



ESSAY REVIEW

Authority in Science and in Religion

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Annibale Fantoli, *Galileo: For Copernicanism and for the Church*, Studi Galileiani, Vol. 3, translated¹ by George V. Coyne, S. J. (Vatican City: Vatican Observatory Publications, 1994), xix + 540 pp., ISBN 0-268-01029-3, Paperback \$21.95. [Distributed in Italy and Vatican City by Libreria Editrice Vaticana; elsewhere by the University of Notre Dame Press].

Our perennial fascination with the Galileo affair arises no doubt from many sources: his extraordinary personality; the dramatic events of his life; his scientific contributions and his role in the founding of modern science; the historical importance of his clash with his church; his struggles for freedom of thought. Moreover none of these factors, all examined in detail in Fantoli's book, has merely an antiquarian interest for us. For the relationships between science and religion still remain stormy and ill-defined in our own day. As a result one of the chief reasons for the perennial re-examination of the Galileo affair is to see what light it might cast upon today's uneasy, and at times even hostile, interactions between science and religion.

Any promising voyage into these troubled waters must begin with a thorough and objective understanding of exactly what happened in the Galileo case, and why it turned out the way that it did. Fantoli's *Galileo* is to be especially welcomed for its dedication to precisely this goal. The book is a chronologically organized study of Galileo's life and work, which keeps the main narrative flowing easily in the body of the text, while at the same time the author provides very extensive comments in the endnotes which pursue narrower points of special interest and of scholarly dispute. The volume is enriched with so much information that it can easily be used to help the reader enter into rather specific episodes in the Galileo case and into the contemporary scholarly interpretations as well.

Fantoli's interpretive framework is captured in the subtitle: 'For

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¹Fantoli's book was originally published in Italian in 1993 by the same publisher under the title *Galileo: Per il copernicanesimo e per la chiesa*. Coyne's translation is complete, accurate, and quite readable.

Copernicanism and for the Church'. He sees Galileo as personally committed to both as embodiments of truth and as central to his life's work. As a result the focus is on how Galileo as an individual tried to correlate his science with his religion. On the surface level this meant that his personal acceptance of Copernican heliocentrism had to be reconciled with the geocentrism found in his church's biblically based teachings, which by that time had also become fully integrated with Aristotelian and Ptolemaic natural philosophy.

Galileo's response to this apparent impasse was to move the debate to the more fundamental questions of what conditions must be met if we are to say that either a scientific claim or a religious belief has been properly authorized. In the former case, appeal must be made to empirical evidence and its rational interpretation, even though Galileo seems never to have been able to specify exactly how these two factors combine into a unified authority to ground science. Regarding religious beliefs, he used his church's long-standing exegetical tradition, especially as found in St. Augustine, that God as the source of revealed truth guarantees the veridical character of the Scriptures, *provided* that we have first understood their true meaning.

Furthermore, Galileo correctly pointed out, quoting the Council of Trent, that members of the church are obliged to believe only what is really needed for salvation, i.e. only 'matters of faith and morals'. From all this he concluded that heliocentrism was to be preferred over geocentrism because: (1) the evidence as interpreted favors the former, although he admittedly never was able to establish a proof of it; (2) the geocentric passages of Scripture are not meant literally, but are only spoken metaphorically in order to be understood by the common person; and (3) neither view is a matter of faith or morals anyhow.

Fantoli goes over all these points in great detail, showing in effect how Galileo attempted to reconcile his scientific convictions and his religious beliefs by arguing that the authorities behind each are quite different, but not at all inconsistent since God was ultimately the source of both the natural world and the religious revelation. Of course, not everyone in Galileo's day agreed with how he delineated this reconciliation. We mention only the objections of Cardinal Bellarmine, the most prominent spokesman for the church at the time. He demanded that Galileo first provide a strict proof of heliocentrism before the relevant biblical passages should be re-interpreted. He also maintained, unfortunately, that all points of information in the Bible are matters of faith and morals, since God is the author of them all. Given this use, or misuse, of religious authority, Galileo had no further recourse. One of the special values of Fantoli's book is the thorough and balanced presentation which he gives to these, and many other, issues in the Galileo affair.

Furthermore, what we have in this book is also an invitation to reflect on the question of what values can be found in Galileo's struggles with these issues for an understanding of the relations between science and religion in our own day. The situation today has of course changed in some important respects from what it was

for Galileo. Moreover with the easy wisdom of hindsight we can now see that there are also other factors involved which Galileo overlooked.

