against the book was swift. The pope convened a special commission to examine the book and make recommendations; the commission found that Galileo had not really treated the Copernican theory hypothetically and recommended that a case be brought against him by the Inquisition. Galileo was summoned to Rome in 1633. During his first appearance before the Inquisition, he was confronted with the 1616 edict recording that he was forbidden to discuss the Copernican theory. In his defense Galileo produced a letter from Cardinal Bellarmine, by then dead, stating that he was admonished only not to hold or defend the theory. The case was at somewhat of an impasse, and, in what can only be called a plea bargain, Galileo confessed to having overstated his case. He was pronounced to be vehemently suspect of heresy and was condemned to life imprisonment and was made to abjure formally. There is no evidence that at this time he whispered, "Eppur si muove" ("And yet it moves"). It should be noted that Galileo was never in a dungeon or tortured; during the Inquisition process he stayed mostly at the house of the Tuscan ambassador to the Vatican and for a short time in a comfortable apartment in the Inquisition building. (For a note on actions taken by Galileo's defenders and by the church in the centuries since the trial, see BTW: Galileo's condemnation.) After the process he spent six months at the palace of

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Ascanio Piccolomini (c. 1590–1671), the archbishop of Siena and a friend and patron, and then moved into a villa near Arcetri, in the hills above Florence. He spent the rest of his life there. Galileo's daughter Sister Maria Celeste, who was in a nearby nunnery, was a great comfort to her father until her untimely death in 1634.

Kaynak: <https://www.britannica.com/biography/Galileo-Galilei/Galileos-Copernicanism>