SCIENCE AND VALUES

PHIL 560: Seminar in Philosophy of Science
Winter Quarter 2012

Instructor
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Seminar meetings
Thursdays, 3:30 - 5:20
Savery Hall 408

Office Hours
Tuesdays 2:00 - 3:30, or by appointment

COURSE DESCRIPTION

The focus of this seminar is the vexed debate about "science and values": whether a well motivated and clearly delineated distinction can be maintained between epistemic (cognitive, constitutive) norms and non-epistemic (social or contextual) values and interests, and whether this distinction can bear the weight of accounts of objectivity and related epistemic ideals that are widely assumed to define the scientific enterprise.

We take as our point of departure internal challenges to the ideal of value free science that arise form consideration of inductive risk, as developed by Rudner and Churchman in the 1950s. The responses these generated, from Jeffrey, Hempel, and McMullin for example, consolidate what became the canonical account of the distinction between the types of values that can play a legitimate role in science and the contexts in which they can figure. We then turn to later contextualist critics who insist that social interests and values are ineliminable from science on the basis of arguments from underdetermination, holism, theory ladenness, and an appreciation of the social, conventional dimensions of scientific practice (e.g., Collins, Douglas, Lacey, Longino). Although some see in such arguments the threat of a corrosive relativism that irrevocably undermines ideals of objectivity, their advocates typically make the case for a systematic (constructive) reframing of key epistemic ideals. In the final segment of the seminar we consider a growing recent literature in which contextual values are recognized to play a constructive, not just a compromising role in scientific inquiry. Readings for this section are drawn from a growing body of recent work on individual norms of epistemic integrity (Douglas, Lacey), and on social/cognitive norms of procedural objectivity (Longino, Intemann and de Melo-Martin).

The extended debate about science and values reinforces the post-positivist turn to (socially) naturalized modes of philosophical analysis, and adds an emphasis on direct (normative) engagement with scientific practice. We conclude with discussion of its meta-philosophical implications.

TEXTS

The following texts are available in the bookstore. Selections from them are listed in bold in the syllabus; all other readings are available through ERES.

- Heather Douglas, *Science, Policy, and the Value-Free Ideal* (Pittsburgh, 2009).
- Kincaid, Dupré, and Wylie (eds.) *Value-Free Science? Ideals and Illusions*. (Oxford, 2007).
- Hugh Lacey, *Values and Objectivity in Science: Transgenic Crops*. (Rowmn & Littlefield, 2005).
- Machamer and Wolters (eds.) *Science, Values, and Objectivity*. (Pittsburgh, 2004).
- Barbara Hernstein Smith, *Scandalous Knowledge: Science, Truth and the Human*. (Duke, 2005).

COURSE WEBSITE

You'll find all the course materials online at the URL below: the syllabus and summary of requirements; links to ERES readings and other sources; links to the course GoPost and CollectIt sites where you will post assignments, as well as periodic notices, updates, and links to related events.

http://faculty.washington.edu/aw26/Courses/PHIL560_SciValues_2012.shtml

COURSE REQUIREMENTS

Participants in the seminar are expected to post regular reading responses and event commentaries online, to participate actively in seminar discussion, and to make at least one formal seminar presentation in the course of the quarter. The major writing requirement for this seminar is a research paper that will take the form of a case-based analysis of the epistemic implications of role of values in science.

I. Course participation: reading responses, event commentaries, presentations

This is a reading intensive course; it is essential that you come to the seminar well prepared to discuss and debate the assigned readings. The following assignments are designed to facilitate discussion and give you credit for close, analytic reading of the course material; together they account for 50% of your final grade in the seminar.

Reading responses (20%)

In the course of the quarter you will be asked to write **four reading responses**:

- Everyone should post a response to readings for the second seminar meeting (January 12);
- Plan to post a response every second week through the rest of the quarter for three additional reading responses (a rotation will be set up in the second week of the seminar);
- Post these responses on the seminar GoPost by 5:00 pm the Wednesday evening before the seminar meeting for which the reading is assigned.

These posts should take the form of a **short analytic commentary of roughly 250 words** in which you disembed and assess a central claim or argument presented by one of the assigned authors, or a cross-cutting theme or focal disagreement engaged by several of them. Your goal should be to raise clearly articulated questions for seminar discussion.

