

## Philosophy in the Wake of Science

### A New Way of Thinking

## Introduction

- A new way of thinking, called the scientific method, slowly developed and was practiced during the Early Modern Era.
- As early as the 15th century, Leonardo da Vinci wrote: "Those sciences are vain and full of errors which are not born of experiment, the mother of certainty."

## Francis Bacon: Empirical Method



- The English philosopher, Sir Francis Bacon (1561-1626) urged that all scientists:
  - ◆ Experiment
  - ◆ Carefully observe
  - ◆ Write down what happened in an experiment

## Human Progress

- Information gathered this way would lead to explanations that could be tested by:
  - ◆ Repeating the experiments
  - ◆ Devising new ones
- Human progress might come from the knowledge gained this way.

## Rene Descartes: Rational Deduction



- The French mathematician René Descartes (1561-1626) realized that people could be deceived by their senses. To find solid truth, he decided to apply the principle of doubt.

## Descartes' Method

- His method went like this:
  - ◆ First one doubts (refuses to accept any authority without strict verification)
  - ◆ Then one finds the truth based on logical thinking and experiment

## I Think, Therefore I Am

- He began with the assumption that he could know only one thing: that he was doubting. This allowed him to proceed to the observation: "I think, therefore I am." The progression went like this:
  - ◆ "I doubt, therefore I think."
  - ◆ "I think, therefore I exist."

## Blaise Pascal: Reason And Faith

- The French mathematician and physical scientist Blaise Pascal (1623-1662) believed that in matters of religion, only the reasons of the heart and a "leap of faith" could prevail.



## Pascal's Famous Wager

- He believed that the skeptics of his age overly estimated reason and made a famous wager with them:
  - ◆ It is a better bet, he argued, to believe that God exists than not to do so.
  - ◆ If God does exist, everything will be gained.
  - ◆ If He does not exist, nothing will be lost.

## Sources

- Bacon: <http://www.batesville.k12.in.us/physics/PhyNet/AboutScience/Inductive.html>
- Descartes: <http://www.ci.nyc.ny.us/html/umbrella.html/message.html>
- Pascal: <http://www.mathe.tu-freiberg.de/~hebisch/cafepascal.html>