

The Importance of Method in the Scientific Revolution

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Methodology

Aristotle did not provide **methods** for

- ① *Finding which known* phenomena and endoxa can be used in an explanation.
- ② Making *new observations* (i.e., enlarging the set of phenomena).
- ③ Testing hypotheses/explanations.
- ④ Devising
 - ① New hypotheses and
 - ② New concepts
 - Analogous to selecting variables for a regression in statistics.

Goal: Finding such method(s) was a central concern of modern philosophers, especially Bacon and Descartes.

Bacon vs. Descartes: Similarities

Both Bacon and Descartes provide methods for

- Discovery,
- Justification, and
- Avoiding error.
 - In particular, testimony/authority are not to be trusted.

Bacon vs. Descartes: Differences

Bacon and Descartes differ in important ways.

- Bacon focuses on developing instructions for
 - Organizing experimental findings, and
 - Finding concepts (and hypotheses)
- Descartes, in contrast,
 - Is skeptical of experience
 - Employs *doubt* as a central philosophical tool, and
 - Emphasizes the role of mathematics in science.

These latter differences are often part of what differentiates so-called “empiricists” from “rationalists”