Event commentaries (10%)

Plan to **attend at least two external lectures, workshops, or colloquia** on topics related to the themes of this course, and write a short analytic report on the proceedings, focusing on connections to our assigned readings and seminar discussions. These commentaries should take the same form as the reading responses – **short analytic discussions of roughly 250 words** – and should be posted on the seminar GoPost within a week of the event you attend. Good prospects for relevant external events include the following:

- *Biological Futures in a Globalized World:* two visiting speakers are listed in the syllabus as especially relevant, and additional panels are posted on the Biological Futures website: *http://depts.washington.edu/uwch/programs/initiatives/biological-futures*
- *Philosophy of Science reading group*: two of the three Philosophy of Science meetings this quarter will focus on readings related to Biological Futures speakers. For details, check the Science Studies Network calendar: *http://depts.washington.edu/ssnet/*
- *History of Science & SSNet Colloquium*: this weekly meeting features presentations that often focus on case studies, historical episodes, and normative issues that raise questions about the role of values in science. For details, check the Science Studies Network calendar: *http://depts.washington.edu/ssnet/*

In-class presentation (20%)

In one class during the quarter, teams of two or three members of the seminar will make a presentation on a selection of the assigned readings, focusing on specific concepts, arguments, and issues raised by these readings. These should be well crafted analytic presentations running not more than 20 minutes, designed to raise questions for class discussion.

- Presentations will be scheduled beginning with the seminar on February 2.
- Presentation teams and a schedule will be set up in the second week of the quarter.

II. Research paper (50%)

The major writing requirement for the quarter is one research paper of roughly **15 pages (**3500-4000 words). It should be a case-based analysis that addresses any topic to do with the epistemic implications of the role of values in science raised by the readings and in seminar discussion.

Topics: In choosing a topic and developing this paper I recommend the following:

- Identify a substantive example of scientific practice, either of your own choosing or one that is analyzed by one or another (or several) of the authors discussed, and work up a an annotated bibliography and overview of what it involves.
- Identify as the philosophical focus of your paper one of the focal issues, disagreements, claims or positions, and arguments discussed in the course of the quarter. Use analysis of the case you have chose as the basis for responding to and developing your own position on these issues.

For example, you could assess arguments from inductive risk, or one or another of the (contested) distinctions between epistemic and nonepistemic values that they typically presuppose; do they capture what's at issue in the case you choose? Alternatively, consider whether non-epistemic values of a specific kind do actually play the role attributed to them by those who hold that they are ineliminable from science, and whether a case has been made, or can be made, for the claim that they role they play is epistemically constructive. Or, critically assess one of the alternative accounts on offer of objectivity or epistemic integrity; are they adequate, both in their own terms and as normative guidelines for research practice?

Process: It is crucial that you identify the focal topic of your paper and a case in terms of which to develop it early in the quarter. Two Workshop Weeks have been set aside for developing your research paper.

- **January 25 - Prospectus:** choose the case you will discuss and draft a one-page prospectus for your research paper that outlines what it involves and identifies the philosophical issues it raises that you would like to address; this should include an annotated bibliography. Post this prospectus online (in lieu of readings responses) by 5:00 pm Wednesday, January 25, for workshop discussion on January 26.
- **February 15 - Draft**: develop a thesis statement and outline of the philosophical analysis and argument you plan to develop for your final paper. Post this draft online, with an expanded bibliography, by 5:00 pm Wednesday, February 15, for workshop discussion on February 16.
- **March 15 – Final paper:** submit your final paper through the seminar drop-box by 5:00 pm on the Thursday of the exam week.

Course policies

Constructive engagement: Approach these readings, and one anothers' contributions to seminar discussions of them, with the primary aim of understanding the speakers' or authors' position as sympathetically and comprehensively as you can. Then engage analytically in the spirit of building the best arguments possible, drawing out their implications, considering objections and omissions they need to address. Rigorous conceptual analysis is a powerful tool, and one key contribution we philosophers can make to debates of real intellectual and practice import; use it constructively.

Late policy: I do not accept late assignments without prior notice and documentation of major medical or personal exigency.

Incompletes: The university policy on incompletes requires that you have attended and done satisfactory work in the seminar until within two weeks of the end of the quarter. If you need to request an incomplete, submit a petition that explains why you cannot complete the final requirements of the seminar, and set out a timetable for completing them.

Other University and Department policies: Please see the form appended to this syllabus for the details of university and departmental policies on academic integrity as well as guidelines relating to equal opportunity, disability accommodation, sexual harassment, and safety.

