

# Leben des Galilei

*B. Brecht*

March 23–25, 2017

The play was written in the end of the 30's, and revived and revised after the war when the issue of science, especially physical science was very topical. The play itself is very didactic in conception. Brecht has obviously done his homework and have tried to understand matters and be fairly accurate as to actual history, although of course being a playwright gives you a lot of license not to say an obligation to make things up. I once actually saw a performance, it was in the late 70's, probably in 1979, when it was set up at Columbia, in which must have been a student production. One thing I recall vividly and it was one Cardinal who made elaborate and complicated movements with his hand, asking Galileo what about if God in his wisdom had decided that this was the way for the planets to move, to which Galileo responded, that in that case God would also have designed our brains to make this the simplest of movements.

We are set in Venice in 1610 when Galileo as just designed a telescope inspired by rumors that such a thing was possible and had been invented in Holland, and uses it first as a ruse to get himself a big rise, and then latter to direct it at the Moon and Jupiter, making his momentous discoveries. Now what is momentous about them? Galileo had of course been brought up with the Ptolemaic system, although he was born twenty odd years after the death of Copernicus, but he had quickly realized that the Copernican system had many advantages. But how to prove it? Something that Brecht considers possible, but what about Galileo's own ideas upon that? Galileo was a far more subtle thinker than Brecht, so you do not expect his views to be done justice to through the pen of the German. That the Moon shone with the reflected light of the Moon was known to the Greek, at least the educated elite. That the Moon was a stone in the sky with mountains and valleys, and as such very much like the Earth, may or may not have been appreciated, it certainly was not by those like Aristotle who held that only the sublunar world was imperfect, and as such it was a definite blow against the views held by Aristotle, who was considered by the Church as the scientific authority. It is rather remarkable the prestige with which the Pagan was endowed by the Church authorities, not only as to science but also as to theology. More serious though was the moons circling around Jupiter, which showed that other bodies but the Earth was encircled, which undercut the proposition that nothing could orbit the Sun or anything else as they were attached to spheres<sup>1</sup>. A very interesting point is when the distance to the Sun was determined, at least accurate enough to prove that it was much bigger than the Earth. That by itself would have been a powerful evidence for the Copernican world. In fact that the distance must be rather great must have been appreciated already at the time of Copernicus, because then the lack of parallax would show that the stellar sphere must be truly far away, which was considered

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<sup>1</sup> This may be a too literal interpretation by Brecht, the spheres and epi-cycles of Ptolemy were clearly mathematical conveniences, endowed with no ontology

unimaginable. However, the most damning was the phases of Venus, which more than anything else showed that Venus orbited the Sun. Now of course the suggestion by Tycho Brahe, that the Sun orbited the Earth but was orbited by the other planets was more or less unfalsifiable and pertains to the philosophical questions of canonical reference points, which would plague Newton later.

Now a later scene in the play shows Galileo in Rome where he in vain tries to make a philosopher and a mathematician look through the telescope, the idea being that what you see with your own eyes, you cannot doubt. This ties in with the view of Francis Bacon who claimed that truth is manifest and lies right before you, provided you shed the blinkers of prejudice and set views. Of course Bacon also believed that the sky rotated around the earth because that was obvious by observation. As noted Galileo had a subtle idea of science, certainly more informed than that of Brecht, and most likely superior to that of Bacon. Bacon's works were not published until 1620 when Galileo was quite advanced. Some of the arguments that Galileo puts forth are reminiscent of Popperian falsification. Sarcastically he observes that they are expected to try to prove the Pythagorean system until the task proves to be pointless, an attitude often taken by people who want to ridicule the view of falsification. How much is Galileo, how much is Brecht? The mathematician and the philosopher refuse to look through the contraption, how could they be assured that what they see is what there is, and not that the view has been deformed. A valid objection, which, however, should serve as an invitation to investigate, say by directing the telescope to objects which can be inspected independently, and not as a license to cling to former views. At the meeting at Rome he finds reassurance that some cardinals, especially Barberini, are on his side showing an appreciation of science and heralding the new world. Anyway he returns from Rome having come to an agreement to keep a low profile and does so for many years. When the old pope is dying and Barberini is about to take office, he is shown to take heart and publish his ideas in the vernacular to make them accessible to people at large. But this turns out to be a mistake. He is summoned to Rome, he cannot escape, and whence he is shown the implements of torture which makes up his mind. To the great disappointments of his disciples he decides to recant. The disappointment is profound and is seen as a betrayal by his faithful disciples. The interchange from Brecht's play between his young disciple and son of his housekeeper - Andrea Sarti has become well-known. Sarti exclaims *Unglücklich das Land das keine Helden hat* to which Galileo is later made to respond *Nein. Unglücklich das Land das Helden nötig hat*. Galileo is then sent into house arrest and more or less ignored, until Sarti many years later drops in to inquire. The situation is very tense, but Galileo may mollify the anger and distaste felt by the visitors by offering him a manuscript to smuggle out to Holland to be published there.

So why was Galileo made to recant by the Church? This is something which has never been satisfactorily explained. One obvious answer is that Galileo challenged the authority of the Church, which had already been seriously challenged by the Reformation. Thus a purely political reason, because the cardinals, such as Barberini were no fools, and may very well have been privately in sympathy. The greater issue is not whether the Copernican system was false, but that it was dangerous to the stability and hence the future of society. Too much knowledge is a dangerous thing, as illustrated by the

Atomic Bomb. What responsibility does the scientist have towards society, should he be allowed to follow his curiosity and inclination regardless of the unintended consequences, or should he always be primarily concerned with the welfare of people of the society. The complication is of course that it is impossible to know beforehand what consequences advances may eventually bring. Has the scientific revolution made people happier or has it had consequences that will destroy us all? In the beginning of the play Galileo extols the virtues of the freedom of research, at the end as an old and broken man, a complicit in his own humiliation, his views appears changed.

The recanting of Galileo had consequences, Descartes decided not to publish his radical views, but those stops were of rather short duration, what had been set in motion could not be indefinitely stopped, and there were countries such as England and Holland, and to some extent France itself, where the Catholic church did not hold sway. And Galileo eventually, in spite of his timidity as to the suffering of the flesh, did become a hero after all in the eyes of posterity.

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