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Galileo: Watcher of the Skies

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David Wootton discloses to the reader on page 182 that his aim is to provide an intellectual biography of Galileo Galilei. But this book does not. Wootton's aim is rather to re-enter, re-open or even unhinge the structures of all arguments about the so-called Galileo affair that have been written until now. His aim is to position himself in the debate concerning the relation between Galileo and the Church and, moreover, between science and religion.

This book is a long and vibrant oration which demonstrates that Galileo was an ungrateful person and that his ingratitude was directed toward the Roman Catholic Church. In a reverse reconstruction, Wootton intends to show how Galileo developed a sort of esoteric, almost too esoteric view of God to allow us to consider him a deist. Moreover, he reconsiders and endorses Pietro Redondi's thesis concerning Galileo's atomism and its ‘negative’ consequences with regard to the dogma of transubstantiation. Finally, he shows, by means of a very detailed analysis, how Galileo, first, was Copernican even before the end of the 16th century, second, remained Copernican even after the prohibition of the doctrine of Copernicus in 1616, and third, did not make appropriate use of his chances to continue investigating within the frame of the Copernican doctrine after Maffeo Barberini became Pope in 1623 under the name of Urban VIII.

In other terms, according to the author, objectively Galileo was in danger of landing in the fire of damnation (the one of the inquisitors) and therefore his abjuration of 1633 should be considered as a particularly lenient way of punishing him. Galileo should have been grateful to the Church for that.

David Wootton worriedly interrogates himself about the reasons for Galileo's behavior. Galileo’s scientific evidence went notoriously against the Aristotelian-Ptolemaic worldview (excluding his tides theory), but not

really in favor of any of the other two candidates, Tycho's and Copernicus' systems. Why did Galileo not accept this *reasonable* perspective? Why did he insist on recognizing only the Copernican system? Why did he not add a lengthy chapter to his 1632 *Dialogue* to clearly describe the limits of the human intellect, as Urban VIII would have liked? Worse, considering the charges that the Inquisition could have brought against him, why did he remain so firm on his own theoretical convictions without accepting the *reasonable* compromise offered by the Pope to handle the Copernican doctrine as a mathematical hypothesis? Here, the author departs from all standard accounts and adopts a very novel approach to these questions. His answer concerns Galileo's ability (or inability) to behave *reasonably*, and his approach is new because it is based on the reconstruction of Galileo's psychological profile. Galileo was: 1) a person who tended to create his own world without perceiving what was really going on around him (p. 19), 2) an introvert because of the expansive and invasive character of his mother (p. 95), 3) subject to psychosomatic and hysterical illnesses (p. 145–6), 4) subject to surges of anger (p. 163), 5) the victim of a conflictual childhood (p. 234) described in the following way: ‘the paternal conflict between experience and reason and the maternal conflict between power and impotence’ (p. 255).

Galileo remained an indomitable Copernican, not because he was convinced about issues and aspects related to his scientific research or to its results. He did so because of his mother and father who caused such an alteration of mind that he was not able to receive and interpret the friendly messages coming from Rome and, at the same time, was even looking for pretexts to attack Christianity (p. 48). Following modern habits, the author also offers further psychological profiles of people close to the patient: parents, relatives and friends.

The argument makes use of a great deal of historical evidence and the author instrumentally ranges over a wide variety of subjects, treated in the frame of four main sections, to achieve his goal.

The first section – ‘The mind's eye’ – focuses especially on Galileo's youth and on the time of his first academic position, between 1589 and 1592, at the University in Pisa as a lecturer for mathematics. The author chose not to follow a chronological order, but rather a thematic one. Sudden flashbacks to Galileo's Paduan years (1592–1610) are not infrequent.

The second section, with the same title as the book, concentrates on Galileo’s Paduan stay and on the first years after his move back to Florence. This long section is fundamentally devoted to Galileo turning increasingly to astronomic investigations and touches all classical related subjects like the appearance of the nova in 1604, the telescopic observations and the publication of *Sidereus nuncius* in 1610. Here, the author seems to feel the need to justify the attention he gives to the important episodes of early modern astronomy associated with Galileo. With an original approach, however, he does not justify it by remarking on their relevance, but by mentioning, at the beginning, the fact that a recent scholarly paper (of which the author of the present review is co-author) has been published, whose aim was to investigate the origins of Galileo's *Two New Sciences*. Wootton implicitly suggests that because this paper does not deal with the history of astronomy, it seeks to convey that Galileo therefore played no role in this. This seems to be the reason why Wootton chooses to deal with this subject at length.

The third section – ‘The eagle and the arrow’ – covers the time from 1616, a time when it was forbidden by the Roman Church to treat Copernicus' doctrine as a physical theory, and also the time of the publication of Galileo's *Dialogue* in 1632. The plot of this most fundamental section, as is the next and last section, is based on the 1616 sources concerning the condemnation of Copernicanism as a physical theory and Galileo's trip to Rome, where he negotiated the boundaries within which he could continue to investigate in the frame of the Copernican doctrine. As all Galileo's scholars are aware, it is still an open question whether one of the textual sources concerned with the 1616 events is genuine or whether it is a text produced in 1633, during Galileo's trial, in order to create legal justification for Galileo's final condemnation. This debate is touched (but only touched) upon in this book and then quickly dismissed by mentioning one single paper dealing with the question and stating that historians have reached an almost unanimous opinion in favor of the (1616) authenticity of that textual source (p. 162). The unproven 1616 injunction against Galileo becomes then, in Wootton's argument, an indubitable historical fact (p. 169) and, one page later, even Galileo's 1616

‘condemnation’.