Most prominent among the changes is the fact that, in regard to cultural dominance, science and religion (along with the authorities justifying each) have changed places. In Galileo's day religion backed by the word of God went largely unquestioned, while the newly born science of the time was little appreciated or understood; today science grounded in facts and proof has taken high precedence over religion, which is seen by many to be primarily a matter of personal taste.

Interestingly enough, Galileo's original notion that science is based on the authority of evidence and its rational interpretation remains in place, although even now scientists and philosophers of science still do not agree on precisely how that happens. Meanwhile that authority has become institutionalized along lines which are almost universally accepted today. Both experimental claims and explanatory hypotheses must be submitted to multiple, public testings; no individual scientist embodies the full authority of science. The whole process is governed by the logic of verification and falsification, and thus is self-corrective in character, especially because of the feedback effect of falsification. Across the board the conclusions that survive this process of scientific investigation are understood to be fallible, no matter how strong the evidence may be. As a result of all this the authority behind science, which was originally championed by Galileo, has come to be exercised and institutionalized in the scientific community as pluralist, democratic, public, fallibilistic, and self-corrective.

On the other hand exactly the opposite characteristics were already seen to be present in the biblically based religion of Galileo's day, and they have become even more pronounced since then in the Catholic Church which challenged him. That authority consists fundamentally in the power of the spoken word of revelation, and thereby in the credibility of the speaker of that message.

Because of the Catholic Church's origins in the era of the Roman Empire, its authority became institutionalized into a highly centralized and imperial ecclesiastical structure, which was created to serve as the custodian of the spoken and written revelation. Indeed the very word 'authority' originally referred to the 'author' to whom one appeals to justify a belief in the religious revelation. As the centuries passed, that authority became more and more concentrated in the hands of a few church leaders who thought alike, who tended to make decisions in private, and whose weight of office as custodians of the religious revelation made them quite self-protective and resistant to change. The integrity and welfare of the church as an institution tended to become a primary concern, since it had come to embody the authority on which the entire religious tradition was based.

This can easily be seen over the centuries in the increasing appeals to tradition and to the early Church Fathers, in the conciliar movement in the church, in the increasing authority of the Popes, in the clash with the reformers over the individual vs the hierarchy as the locus of interpretation of the Bible, and more recently in the teaching

of papal infallibility. Consequently the authority behind scripturally based religion, at least in the Catholic tradition, became monolithic, centralized, esoteric, resistant to change, and self-protective.

As a result of all this it should be much clearer to us today than it could ever have been to Galileo himself, for whom the new science was not yet well understood, that the institutionalized authorities behind science and behind scripturally based religion have very different, indeed even opposed, characteristics. Each is intended to provide justification for the beliefs it proposes. But that justification engenders a mind-set which is quite different in the two cases. Those who are well trained in either often find it very difficult to comprehend the mode of thinking employed in the other. Even our present systems of higher education seem designed to amplify, and not mediate, these differences. Of course, there is always the option of simply denying that any authority resides in either religion or in science, thereby resolving the issue by simply rejecting its existence. But doing this will not make either religion or science disappear. The question of the legitimacy of their authorities will remain.

At any rate Galileo's relocation of the science vs religion question, from the level of conflicting world views to the level of the authorization used to justify each view, has a permanent value and message for contemporary discussions about the relations between science and religion. The locus of the debate should not be exclusively or even primarily focused on the content differences between the world views involved, but rather on the character of the authority invoked to justify such views. Fantoli's *Galileo* is a detailed and excellent discussion of how Galileo personally tried to do precisely this. Part of our perennial interest in the Galileo affair is related to how we might follow his lead in relating science and religion in our own era.

There is another important factor in this matter which is usually overlooked in such debates. It is almost always assumed without examination that science and religion are both primarily cognitive enterprises, and thus that their interaction occurs almost exclusively at the rational level. But that is not the case. For unlike science, religion essentially involves a volitional, and therefore a non-rational, albeit not necessarily an anti-rational, factor at its very core. Appreciation of this fact is a considerable help for understanding how science and religion should attempt to communicate with each other.

This volitional factor is present in religion in two different ways. First, as we have argued, the authority behind scripturally based religion is the trustworthiness of the written or spoken word. Merely understanding the meaning of that message does not entail that one has also accepted it as true. What is additionally required for that is a willingness to accept the authority of the source or speaker of the message as a guarantee of its truth. In short an act of religious belief is an act in which we think we know that something is true (e.g. that there is a life after death), but the motive for giving assent to that claim is not a rational proof backed by sensory evidence, but rather is a willingness to accept the authority of the speaker of the message. In the

older language an act of belief is an act of the intellect which is determined by an act of the will. This notion of religious belief is to be found explicitly in the writings of Cardinal Bellarmine, who in turn probably derived it from Aquinas.

