

# Handout 2: Scholasticism vs. Mechanism

Philosophy 322: Modern Philosophy

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Spring 2016

“I may tell you, between ourselves, that these six Meditations contain all the foundations of my Physics. But please do not tell people, for that might make it harder for supporters of Aristotle to approve them. I hope that readers will gradually get used to my principles, and recognize their truth, before they notice that they destroy the principles of Aristotle.”

Descartes, *Letter to Mersenne*, Jan. 28, 1641

## THE SECRET PURPOSE OF THE *MEDITATIONS*

1. In 1633, Galileo Gallilei's *A Dialogue Concerning the Two World Systems* was condemned by Roman Inquisition:
  - (a) Galileo's *Dialogue* gave observational evidence for *heliocentrism* (the view that the earth orbits the sun).
  - (b) Inquisition held: *geocentrism* (the view that the sun orbits the earth) is supported by scripture, so no observational evidence can establish heliocentrism
2. Descartes spend his early thirties (approximately 1629-1633) working on *Le Monde* ("The World"), a long work developing a new *physics* (i.e., a general theory of bodies and motion).
3. Heliocentrism was central to the physics of *Le Monde*. It was defended by theoretical arguments, and in turn was essential to Descartes's accounts of planetary motion and light. To avoid suffering the same fate as Galileo, he suppressed its publication.
4. Descartes's "secret purpose" revealed in his letter to Mersenne quoted above: to provide a philosophical foundation for his new physics. Descartes's physics is not discussed in the *Meditations*, which are explicitly aimed at proving (i) that God exists, and (ii) that the soul is immortal
5. Broader context: until 1500s, European science was dominated by *scholastic* or *Aristotelian* physics. This was the approach to natural science sanctioned by the Catholic church. The general framework was essentially that developed by Aristotle, who lived in the fourth century BCE.
6. During the 1500s and 1600s in Europe, scholastic physics was challenged by a different framework now known as *mechanism*. Descartes's physics was mechanistic, not scholastic. Hence his reference to "destroy[ing] the the principles of Aristotle".

1. *What are bodies?*

SCHOLASTICISM: MATTER + FORM

Bodies consist of matter organized by *substantial form* — roughly, an idea that organizes the matter into a coherent whole.

MECHANISM: MATTER ALONE

Bodies consist of matter alone. The properties of bodies are determined by how the matter that composes the bodies is arranged.

2. *What explains motion?*

SCHOLASTICISM: GOALS

Substantial forms of bodies include natural goals. Understanding motion requires knowing about a body's natural goals: "*x* did *A* in order to..." is a fundamental form of explanation.

MECHANISM: MECHANICS

Bodies are machines that operate according to general laws. Understanding motion requires only knowledge of the material composition of objects + natural laws.

3. *How general are the principles that govern motion?*

SCHOLASTICISM: NOT COMPLETELY GENERAL

Different principles govern different types of bodies. E.g. bodies made of earth move according to different principles than bodies made of water; heavenly bodies move according to different principles than terrestrial bodies

MECHANISM: PERFECTLY GENERAL

All types of bodies "play by the same rules"; i.e., all bodies conform to the same principles. Earthly bodies and heavenly bodies move in accordance with the same laws.

4. *Is physics purely quantitative?*

SCHOLASTICISM: NO

Fundamental physical explanations involve sensible, "qualitative" properties like *hot/cold*, *wet/dry*, etc. As a result, physics involves more than purely quantitative properties like shape, size, mass.

MECHANISM: YES

Fundamental physical explanations involve only purely quantitative properties like shape, size, mass. As a result, physics can be understood purely mathematically.