SYLLABUS

January 5: Introduction

January 12: Groundwork: Science as Value-Free

- **Douglas 2009**. *Science, Policy, and the Value-Free Ideal*: Introduction, Chapters 3 and 4.
- **Kincaid, Dupré, Wylie** (eds.) 2007. *Value-Free Science?:* Introduction.
- Daston, Lorraine. 1992. Objectivity and the Escape from Perspective. *Social Studies of Science* 22:597-618.

Background

- Merton, Robert K. 1996. The Ethos of Science. In *On Social Structure and Science*, edited by P. Sztomka. Chicago: University of Chicago Press. Original edition, Journal of Legal and Political Sociology 1(1942): 115-126.
- Cournand, André. 1977. The Code of the Scientist and Its Relationship to Ethics. *Science* 198 (November):699-705.
- Ayer, Alfred Jules. 1946. *Language, Truth and Logic*. Second ed. New York: Dover: Preface and "The Elimination of Metaphysics."

January 19: Arguments from Inductive Risk

- Rudner, Richard. 1953. The Scientist *qua* Scientist Makes Value Judgments. *Philosophy of Science* 20:1-6.
- Jeffrey, Richard C. 1956. Valuation and Acceptance of Scientific Hypotheses. *Philosophy of Science* 23 (3):237-246.
- Hempel, Carl G. 1965. Science and Human Values. In *Aspects of Scientific Explanation*, edited by C. G. Hempel. New York: Free Press.
- McMullin, Ernan. 1983. Values in Science. In *Proceedings of the 1982 Biennial Meeting of the Philosophy of Science Association*, edited by P. D. Asquith and T. Nickles. East Lansing, MI: Philosophy of Science Association.

Background

- Churchman, C. West. 1948. Statistics, Pragmatics, Induction. *Philosophy of Science* 15:249-268.
- Churchman, C. West. 1956. Science and Decision Making. *Philosophy of Science* 22:247-249.
- Nagel, Ernest. 1961. The Value-Oriented Bias of Social Inquiry. In *The Structure of Science: Problems in the Logic of Scientific Explanation*. New York: Harcourt Brace.
- Levi, Isaac. 1960. Must the Scientist Make Value Judgments? *Journal of Philosophy* 57:345-357.

January 26: **Workshop Week**

Monday, January 23: Biological Futures Colloquium (12:30-2:00, Simpson Center CMU 202)
Meg Stalcup and Gaymon Bennett (FHCRC): On Internalization: Ethics Maxims for the Biological Sciences

February 2: **Autonomous Science**

- **Kincaid, Dupré, Wylie** (eds.) 2007. *Value-Free Science?:* Doppelt, "The Value Ladenness of Scientific Knowledge"; Kincaid, "Contextulaist Morals and Science."
- Kuhn, Thomas S. 1977 [1973]. Objectivity, Value Judgment, and Theory Choice. In *The Essential Tension: Selected Studies in Scientific Tradition and Change*. Chicago: UChicago Press.

Supplementary sources

- Doppelt, Gerald. 1990. The Naturalist Conception of Methodological Standards in Science: A Critique. *Philosophy of Science* 57:1-19.
- Fuller, Steve. 1992. Being There with Thomas Kuhn: A Parable for Postmodern Times. *History and Theory* 31 (3):241-275.
- Solomon, Stephanie R. 2010. Kuhn's Alternative Path: Science and the Social Resistance to Criticism. *Perspectives on Science* 18 (3):352-368.

February 9: Reconceptualizing Objectivity: Individual Norms and Integrity

- **Douglas. 2009.** *Science, Policy, and the Value-Free Ideal*: Chapters 6-8.
- **Machamer and Wolters**, eds. 2004. *Science, Values, and Objectivity*: Lacey, "Is There a Significant Distinction Between Cognitive and Social Values?"; Mitchell, "The Prescribed and Proscribed values in Science Policy".

Supplementary sources

- **Lacey. 2005. *Values and Objectivity in Science*:** Introduction, Chapters 1 and 2.
- **Machamer and Wolters**, eds. 2004. *Science, Values, and Objectivity*: Douglas, "Border Skirmishes between Science and Policy."

February 16: Workshop Week

Monday, February 13: Biological Futures Speaker (4:00-5:30, Simpson Center CMU 202)
Dave Guston (ASU): "Anticipatory Governance of Emerging Technologies"

February 23: Reconceptualizing Objectivity: Social/Cognitive Norms

- **Machamer and Wolters**, eds. 2004. *Science, Values, and Objectivity*: Longino, "How Values Can Be Good for Science"
- Longino, Helen E. 2002. *The Fate of Knowledge*. Princeton NJ: Princeton University Press: "Socializing Knoweldge" (Chapter 6).
- Intemann, Kristen. 2001. Science and Values: Are Moral Judgments Always Irrelevant to the Justification of Scientific Claims? *Philosophy of Science* 68 (3):506-518.

