



## The Scientific Revolution with Dr. Ted Davis

### Lesson 1: The Scientific Revolution: The Big Picture

#### Outline:

What do we mean by the “Scientific Revolution”?

- This is the period when modern science began to take shape. Historians today often speak of “early modern science,” followed by “modern science,” because further important changes took place later – especially the professionalization of science in the 19<sup>th</sup> century.
- The term “Scientific Revolution” became popular right after World War II (The Cold War).
- The Scientific Revolution in its classic form is a concept that argues that modern science emerged from medieval superstition including Christian beliefs. The rise of modern science was seen as an episode of profound secularization. **The event known as Scientific Revolution took place in Christian Europe.**

A History of the Warfare of Science with Theology in Christendom (Andrew D. White), was published by the first president of Cornell University. This text purported that there was a conflict between science and specifically with Christian theology (more than with Christianity as a religion or way of life).

- In his view Christian beliefs could only hold back progress in science.
- White’s view of this was very popular.

George Sarton founded the History of Science Society (Isis)

- “The interactions between science and religion have often had an aggressive character.”
- “There has been most of the time a real warfare. But as a matter of fact it is not a warfare between science and religion – there can be no warfare between them – but between science and theology.”

The Scientific Revolution

- Where did it happen?
  - This is really taking place in some of the nations of Europe.
    - England
    - German Empire
    - Poland
    - Italy – Venice, Rome, Florence
    - France
    - Netherlands



- It doesn't take place in other places: North America, Asia, Africa, Old Russian, or South America.
- When did it happen?
  - Roughly two centuries: 1500 – 1700
  - **1543 was a special year:**
    - Andreas Vesalius, *De fabrica corporis humana* (He published a revolutionary work on the human body.)
    - Nicolas Copernicus, *De revolutionibus orbium coelestium* (He published his book on the solar system.)
    - Niccolò Tartaglia publishes “the first fairly complete Latin text” of the works of the Greek mathematician Archimedes (Marie Boas Hall, *The Scientific Renaissance*, p. 212)
- What took place?
  - A new world picture – the Solar System
  - A new world view – the mechanical philosophy, the notion that nature is a machine
  - New sources of knowledge and new methods – new instruments, wider use of laboratory experiments and mathematical analysis
  - New views of knowledge – progress, utility, and praising God
  - New interactions between science and religion

## Science and Scientist (Two Important Word)

- **Science** is the older of these two words; it derives ultimately from the Latin verb *scire* = to know
- The Latin participle *sciens* = knowing
- The older meaning of science = knowledge
- Used in English since Chaucer's time (14<sup>th</sup> century)
- Its narrower use to mean “natural science” has been common only since the 19<sup>th</sup> century.
- **Scientist** was first used in print in 1834, in a review written by William Whewell of Mary Somerville's book, *The Connexion of the Physical Sciences*. He had apparently suggested the word verbally at a scientific conference a year or two earlier.
- Until perhaps the mid-20<sup>th</sup> century, however, it was common in America to speak of a “man of science” rather than a “scientist,” even though some scientists were women. The AAAS (American Association for the Advancement of Science) changed the name of its reference to American Men and Women of Science only in the 1970s.
- They often thought of themselves as philosophers, or natural philosophers.