



Bellarmino in perspective

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On 17 September we celebrate the feast of a Jesuit theologian who was a key figure in the Counter-Reformation. St Robert Bellarmine is perhaps best known for his dealings with one Galileo Galilei, whom he warned off teaching the Copernican ideas that would later underpin astronomy. However, Vatican astronomer Br Guy Consolmagno SJ takes a closer look at the interaction between the theologian and the scientist and finds that there was more to the Galileo Affair than meets the eye.

The Church of St Ignatius in Rome is famous for its *trompe-l'œil* ceilings by the noted Jesuit painter, Brother Andrea Pozzo. Looking into the arch over the nave one has the illusion of peering upwards into infinity; and the ceiling over the altar, which is actually flat, has been painted to produce the illusion of the inside of a dome.

The tomb of St Robert Bellarmine, whose feast we celebrate on 17 September, is also in this church. Dressed in his cardinal's robes, he can be seen under a side altar behind a pane of glass, near the ashes of his student, St Aloysius Gonzaga. The setting is an appropriate resting place for St Robert Bellarmine; he played a crucial role in the transition of cosmologies that began during his era, when the Protestant Reformation and the Copernican Revolution forced us to acknowledge that, at the very least, how we see truth depends on where we're standing.

Bellarmino was born in a small town outside of Siena in 1542. His parents were poor but noble; in fact his uncle, his mother's brother, was Pope Marcellus II (who only reigned for 22 days, in 1555). Robert entered the Jesuits in Rome in 1560, studied theology in Padua and then at Leuven in Belgium, where he was ordained and stayed on to teach theology for seven years. Pope Gregory XIII brought him back to Rome to teach at the new Roman College (now the Gregorian University), where Gonzaga was one of his students. (The younger man's zeal for the poor and sick led to him contracting the plague. Bellarmine attended young Gonzaga's deathbed and later promoted his cause for sainthood.)



Bellarmino rose to fame during this time as the author of a series of lectures against Protestant theology, *Disputationes de controversiis Christianae fidei adversus huius temporis haereticos* ('Lectures Concerning the Controversies of the Christian Faith Against the Heretics of This Time'), published in several volumes and generally known today simply as the *Controversies*.

They were the textbook of the Counter-Reformation, outlining in clear and logical arguments the case for and against the Reformation, providing a Catholic response to the issues raised by Luther and Calvin. It was not only the Protestants who found his arguments hard to deal with; in 1590, the *Controversies* were briefly placed on the Index by Pope Sixtus V, who objected to Bellarmine's argument that popes had limited temporal powers outside of the Holy See. (The listing was removed after the death of Sixtus V later that year.)

Because of his reputation as a scholar and his expertise in Protestantism, in 1589 Bellarmine was sent as a theologian to accompany the papal legate to Paris at a time when France was on the brink of a religious civil war. This was in the aftermath of the infamous St Bartholomew's Day Massacre and the ascent of Henry of Navarre (of 'Paris is worth a Mass' fame), with Paris under siege by Protestant forces. His experience there only promoted his reputation for integrity and political acumen.

In 1593 he returned to the Gregorian University as its rector, and then in 1599 was named a cardinal by Pope Clement VIII. As a cardinal, he served both on the

Roman Inquisition and as bishop of Capua, outside Naples.

He did not want to be a cardinal. He revealed his apprehension, and his wit, in a letter to his friend John Baptist Carminata, the Jesuit provincial of Sicily: 'I envy bishops, because I think their state is safer... I find the Calendar full of sainted bishops but can discover only one cardinal [saint], St Bonaventure; and he lived as a cardinal only a few days.' (letter of 11 June 1599, quoted in Broderick, *St Robert Bellarmine: Saint and Scholar*, p. 172)

Yet Bellarmine is most remembered today not for any of those accomplishments, long since relegated to the history books, or for the spiritual writings of his later life that were even admired in the Protestant world. Instead, his fame in the popular mind rests on one slight incident in 1616, when in his role as a papal theologian he was asked to deal with an upstart fellow Tuscan named Galileo.

In 1610 Galileo had published his discoveries with the telescope and used them to argue in favour of the Copernican system (a stance, incidentally, that he had already adopted more than ten years before he had the telescope's data to back him up.) At a time when religious arguments could lead to open warfare — the Thirty Years War itself was about to begin — Galileo stoked controversy both in the philosophical and theological worlds.

Why did Galileo stir up such trouble? Historians, biographers and amateur psychologists have debated that for years. Certainly, his arguments sold books, increased his fame, and got him a position as Court Philosopher and Mathematician to Cosimo di Medici, the Grand Duke of Tuscany. (The Duke, still in his early twenties, had been tutored in mathematics as a teenager by Galileo.)

To answer his religious critics, in 1615 Galileo had penned a letter to Cosimo's mother, the Grand Duchess Christina, herself a cousin of the King of France. In it he argued his case on theological grounds, quoting church fathers, friendly cardinals and a wide range of theologians. The letter was never officially 'published' but printed copies were widely circulated.

Notwithstanding his appointment as a 'Court Philosopher', Galileo had no credentials to publish philosophy, much less theology, as was a requirement in those turbulent times. But his fame, his undoubted skill as a writer and his political connections meant that his letter could not be ignored. Bellarmine, twenty years his elder and a veteran of theological disputes not only between Protestants and Catholics, but within the Church between Dominicans and Jesuits, was an obvious candidate to respond.

