

History 201O: Objectivity and Quantification in Science

Winter 2007, W 4-6:50

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This course takes as its theme the intellectual problem of comprehending what is distinctive about modern science and of trying to historicize it—or, at least, to identify its historical sources and implications. We will particularly emphasize issues involving measurement and quantification in science, though the course is not limited to these. Finally, and perhaps most crucially, we will take up these issues from the perspective of a historiographical tradition extending back to the 1930s. Our reading includes philosophical and sociological works as well as writings of professional historians. My hope is that reading and discussing these classic sources will give a sense of the excitement and promise of these traditions of scholarship as well as of their limitations.

This is principally a reading and discussion course. It is intended first of all for graduate students in history, but is open to graduate students in other fields. Each student will be asked to prepare a written review of the readings for each of two weeks. These reviews will be circulate in advance by email and will provide an initial focus for our discussions. Students should revise these reviews on the basis of our comments.

Note that we will begin in earnest in the first week. Papers and chapters will be posted online at the course website, from which they will be downloaded. Students should buy (or find library copies of) the required books.

Readings

Week 1:

Edgar Zilsel, “The Sociological Roots of Science” (1942) in Zilsel, *The Social Origins of Modern Science*, Diederick Raven and Wolfgang Krohn, eds., *Boston Studies in the Philosophy of Science*, 200 (Dordrecht: Kluwer, 2000), [7-21](#).

A. R. Hall, “The Scholar and the Craftsman in the Scientific Revolution,” in Marshall Clagett, ed., *Critical Problems in the History of Science* (Madison: University of Wisconsin Press, 1959), [3-23](#)

Alexandre Koyré, “Galileo and Plato” (1943) and “An Experiment in Measurement” (1952), in Koyré, *Metaphysics and Measurement* (Harvard Univ. Press, 1968), [16-43 and 89-117](#)

Week 2:

Ludwik Fleck, *The Genesis and Development of a Scientific Fact* (1935; University of Chicago Press, 1981)

Week 3:

Thomas Kuhn, *The Essential Tension* (Chicago: University of Chicago Press, 1979)

Week 4:

Charles Gillispie, *The Edge of Objectivity* (Princeton University Press, 1960), chapters 5, 8.

Charles Gillispie, "Lamarck and Darwin in the History of Science" in Bentley Glass, ed., *The Forerunners of Darwin* (Johns Hopkins University Press, 1959), 265-291.

Charles Gillispie, "The *Encyclopédie* and the Jacobin Philosophy of Science," in Marshall Clagett, ed., *Critical Problems in the History of Science* (Madison: University of Wisconsin Press, 1959), 255-290

Week 5:

Peter Dear, *The Intelligibility of Nature* (Chicago: University of Chicago Press, 2006)

Week 6:

Witold Kula, *Measures and Men*, trans. Simon Szreter (Princeton University Press, 1986), selections

John Heilbron, "The Measure of Enlightenment," in Töre Frängsmyr et al., eds., *The Quantifying Spirit in the Eighteenth Century* (University of California Press, 1990), 207-242.

Ken Alder, "A Revolution to Measure: The Political Economy of the Metric System in France," in M. Norton Wise, ed., *The Values of Precision* (Princeton University Press, 1995), 39-71.

Charles Gillispie, *Science and Polity in France: The Revolutionary and Napoleonic Years* (Princeton University Press, 2004), chap. 4 on the metric system, 223-284

Week 7:

Kurt Danziger, *Constructing the Subject* (University of Chicago Press, 1990)

Week 8:

Bruno Latour, *Science in Action* (Harvard University Press, 1987)

Week 9:

Theodore Porter, *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life* (Princeton University Press, 1995)

M. Norton Wise, ed., *The Values of Precision* (Princeton University Press, 1995), introductory and commentary sections by Wise.

Week 10

Andrew Warwick, *Masters of Theory* (University of Chicago Press, 2003)