Choose one of the following:

- Lloyd, Elisabeth A. 2005. *The Case of the Femal Organsm: Bias in the Science of Evolution*. Cambridge, MA: Harvard University Press: "Bias" (Chapter 8).
- de Melo-Martin, Inmaculada, and Kristen Intemann. 2011. Feminist Resources for Biomedical Research: Lessons from the HPV Vaccines. *Hypatia* 26 (1):79-101.
- de Melo-Martin, Inmaculada, and Kristen Intemann. 2009. How Do Disclosure Policies Fail? Let Us Count the Ways. *The FASEB Journal* 23:1638-1642.

Supplementary sources

- Longino, Helen E. 1990. *Science as Social Knowledge: Values and Objectivity in Scientific Inquiry*. Princeton NJ: Princeton University Press: "Values and Objectivity" (Chapter 4)
- Lloyd, Elisabeth A. 1995. Objectivity and the Double Standard for Feminist Epistemologies. *Synthese* 104:351-381.

March 1: Intellectual Authority and Epistemic Diversity

Monday, February 27: Biological Futures Speaker (4:00-5:30, Simpson Center CMU 202)
Collin Koopman (Oregon): "Biopolitics and Its Problems: A Genealogical Pragmatist Approach"

- Anderson, Elizabeth. 2006. The Epistemology of Democracy. *Episteme* 3 (1):8-22.
- Scheman, Naomi. 2001. Epistemology Resuscitated: Objectivity as Trustworthiness. In *Engendering Rationalities*, edited by N. Tuana and S. Morgan. New York: SUNY Press.
- Tollefsen, Deborah Perron. 2010. Group Deliberation, Social Cohesion, and Scientific Teamwork: Is There Room for Dissent? *Episteme* 3 (1-2):37-51.

Choose one of the chapters in the case study section of Kincaid, Dupré, Wyile; Lacey on transgenic crops, or one of following:

- Solomon, Miriam. 2006. Norms of Epistemic Diversity. *Episteme* 3 (1):23-36.
- Fricker, Miranda. 2006. Powerless and Social Interpretation. *Episteme* 3 (1).
- Hookway, Christopher. 2010. Some Varieties of Epistemic Injustice. *Episteme* 7 (2):151- 163.
- **Lacey. 2005. *Values and Objectivity in Science*:** "Multicultural Science" and "The Social Location of Scientific Practices" (Chapters 4 and 5).

March 8: Meta-Philosophical Questions

- **Smith, Barbara Hernstein.** 2005. *Scandalous Knowledge*: Chapters 1-3.
- Hacking, Ian. 1999. Why ask What? In *The Social Construction of What?* Cambridge, MA: Harvard University Press.
- Mills, Charles W. 2005. "Ideal Theory" as Ideology. *Hypatia* 20 (3):165-183.

DEPARTMENT OF PHILOSOPHY - UNIVERSITY OF WASHINGTON
INFORMATION FOR STUDENTS[1]

COURSES, GRADING, ACADEMIC CONDUCT

Plagiarism

Plagiarism is defined as the use of creations, ideas or words of publicly available work without formally acknowledging the author or source through appropriate use of quotation marks, references, and the like. Plagiarizing is presenting someone else's work as one's own original work or thought. This constitutes plagiarism whether it is intentional or unintentional. The University of Washington takes plagiarism very seriously. Plagiarism may lead to disciplinary action by the University against the student who submitted the work. Any student who is uncertain whether his or her use of the work of others constitutes plagiarism should consult the course instructor for guidance before formally submitting the course work involved. *(Sources: UW Graduate School Style Manual; UW Bothell Catalog; UW Student Conduct Code)*

Incompletes

An incomplete is given only when the student has been in attendance and has done satisfactory work until within two weeks of the end of the quarter and has furnished proof satisfactory to the instructor that the work cannot be completed because of illness or other circumstances beyond the student's control. **See the requirements section of the syllabus for specifics pertaining to this course**. *(Source: UW General Catalog Online, "Student Guide/Grading")*

