

# Conclusion

*Believe there are no limits, but the sky*

Miguel de Cervantes, 1606

The ways of the Lord are infinite. Those of science are infinite too. At least, this is true of seventeenth century science. Athanasius Kircher tries in every way to demonstrate that Physics can be found in the Holy Writ, and that Science is a large Noah's Ark, a collection of fossiles, a Museum, a system of fine watches. Kircher is devout to our Lord who gave him a whole Universe to be observed and catalogued, and provided him with the keywords to understand it. If we read his books, we may suspect that, though worshipping the Creator, Kircher is actually in love with the Creation, which—from the very first moment—had been paving the way to the Christian revelation. Kircher offers a view of Creation, which may overcome the fragmentary view of the new Mechanic philosophy, which is spreading in the whole of Europe.

Doubtless, Kircher's researches attract us for his capacity of wonder, a capacity which modern science seems to have lost. However, a true scientist should follow a different method. He does not fall in love with phenomena—rather, he observes them. He does not look for explanations in the Holy Writ—rather, he searches them through the inner logic of phenomena.

Nowadays, even scientists endowed with faith follow a shared research method, which is made of logical rigour, experimentation, and public check of their results.

Between Kircher's method and the modern scientific method we can place Galileo, a Christian scientist who was convinced that, in order to interpret the world, you do not need to trouble Our Lord. If Galileo and Kircher had ever imagined to survive to themselves, avoiding condemnation, criticism and abjuration, they would have continued to look around, observe and reflect on the Universe, with science and conscience, but also with faith, doubt, irony, as well as with marvel and creativity.

Galileo has deliberately ignored Kircher, and Kircher himself has hardly quoted Galileo, as if, conscious of not being able to agree, they did not want to admit that they were perhaps complementary.

Was Galileo right? Of course he was, in the sense that the method he proposed can forecast events, and therefore can help increase our knowledge of the world.

However, there were no proofs of the Earth's rotation. The Jesuits were not obscurantist. Clavius, Grassi and Scheiner did not play a role as enemies of modern science, but rather as scholars proposing different explanations of the phenomena you observe, a role foreseen by modern science. This role was actually indispensable along the complicated path of knowledge. The Jesuits' Collegio Romano was a place where the cultural heritage was preserved, where Galileo had found attentive colleagues and harsh critics who, sometimes restrained by their faith, reached more advanced conclusions than Galileo himself.

Was Kircher right? Obviously not, in the sense that the method he suggests consists in convincing his audience of things he or someone else already knows. This method does not contribute to an effective advancement of knowledge. However, it is not a fruitless method, since it produces, in collaboration with Gian Lorenzo Bernini, at least two masterpieces of the Baroque style in Rome.

We are impressed by Kircher's tireless activity as a collectionist, researcher and writer, aiming at organizing into a system all the ideas circulating at the time. In order to succeed in this effort, it is inevitable to get to know all these ideas. However, Kircher happens to live in a period when there are more and more things to discover and study. In a sense, Kircher becomes "The last man who knew everything", as Paula Findlen defined him.

Kircher is encouraged by the spirit of Ignatius of Loyola, who obsessively suggests to him to show—with shapes and pictures—what the Fathers of the Church wrote. Therefore Kircher is always anxious to demonstrate everything, and considers any object as a holder of hidden truths.

This attitude, so clearly faithful to the letter of the Holy Writ, since it is an expression of Counter-Reform, paves the path to knowledge, to a research which is so free, that it looks like eccentricity. However, it sometimes happens that scientists looking for one thing actually find something else, since the Universe is complicated—just like the human mind.

It is therefore not surprising that, though starting from wrong premises, and following fanciful paths, Kircher sometimes gets to an astonishing truth. In fact, "truth" is not the right definition: however, his conclusions can be true enough to make his name admired, and even worshipped, by students like Petrucci and Kestler, who dedicate to him the frontispieces of their books.

If only he had discovered the manuscript of the Anonymus by Manzoni, he would have certainly wondered whether the character of Don Ferrante might also be his own portrait, drawn with a touch of irony: *"...he knew how to entertain a conversation by reasoning of admirable virtues and peculiar curiosities; by describing exactly the shapes and habits of the mermaid and the phoenix; by explaining how the salamander stays in the fire without burning; how the remora, a small fish, has the strength and the skill to stop any large ship at sea; how dewdrops may become pearls inside a shell; how the chameleon eats air; how crystal derives from ice which has slowly hardened with the passing of centuries; and about other marvellous secrets of Nature."*

Athanasius Kircher dies in 1680. In his will, he asks that his heart be buried inside the Sanctuary of Mentorella, in a casket at the foot of the statue of the Virgin. On the casket, we can read the following sentence: *“Athanasius Kircher, Jesuit, who restored this temple and established the holy pilgrimage which is celebrated here each year. He wanted his heart to be buried at the foot of the altar of Our Lady”*. He does not see the publication of Newton’s book, in which he exposes the solid theory supporting Copernicus’ Cosmology, but those crystal skies, which have made the cosmos rotate for almost two thousand years, have been definitely shattered, and the sky in which, according to Kircher, *“terrestrial things are placed in a celestial way, while celestial things are placed on the Earth in a terrestrial way”* has become an object of study, and is no longer considered as a sort of receptacle for all the petty vicissitudes of human life.

