

PHIL 655-02 Science, Values, and Policy
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3:45 – 6:15 PM
Adorjan 343

Course Description:

This course will examine the nature of science as objective public knowledge and the role of different kinds of values in the pursuit and content of such knowledge. We focus in particular on the role of values in three dimensions of contemporary science: the content of good science, the structure of robust scientific institutions, and the relation between science and policy. Examples will be drawn primarily from biomedical science, climate science, and physics. The specific issues we will discuss—*inter alia*, the nature of inductive risk, the distinction between epistemic and non-epistemic values, forms of objectivity and bias, expertise, and deliberative policymaking—are relevant for a number of philosophical endeavors: not only for the philosophy of science and science and technology studies (STS), but also for epistemology, social-political philosophy, and argumentation theory. Note that this course does not presuppose technical background in science.

Course Readings--Books:

- Douglas, Heather (2009) *Science, Policy, and the Value-Free Ideal* (U of Pittsburgh P)
- Longino, Helen E. (1990) *Science as Social Knowledge* (Princeton UP)
- Pielke, Roger A., Jr. (2007) *The Honest Broker* (Cambridge UP)
- Articles reserved on Blackboard; see Article List

Course Objectives:

During this course, students are expected to: (1) become familiar with relevant work in the last century on science, values, and the science-policy interface; (2) understand proposals for distinguishing epistemic and non-epistemic values; (3) understand how values are relevant for scientific practice along three dimensions of content, process, and policymaking; (4) display ability to connect theoretical discussion with actual cases in science and policymaking; (5) produce a final research paper that meets standards of professional scholarship and writing.

Course Method

The course will proceed in a seminar style, a mix of lecture and discussion based on the readings and short papers that response to focused questions about the reading. Students will make one seminar presentation in preparation for their final paper.

Assignments and Grading

Each student is responsible for (1) preparing the readings for each class and participating in class discussions (sometimes this will include preparing a one-page paper that develops a question or formulates an answer to a question given in advance); (2) one seminar presentation dealing with the prospective topic of his or her final paper, and (3) the final paper (15-25 pp.), due the week of finals. The grade reflects the professional quality and insightfulness of active class participation/short papers, presentation, and final paper (which receives the most weight).

Tentative Schedule of Topics and Readings

I Introduction and Historical Background (2 weeks)

Topics: basic concepts in scientific practice

(inductive method, falsification, uncertainty, testing)

Readings:

- Douglas, *Science, Policy, and the Value-Free Ideal*, chaps. 1-3

- Douglas, in Machamer and Wolters (2004)
- Merton (1942), Bush (1945), Polanyi (1962), Rudner (1953), Hempel (1965), Kuhn (1977), McMullin (1982)

II Direct and Indirect Roles for Non-Epistemic Values (1 week)

Topics: inductive risk, value theory, epistemic vs. non-epistemic values

Reading:

- Douglas, *Science*, chap. 5
- Steel (2010), Elliott (2011)

III Objectivity and Values in Process (4 weeks)

Topics: objectivity and knowledge; underdetermination; values in evidence & process; process idealizations; feminist philosophy of science

Reading:

- Douglas, *Science*, chap. 6
- Longino, *Science as Social Knowledge*
- Barnes (1983), Anderson (1995), Haack (1993)

IV Science for Policymaking (3 weeks)

Topics: scientific advice, expertise, bias, deliberation, communication of risk & uncertainty, precautionary principle, Mode 1 and Mode 2 science, post-normal science

Reading:

- Douglas, *Science*, chaps. 7-8
- Pielke, *Honest Broker*
- Functowicz & Ravetz (1992), Gibbons (1999), Manson (2002), Sandin et al. (2002), Sarewitz (2004)

V Case Applications

Topics: climate science, biomedicine, models, “sound” vs “junk” science, “bending science”

Readings:

- Epstein (1995), Lahsen (2008), Willholt (2009), Parker (tba)

VI Student Presentations (1-2 weeks)

Short Written Assignments

Many if not most weeks, students will be asked to submit a short written reflection on the reading for that week; these reflections provide the starting point for class discussion. There are different sorts of such assignment: (1) development of a relevant question or objection; (2) answer to a question assigned for the reading; (3) application of the reading material to a particular problem. These papers must be typed, not exceed 300 words, and formatted to fit on one page, with word count at the bottom. Late papers, and papers exceeding the 300-word limit, will not be accepted.

Student Presentations

The last part of the semester’s classes will be devoted to in-class student presentations. The presentation is intended to prepare the student to write the final paper; consequently, the presentation topic must be approved ahead of time by the instructors, and in the presentation the student should take a clear position that anticipates the argument in the final paper. Presentations must be accompanied by a typed sentence outline (normally 2-3 pp.) with bibliography, which is submitted to the instructor at the beginning of the class period.