Philosophy 61 Fall 2005

Philosophy and the Scientific Revolution

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The scientific revolution of the sixteenth and seventeenth centuries resulted in a profound shift in Western thought and marked the transition from the world-view of the Christian middle ages to that of what is now known as modern thought. In particular, the earth was finally moved from its position at the center of the universe, and the cosmos was now understood in terms of mathematically described matter in motion rather than through final causes and Divine or human purposes. This scientific revolution was in turn closely associated with an equally profound philosophical transformation that saw the birth of what is now known as modern philosophy. In particular, the Aristotelian-Scholastic philosophy characteristic of the Medieval period was replaced by a new epistemology or theory of knowledge originating with Descartes. This course will focus on the parallel development of, and interaction between, these two great conceptual revolutions.

Reading and Class Schedule

Thomas Kuhn, *The Copernican Revolution*
S. Drake, ed., *Discoveries and Opinions of Galileo*
Galileo, *Dialogue Concerning the Two Chief World Systems* (ed. Drake)
E. Anscombe & P. Geach, ed., *Descartes Philosophical Writings*
Richard Westfall, *The Construction of Modern Science*

Sept. 27: Introduction: The Copernican Revolution and Modern Philosophy
Westfall: Chapter I
Drake: pp. 1-20
Dialogue: Translator's Preface (by S. Drake)
Anscombe & Geach: Introduction (by A. Koyré)

Sept. 29: The Two Sphere Universe and the Problem of the Planets
Kuhn: Chapters 1 and 2

Oct. 4: Aristotelian Natural Philosophy and Geocentric Astronomy
Kuhn: Chapter 3

Oct. 6: No Class

Oct. 11: The Problem of Projectiles and Impetus Theory
Kuhn: Chapter 4

Oct. 13: The Copernican Revolution and the Attack on Aristotelianism
Kuhn: Chapter 5
Drake: pp. 21-85
Dialogue: First Day

Oct. 18: A New Science of Motion **[FIRST PAPER DUE]**
Dialogue: Second Day
"Galileo's Mathematical Science of Motion" (handout)

Oct. 20: Experimental Method and the New Science
Drake: pp. 222-80
Kuhn: Chapter 6

Oct. 25: Scientific Method and Copernican Astronomy
Drake: pp. 89-144
Dialogue: Third Day
Kuhn: Chapter 7
Westfall: Chapters VII, VIII

Oct. 27: Galileo and the Church
Drake: pp. 143-220

Nov. 1: Cartesian Science and The Mechanical Philosophy
Westfall: Chapters II – V
Anscombe & Geach: pp. 199-256

Nov. 3: Geometry and Cartesian Method **[SECOND PAPER DUE]**
Anscombe & Geach: pp. 153-89

Nov. 8: Descartes and the Condemnation of Galileo
Anscombe & Geach: pp. 7-57

Nov. 10: The Project of the Meditations
Anscombe & Geach: pp. 59-65

Nov. 15: The Soul and the Pure Intellect
Anscombe & Geach: pp. 66-75, 183-4

Nov. 17: The Soul and God
Anscombe & Geach: pp. 76-91, 184-7

Nov. 29: God, the Soul, and the Essence of Matter
Anscombe & Geach: pp. 101-8

Dec. 1: God, the Soul, and the Existence of Matter
Anscombe & Geach: pp. 109-16, 79-80

Dec. 6: Error, the Senses, and the Progress of Science
Anscombe & Geach: pp. 92-100, 117-24, 187-98

Dec. 8: Conclusion: Descartes, Galileo, and Scientific Method

Dec. 12: [THIRD PAPER DUE]

Written Work: The written work for the course will consist of three short papers (3-5 double-spaced typewritten pages; 1650 word maximum). The first is due at the beginning of class on Oct. 18, the second at the beginning of class on Nov. 3, and the third by 5 pm on Dec. 12. The papers will concern Aristotelian-Scholastic natural philosophy, Galileo, and Descartes, respectively, and will focus on questions assigned in class. There will also be the *option* of writing a longer paper (approximately 10 double-spaced pages) due at the end of final exam period. (The final paper may, for example, be a revision and expansion of one of the shorter papers.) Please see me by Nov. 18 if you wish to take this option.