Grade appeal procedure

A student who believes he or she has been improperly graded must first discuss the matter with the instructor. If the student is not satisfied with the instructor's explanation, the student may submit a written appeal to the chair of the Department of Philosophy with a copy of the appeal also sent to the instructor. The chair consults with the instructor to ensure that the evaluation of the student's performance has not been arbitrary or capricious. Should the chair believe the instructor's conduct to be arbitrary or capricious and the instructor declines to revise the grade, the chair, with the approval of the voting members of his or her faculty, shall appoint an appropriate member, or members, of the faculty of the Department of Philosophy to evaluate the performance of the student and assign a grade. The Dean and Provost should be informed of this action. Once a student submits a written appeal, this document and all subsequent actions on this appeal are recorded in written form for deposit in a School file*. (Source: UW General Catalog Online, "Student Guide/Grading")*

Concerns about a course, an instructor, or a teaching assistant

If you have any concerns about a Philosophy course or your instructor, please see the instructor about these concerns as soon as possible. If you are not comfortable talking with the instructor or not satisfied with the response that you receive, you may contact the chair of the program offering the course (names available from the Department of Philosophy, 361 Savery Hall).

If you have any concerns about a teaching assistant, please see the teaching assistant about these concerns as soon as possible. If you are not comfortable talking with the teaching assistant or not satisfied with the response that you receive, you may contact the instructor in charge of the course. If you are still not satisfied with the response that you receive, you may contact the chair of the program offering the course (names available from the Department of Philosophy, 361 Savery Hall), or the Graduate School at G-1 Communications Building (543-5900).

Office of Scholarly Integrity

The Office of Scholarly Integrity is housed in the Office of the Vice-Provost. The Office of Scholarly Integrity is responsible for investigating and resolving allegations of scientific and scholarly misconduct by faculty, students, and staff of the University of Washington; it coordinates, in consultation and cooperation with the Schools and Colleges, inquiries and investigations into allegations of scientific and scholarly misconduct, and it is responsible for compliance with reporting requirements established by various

[1] *Adapted from material prepared from the UW Department of History and used with permission.*

Federal and other funding agencies in matters of scientific or scholarly misconduct. The Office of Scholarly Integrity maintains all records resulting from inquiries and investigations of such allegations. Scientific and scholarly misconduct, as defined by University rules (Handbook, Vol. II, Section 25-51, Executive Order #61) includes the following forms of inappropriate activities: intentional misrepresentation of credentials; falsification of data; plagiarism; abuse of confidentiality; deliberate violation of regulations applicable to research. Students can report cases of scientific or scholarly misconduct either to the Office of Scholarly Integrity, to their faculty adviser, or the department chair. The student should report such problems to whomever he or she feels most comfortable.
(Sources: UW web page (http://www.grad.washington.edu/OSI/osi.htm); minutes of Grad School Executive Staff and Division Heads meeting, 7/23/98)

POLICIES, RULES, RESOURCES

Equal Opportunity
The University of Washington reaffirms its policy of equal opportunity regardless of race, color, creed, religion, national origin, sex, sexual orientation, age, marital status, disability, or status as a disabled veteran or Vietnam-era veteran in accordance with University of Washington policy and applicable federal and state statutes and regulations.

Disability Accommodation
The University of Washington is committed to providing access, equal opportunity and reasonable accommodation in its services, programs, activities, education and employment for individuals with disabilities. For information or to request disability accommodation contact: Disabled Students Services (Seattle campus) at (206) 543-8924/V, (206) 543-8925/TTY, (206) 616-8379/Fax, or e-mail at uwdss@u.washington.edu; Bothell Student Affairs at (425) 352-5000/V; (425) 352-5303/TTY, (425) 352-5335/Fax, or e-mail at uwbothel@u.washington.edu; Tacoma Student Services at (253) 552-4000/V, (253) 552-4413/TTY, (253) 552-4414/Fax.

Sexual Harassment
Sexual harassment is defined as the use of one's authority or power, either explicitly or implicitly, to coerce another into unwanted sexual relations or to punish another for his or her refusal, or as the creation by a member of the University community of an intimidating, hostile, or offensive working or educational environment through verbal or physical conduct of a sexual nature.

If you believe that you are being harassed, **seek help**—the earlier the better. You may speak with your instructor, your teaching assistant, the undergraduate advisor (363 Savery Hall), graduate program assistant (366 Savery Hall), or the chair of the Philosophy Department (364 Savery Hall). In addition, you should be aware that the University has designated special people to help you. They are: University Ombudsman and Ombudsman for Sexual Harassment (for complaints involving faculty members and teaching assistants) Susan Neff, 301 Student Union (HUB), 543-6028; and the University Complaint Investigation and Resolution Office, 616-2028. *(Sources: UW Graduate School, CIDR, Office of the President)*