If this psychology of belief sounds odd, only a moment's reflection is needed to show that our natural, commonsense beliefs are grounded in the same way. If I tell you that I have two sons and no daughters, you now know something about me which you may not have known before. You know this because you are willing to believe me, assuming you do not already have a personal acquaintance with my family, and have not checked birth records, etc. Of course, what I told you may be false (because I am confused, or forgetful, or wish to deceive you), but that is irrelevant here. Your belief is based on a choice to accept me as an authority about my own family. All beliefs, natural or religious, are like that. Matters of original scientific fact and proof are not, although teaching them to others usually is.

Secondly, religious belief involves more than just accepting something as true. It also imposes on the believer an obligation to act accordingly in one's personal life. It entails a commitment or a choice by the believer to live according to a certain set of values. In short, unlike science, the primary goal of religion is moral goodness, not simply the attainment of truth. So again religious belief involves a type of volitional and loyalty commitment not found in science.

The impact of all this for our present concerns is that the interaction between science and religion involves not merely different truth claims and truth standards, but also a volitional factor in religion which is often neglected. This can be clearly seen in the Galileo affair. Perhaps this overlooked factor is one of the main reasons why religion–science debates so often are frustrating and unsuccessful. People speaking at different levels easily misunderstand each other. At any rate one of the present-day values in continuing study of the Galileo affair is that it helps to define the parameters within which science and religion interact.

One of the especially valuable features of Fantoli's *Galileo* is the lengthy last chapter that carefully examines how the Catholic Church grappled with the Galileo affair from the time of his death up to the present day, a topic rarely covered in such studies. What that history shows is that the church was highly concerned with protecting its own authority all along the way as the magnitude of its error in condemning Copernicanism and Galileo became more and more evident. Our attempt in this essay to contrast the different authorities of science and religion is well verified by that history. This is especially so in the recently discovered episode² of the adulteration of Pio Paschini's *Vita e Opere di Galileo Galilei*, which, as far as we know, receives its first account in English in Fantoli's book (pp. 480–483 and 500–508).

²For the most recent and best account of the entire episode, including detailed textual comparisons of the published version of Paschini's book with his original manuscript, see Paolo Simoncelli, *Storia di una censura: 'Vita di Galileo' e Concilio Vaticano II* (Milan: FrancoAngeli, 1992).

Briefly what happened was the following. In 1942, in recognition of the 300th anniversary of Galileo's death, the Pontifical Academy of Sciences commissioned a new study of the case, which was not to be an apologetic for the church but an historical and scholarly study of the documents, with the hope that this would help bring the Galileo affair to an end.

The man chosen to write this book was Pio Paschini, the rector of the Pontificio Ateneo Lateranense, who was a well-established and highly respected ecclesiastical historian. The project was completed by late 1944, and the manuscript was then submitted to the Vatican authorities for routine review prior to publication. The book soon was judged to be unsuitable ('non opportuna') for publication, apparently because it was too favorable to Galileo and too critical of the Church and the Jesuits. Despite the author's objections the book remained unpublished up to his death in 1962.

In 1964, however, the manuscript was published by the Pontifical Academy of Sciences. But this published version was changed very considerably from Paschini's original text so that it now was favorable to the Church and the Jesuits rather than to Galileo. Many hundreds of modifications were made both in the body of the text and in the footnotes to effect this re-interpretation, although the new Introduction gave no hint of this when it said that only moderate changes were introduced to bring the book up to date. The extent of the changes was finally uncovered in 1979 by Italian scholars who compared the published text with a copy of the original manuscript on deposit in the public library of Friuli, Paschini's original home, where it remains today.

It has also become apparent that the changes in Paschini's book were made to serve the needs of the Second Vatican Council in 1965; namely, to include a declaration about the relations between science and religion as part of its general theme of 'The Church in the Modern World'. The relevant declaration appears in paragraph 36 of 'Gaudium et spes', the concluding document of the Council. Paschini's adulterated book is quoted in the footnote to that paragraph 36 as a justification of the declaration made in the document about the relationship between science and religion.

Thus we see that a misguided attempt to protect the reputation, the integrity, and ultimately the authority of an institution has overruled the commonly held high value placed on scholarly honesty and truth. This embarrassing episode is a verification of the thesis of this essay. For it is much easier to understand how this could have happened in a context of a highly centralized and self-protective authority than in a situation where authority is exercised publicly. It is not just that different truth standards are found in science and in religion; it is also a matter of how they are actually used and institutionalized. To be fruitful, future discussions of science and religion need to take this into account. Fantoli's *Galileo* is to be welcomed for many reasons, including his help in bringing out the Paschini episode. For the Galileo affair continues.