# Appendix

## Galileo Galilei and Athanasius Kircher: A Parallel Chronology

- 1517 Scism of Luther.
- 1543 Copernicus publishes *De revolutionibus*.
- 1545 The Council of Trent starts. Catholic Reformation.
- 1564 Galileo Galilei is born (Pisa, 15 February).
- 1587 Galileo goes to Rome to meet Christoph Clavius.
- 1589 Galileo is appointed lecturer at the University of Pisa.
- 1592 Galileo is appointed professor at the University of Padova.
- 1596 Kepler publishes *Mysterium Cosmographicum*.
- 1600 Giordano Bruno is burnt on the stake in Rome. Virginia is born to Galileo.
- 1600 William Gilbert publishes *De Magnete, Magneticisque Corporibus...*
- 1602 Athanasius Kircher is born (Geisa, 2 May).
- 1603 Federico Cesi establishes the *Accademia dei Lincei* in Rome.
- 1609 Galileo improves the spyglass of Hans Lippershey, and starts observing the sky.
- 1610 Galileo discovers Jupiter's satellites and publishes *Sidereus Nuncius*.
- 1611 The Jesuits at the *Collegio Romano* confirm many observations by Galileo
- 1611 Contemporary discovery of sunspots on the part of Galileo, Scheiner Harriot, and Fabricius.
- 1612 Galileo writes *Discourse on Bodies on or in Water*. Niccolò Lorini preaches against Copernicus' theory.
- 1614 Tommaso Caccini attacks Galileo from the pulpit of S. Maria Novella.
- 1615 Galileo is denounced to the Holy Office by Lorini.
- 1616 Galileo publishes *Discourse on the Flux and Reflux of the Sea*.
- 1616 The Holy Office condemns Copernicus' theories.
- 1617 Kircher is saved miraculously by the Virgin, who heals the gangrene in his feet and an abdominal hernia (this episode is quoted in his autobiography).
- 1618 Kircher enters as a novice The Jesuit College of Paderbon.
- 1618 Three comets appear and provoke an argument between Galileo and Orazio Grassi.
- 1622 Kircher flies to Köln, followed by Lutheran soldiers. He falls into the frozen Rhine, but is saved miraculously (this episode is quoted in his autobiography).

- 1623 Maffeo Barberini is appointed Pope with the name Urban VIII. Galileo dedicates *Il Saggiatore* to him.
- 1623 Kircher is prisoner of the Lutherans, and is saved by divine intercession (this episode is quoted in his autobiography).
- 1628 Kircher teaches Philosophy, Mathematics, Hebrew and Syrian in Wurzburg.
- 1629 Bubonic plague in Florence.
- 1631 Kircher flies to Avignon because of the Thirty Years' War. He helps Nicolas Claude Fabri de Peiresc decipher the ancient Egyptian papyri.
- 1632 Galileo publishes *Dialogue concerning the two chief World Systems*.
- 1633 Galileo is brought to trial for heresy. He is sentenced to life imprisonment, later commuted to house arrest. The *Dialogue concerning the two chief World Systems* is put on the Index.
- 1633 Kircher is in Rome, where he teaches Mathematics, Physics and Eastern languages at the Collegio Romano.
- 1634 Death of Galileo's daughter, Sister Maria Celeste.
- 1636 Kircher publishes *Prodromus Coptus*.
- 1638 Galileo publishes *Discourses and Mathematical Demonstrations relating to two New Sciences*.
- 1641 Kircher publishes *Magnes, sive de Arte Magnetica libri tres*.
- 1642 Galileo dies (Arcetri, 8 January).
- 1646 Kircher publishes *Ars Magna Luci et Umbrae*.
- 1650 Kircher publishes *Musurgia Universalis*.
- 1651 Kircher creates the Museum of the Collegio Romano.
- 1652 Kircher publishes *Oedipus Aegyptiacus*.
- 1665 Kircher publishes *Mundus Subterraneus*.
- 1668 Queen Christina of Sweden converts to Catholicism and moves to Rome.
- 1669 Kircher publishes *Ars Magna Sciendi*.
- 1675 Kircher publishes *Arca Noë in tres libros digesta*.
- 1680 Kircher dies (Rome, 27 November). His heart is entombed in the chapel of the Virgin Mary in the Sanctuary of Mentorella.