The crux of Bellarmine's argument, and perhaps the most quoted of all his writings today, is found in a private letter he wrote to Paolo Foscarini, a supporter of Galileo. He begins by pointing out:

...the Council [of Trent] prohibits interpreting Scripture against the common consensus of the Holy Fathers; and if Your Paternity wants to read not only the Holy Fathers, but also the modern commentaries on Genesis, the Psalms, Ecclesiastes, and Joshua, you will find all agreeing in the literal interpretation that the sun is in heaven and turns around the earth with great speed, and that the earth is very far from heaven and sits motionless at the center of the world...

But the bigger problem to Bellarmine, however, was that the Copernican system as understood by Galileo just didn't work. It threw away a natural philosophy that had been in place for 1500 years, since the times of the ancient Greeks, which formed the basic assumptions of the canon of accepted theology and philosophy. Furthermore, Galileo rejected that cosmology without providing the sort of absolute mathematical proofs to the contrary that everyone assumed was an essential part of doing such philosophy. Besides, all of Galileo's telescopic observations could be explained equally well by Tycho Brahe's geocentric system, where the planets orbited the Sun but the Sun orbited the Earth.

(Indeed, as recent work by the historian of science Christopher Graney has indicated, there were a number of good scientific arguments against Copernicanism that would not be resolved for another hundred years, with the invention of Newton's physics and the wave theory of light.)

And so, returning to his letter to Foscarini, Bellarmine could argue:

I say that if there were a true demonstration that the sun is at the center of the world and the earth in the third heaven, and that the sun does not circle the earth but the earth circles the sun, then one would have to proceed with great care in explaining the Scriptures that appear contrary, and say rather that we do not understand them than that what is demonstrated is false. But I will not believe that there is such a demonstration, until it is shown me. Nor is it the same to demonstrate that by assuming the sun to be at the center and the earth in heaven one can save the appearances, and to demonstrate that in truth the sun is at the center and the earth in heaven; for I believe the first demonstration may be available, but I have very great doubts about the second, and in case of doubt one must not abandon the Holy Scripture as interpreted by the Holy Fathers.

(Bellarmine's 12 April 1615 letter to Foscarini, translation of Maurice A Finocchiaro [2008].)

There's an oft-quoted quip attributed to the historian of science Pierre Duhem that Bellarmine's letter to Foscarini showed him to be a better scientist than Galileo, while Galileo's letter to the Grand Duchess showed him to be a better theologian than Bellarmine.

As serious analysis, the quip falls short of the mark. The real problem with both parties is that our modern idea of what science is and how it proceeds was only just being born at this time.

We now recognise that the way science understands the universe is not subject to the kinds of proof that one would demand in mathematics. Rather, science argues from probability to probability, always recognising that no description is perfect or final.

Both Tycho Brahe's system and Copernicus's system provide the same accuracy in predicting the motions of the planets — mathematically, they are equivalent. But only the Copernican system could be modified by Kepler into laws that would inspire Newton's new physics. Neither Tycho nor Copernicus were, strictly speaking, correct. But Tycho's vision was sterile, while the Copernican system led to deeper insights into the nature of the universe.

As a quip, however, naming Galileo as the better theologian and Bellarmine as the better scientist has enough truth to it, to earn a chuckle.

Galileo's theological arguments were not radically original; they were based on the long traditions of how the Church understands scripture. Bellarmine himself had argued forcefully against a too-rigid literalism in biblical matters. It's not surprising that the arguments in the letter to the Grand Duchess Christina have long been adopted and praised by pope and theologians.

Meanwhile, Bellarmine's correct assessment that Galileo didn't really have the final word was not only correct, but highlighted (though he didn't realise it) the need for a new way of thinking about science, one that recognises the essential nature of provisional hypotheses.

In 1616, Bellarmine met with Galileo (at the instructions of the Holy Office) and warned him against teaching Copernicanism. At that time, other books in support of the heliocentric system were placed on the Index, and even Copernicus's own book (already more than 70 years old) was subjected to minor corrections, to be used only as a mathematical tool rather than as a description of reality. But no work by Galileo itself was condemned, and Bellarmine even wrote a certificate denying that Galileo was a heretic. Galileo's more serious trial and condemnation would not occur until 1633, more than ten years after Bellarmine's death.

Still, the 1616 meeting of Galileo and the Jesuit theologian was one more step in souring Galileo's relationship with the Jesuits. The final break came with an exchange of a series of booklets over the next five years between Galileo and the Jesuit mathematician Orazio Grassi, culminating in Galileo's devastating classic on the philosophy of science, *The Assayer*.

Fr Grassi, humiliated in that book, stayed on at the Roman College. Among his later achievements he designed the Church of St Ignatius. And from the flat roof of that church, above the tomb of St Bellarmine, in the 1860s the Jesuit astronomer Angelo Secchi built telescopes descended from Galileo's design to first classify stars by their spectra. This classification was an essential link from Galileo's discoveries and Bellarmine's arguments to the panoply of modern physics — quantum theory, relativity, the Big Bang — that neither Bellarmine nor Galileo could ever have imagined.

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