The fourth section – ‘Prisoner to the inquisition’ – exposes the major events of Galileo's life, from the trial in 1633 to the end of his life. It is in this section that the real aim of the author becomes evident; it is here that Galileo's lack of faith in the Catholic God is stated, so that in the *coda* the author is allowed to conclude that Galileo was ‘disloyal and ungrateful’ (p. 266). Galileo's lack of faith is systematically demonstrated by means of sources and inferences. First, Galileo apparently liked a book by Giovanni Nardi published in 1641. The book – *De igne subterraneo physica prolusio* – is a mental exploration of the subterranean world, which, Wootton says, represented an alternative to Dante's vision of the underworld, evidently influenced by religious issues.

The second inference concerns Clemente Settimi, who took care of the aging Galileo between 1639 and 164, and some other members of the same religious order as Settimi. Settimi was called before the Inquisition because he was suspected of having read Galileo's *Dialogue* and of believing that the universe had no creator. He was cleared but subsequently sent to Sicily. But the accuser, Mario Sozzi, another member of the same order, who at the end of the story was given the position of general of the order, denounced Settimi and his companions again for teaching Galileo's science to their best pupils. Wootton develops this argument at length, starting from a 1615 letter of Galileo and ending in 1691. The overall message is that Galileo was at least morally responsible for the teaching not only of his scientific results, but also for imparting principles of an unchristian worldview. The same author, however, admits that these are all just conjectures and that their power in his argument is limited, at least in comparison with the last of the textual evidence he analyzes. This is a letter by Galileo's pupil Benedetto Castelli written in 1639, from which the reader can evince, according to Wootton, that Galileo had finally converted to the Roman faith, *ergo*, that before this date he was an unbeliever. This letter might appear as persuading evidence to support Wootton's perspective. However, in the context of the entire correspondence of Galileo, its content and the expressions it contains might also sound like an ordinary series of positive statements within which religious aspects are simply routinely quoted. After having reread the letter, I personally tend toward the second option. However, even following Wootton's reading, the question remains open as to why Galileo bothered to search for an alternative to Dante's vision of the underworld and, especially, why he should have promoted unchristian principles in 1641, that is, two years after his supposed redemption.

That this book is not an all-encompassing intellectual biography becomes particularly evident while analyzing the way the author involves Galileo's research, efforts and results on mechanics in his arguments. If the reader wishes to understand Galileo's lifelong research towards the foundation of a new dynamics, this is not the appropriate book. Wootton does not disregard any of the classical *topoi* concerning Galileo's work on mechanics, considered here in the widest possible sense: his studying Euclid and Archimedes, his early studies on dynamics while lecturing on mathematics in Pisa, his technological turn during the Paduan years and, finally, the Two New Sciences. However, these aspects are treated cursorily, often leaving the impression that they do not really contribute to the argument.

Galileo's *Discorsi* published in 1638, for example, is dealt with in five pages. Galileo's Two New Sciences are presented fully de-contextualized. Wootton does not recognize that behind Galileo's science of materials there was the urgent and real need to avoid the frequent collapsing of buildings and wooden machines, which were built following a schema of linear-proportional and scalar building from model to real size. He does not recognize either that behind Galileo’s theory there were other theoretical approaches formulated by commentators on Aristotle's *Mechanical Questions*. Concerning Galileo's dynamics, Wootton fails to stress the importance of the debate concerning the study of the trajectory of projectiles which framed the research of Galileo and of many other scholars and which was basically rooted in the experience accumulated by artillerists on the early modern battlefields. Instead, Wootton limits himself to the statement that Galileo's ‘preoccupation with resistance’ came from the ‘conflicts of his childhood’ (p. 234).

By basing the argument on the reconstruction of psychological profiles, the overall narrative of the book often follows the rules of a modern crime novel, in places even suggesting the feeling of a conspiracy. The author often seeks to build a sort of conspiratorial relationship with the reader. The latter, whether she/he

likes it or not, is simply placed on the high-backed chair of the Inquisitor. As it might have been at Galileo's time, the reader-inquisitor does not actively search for suspects of heresy. The inquisitor sits and waits for evidence to be submitted by people willing to denounce other people, like friends, members of the same order, colleagues, superiors, often with the objective to eliminate in this way possible competitors, as might have been the case with Mario Sozzi. The reader waits and Wootton submits.

Denouncers are never unconcerned and never really furnish evidence in a neutral way. They filter the pieces of information and what is submitted is always provided with an interpretative layer. Recurring on his reconstruction of psychological profiles, the author seems willing to show that he has almost spoken to the historical protagonists, that he has shown that they (Galileo) had alternatives and, therefore, that they cannot be excused, pardoned, cleared.

Wootton discloses also his own psychological profile when he endorses an explanation of the reasons for Galileo's trial and defeat furnished by Orazio Grassi, a Jesuit with whom Galileo undertook a long scientific dispute about the nature of the comets. Grassi reputedly held Galileo to be the cause of his own misfortune because, in Wootton's words, ‘he had fallen in love with his own arguments and had paid no attention to the views of others’ (p. 225). In other terms, Galileo would have been better off had he made proficient use of the well-known techniques of simulation and dissimulation. This is the working context of inquisitors. Do we really want to join them?

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