

# Introduction to Science Studies

## HIGR 238/PHIL 209A/SOC 255A

Autumn 2000  
Professor Naomi Oreskes

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Class hours: Tuesdays, 9-12

This seminar introduces participants to problems, methods, and resources in the science studies disciplines. It addresses the major themes that have arisen in the fields of philosophy, sociology, and history of science in the twentieth century, and provides essential background on current approaches to understanding science.

### Requirements

Each student must obtain copies of the following texts:

- Thomas Kuhn, *The structure of scientific revolutions*. (The University of Chicago Press, 3rd ed.
- S. Shapin and S.J. Schaffer, *Leviathan and the air-pump* (Princeton University Press, 1985).
- Martin J.S. Rudwick, *The great Devonian controversy* (The University of Chicago Press, 1985).
- Bruno Latour, *The pasteurization of France* (Harvard University Press, 1988).
- Nancy Cartwright, *The dappled world: A study of the boundaries of science* (Cambridge University Press, 1999)
- Course reader, URPS, to be sold in class.

Each student is expected to come to class having read the assignment for that week. For each week, one student will be assigned to lead the discussion; every one else should come to class with a one-page summary of the central points of the reading. Your summary should be just that—a summary of the author's thesis, not a critique of it. We will do that in class together.

### Grading

Grades for this course will be based on class participation (40%) and two essays (30% each).

## Schedule of assignments

### 9/26 {i} Introduction: Aims and Structure of the Course

Introductory discussion of science studies projects, topics, materials, etc.

### 10/3 {ii} The Great Tradition: History of Science

George Sarton, "The history of science and the history of civilization," in Sarton, *The history of science and the new humanism* (New Brunswick, N.J.: Transaction Books, 1988; orig. publ. 1962), pp. 3-58.

Arthur O. Lovejoy, "Introduction: The study of the history of ideas," in Lovejoy, *The great chain of being* (Cambridge, Mass.: Harvard University Press, 1936), pp. 3-23.

Alexandre Koyré, "Galileo and Plato," in Koyré, *Metaphysics and measurement: Essays in scientific revolution* (Cambridge, Mass.: Harvard University Press, 1968; essay orig. publ. 1943), pp. 16-43.

### 10/10 {iii} The Great Tradition: Philosophy of Science

Carl G. Hempel, *Philosophy of natural science* (Englewood Cliffs, N.J.: Prentice-Hall, 1966), pp. 1-46.

Hans Reichenbach, "Meaning. The three tasks of epistemology," in *Experience and prediction: An analysis of the foundations and structure of knowledge* (Chicago: University of Chicago Press, 1938), pp. 3-16.

Karl Popper, *Conjectures and refutations: The growth of scientific knowledge* (Routledge, 1963, reprinted 1989), pp. 3-65 and 215-250.

### 10/17 {iv} The Great Tradition: Sociology of Science

Robert K. Merton, "Science and the social order," in Merton, *The sociology of science*, ed. Norman W. Storer (Chicago: University of Chicago Press, 1973; essay orig. publ. 1938), pp. 254-266.

Robert K. Merton, "The normative structure of science," in *ibid.* (essay orig. publ. 1942), pp. 267-278.

Edgar Zilsel, "The sociological roots of science," *American journal of sociology*, 47 (1942): 544-62.

### 10/24 {v} The Kuhnian Revolution

Thomas S. Kuhn, *The structure of scientific revolutions*, 3rd ed. (Chicago: University of Chicago Press, 1996; orig. publ. 1962).

### 10/31 {vi} Science and Social Order

S. Shapin and S.J. Schaffer, *Leviathan and the air-pump: Hobbes, Boyle, and the experimental life*

(Princeton: Princeton University Press, 1985), read the book, but pay especial attention to pp. 22-79 and 110-54.

### 11/7 {vii} Science and Expert Communities

Martin J.S. Rudwick, *The great Devonian controversy: The shaping of scientific knowledge among gentlemanly specialists* (Chicago: The University of Chicago Press, 1985).

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**11/14 Professor out of town, no class. Take home essay assignment due 11/21.**

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### 11/21 {viii} Science and Networks of Forces

Bruno Latour, *The Pasteurization of France* (Cambridge, MA: Harvard University Press, 1988).

### 11/28 {ix} Gender and Scientific Knowledge

Emily Martin "The egg and the sperm: How science has constructed a romance based on stereotypical male-female roles," *Signs* 16:3 (1991), 485-501.

Suzanne J. Kessler, "The medical construction of gender: Case management of intersexed infants," *Signs* 16:1 (1990), 3-26.

### 12/5 {x} Philosophy without the Unity of Knowledge

Nancy Cartwright, *The dappled world: a study of the boundaries of science* (Cambridge University Press, 1999)

**Friday December 8: Final essay due to Professor Oreskes's mail box.**