

PHIL 510 – Philosophy of Science

‘Science and Values’

Winter Term 2013

Tue, Thu 11:00–12:20, Assiniboia Hall 2-02A

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A. Course overview

Science and values will be the topic of this graduate seminar. Different kinds of values clearly have an impact on science, however, proponents of the view that science is (or ought to be) value-free have maintained a distinction between epistemic-cognitive values and social-political values, where only the former are a proper part of science. Likewise, one can acknowledge science’s important function for society, while arguing that science fulfills its social function best by scientists providing reliable knowledge without being guided by social-political considerations and by science being autonomous rather than politicized by external influences. We will critically discuss different views on what kinds of values may influence scientific practice, and how such values can play a legitimate role. Closely associated issues are the relation between science and (the concerns of) society and the notion of scientific objectivity. The seminar will pay particular attention to feminist analyses and philosophy of science, including the question as to whether the best response to sexist and false or empirically flawed views promoted by past and current science is to work toward an unbiased, value-free science or toward a science (and philosophy of science) that self-consciously endorses such social values as equity.

Major authors to be discussed include Helen Longino, Hugh Lacey, Heather Douglas, Philip Kitcher, and Janet Kourany. In the last two weeks of the term, Heather Douglas and Janet Kourany will be in town to give public talks, so that students taking this seminar will have the opportunity to interact with them during their visits.

B. Prerequisites

The class is organized such that background knowledge in philosophy of science is not required, though interests in the nature of science or the role of science in society are desirable.

C. Required texts

The required readings consist of journal articles and book chapters, and are listed below in Section H. A substantial part of the readings can be accessed online via our course website.

D. Course requirements

- Term paper(s) 70%
- Oral presentation 20%
- Participation 10%

Term paper(s) (70%): You must write **either one long term paper**, worth 70% of credit, **or two short term papers**, each of which is worth 35% of credit. An electronic version of the long term paper is due on Monday, April 22 at noon. If you choose the short paper option, an electronic version of the first paper is due on Tuesday, March 5 at 11am, and the second one is due on April 22 at noon.

A long paper is about 5000–7000 words in length, while each of the short papers has about 2500–3500 words. I am happy to provide comments on term paper drafts. In the case of the long paper and the 2nd short paper, I guarantee comments if you send me an electronic draft by April 14.

Oral presentation (20%): Every student has to give one oral presentation. Your task as a presenter is to briefly summarize this meeting’s readings (highlighting points that you find particularly relevant) but primarily to start the discussion by having prepared some questions (e.g. about problematic issues in the readings). I ask you to (a) prepare a short handout and email me a draft in advance so that I can provide comments, and to (b) make copies of the final version for the whole class, so that everyone has a summary of your presentation. You may give your presentation using PowerPoint (and use a printout of the slides as a handout).

Participation (10%): Attendance and active participation is important for this class. It is the responsibility of each student to come to class prepared to actively engage in discussion. Each of you will probably have picked up different points from the readings or have questions or objections, so please share them! You can also obtain participation credit by starting topics and replying to posts at the discussion forum on our website.

E. Academic integrity and plagiarism

The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards and to uphold the policies of the university in this respect. Students are urged to familiarize themselves with the Code of Student Behaviour (<http://tinyurl.com/CodeofStudentBehaviour>) and avoid any behaviour which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the university. For a summary please see <http://www.governance.ualberta.ca/en/StudentAppeals/DontCheatsheet.aspx>

The Code of Student Behaviour defines plagiarism as follows:

No Student shall submit the words, ideas, images or data of another person as the Student’s own in any academic writing, essay, thesis, project, assignment, presentation or poster in a course or program of study.

The library has a general website on plagiarism:

<http://www.library.ualberta.ca/guides/plagiarism>. See in particular the section on “Avoiding Plagiarism” (sidebar on the left, among “Resources for Students”).

F. Course website

The course has a website at <https://eclass.srv.ualberta.ca>. Some of our assigned readings can be accessed from this site, and I use it to post presentation handouts and additional material. The site also contains a discussion board. Let me know if you audit the class (or upon login do not see PHIL 510 under 'My Courses'), so that I can add you to the list of online participants.

G. Schedule of classes

Jan 8	Background 1. Pp. 3–8 of Reichenbach, <i>Experience and Prediction</i>
Jan 10	Background 2. Pp. 21–41 of Kourany, <i>Philosophy of Science after Feminism</i>
Jan 15	Knowledge as social 1. Pp. 91–95 of Chalmers, <i>Science and Its Fabrication</i> Pp. 4–6 of Bloor, <i>Knowledge and Social Imagery</i> Chapter 4 of Longino, <i>The Fate of Knowledge</i>
Jan 17	Knowledge as social 2. Pp. 128–136 of Longino, <i>The Fate of Knowledge</i> Section 5 of Brigandt, 'Intelligent design and the nature of science: philosophical and pedagogical points'
Jan 22	Enter values 1. Chapters 6 and 7 of Kitcher, <i>Science, Truth, and Democracy</i>
Jan 24	Enter values 2. Kincaid, 'Contextualist morals and science'
Jan 29	Classical accounts 1. Rudner, 'The scientist <i>qua</i> scientist makes value judgments' Sections 1, 4 and 6 of Jeffrey, 'Valuation and the acceptance of scientific hypotheses' Sections I and II of Levi, 'Must the scientist make value judgments?'
Jan 31	Classical accounts 2. McMullin, 'Values in science'
Feb 5	Recent accounts 1. Pp. 2–22, 67–74 and 231–234 of Lacey, <i>Is Science Value Free?</i>
Feb 7	Recent accounts 2. Pp. 74–87 of Lacey, <i>Is Science Value Free?</i>
Feb 12	Recent accounts 3. Pp. 71–82 and 87–95 of Douglas, <i>Science, Policy, and the Value-Free Ideal</i>
Feb 14	Recent accounts 4. Pp. 95–114 of Douglas, <i>Science, Policy, and the Value-Free Ideal</i>

Reading week

Feb 26	Objectivity 1. Daston and Galison, 'The image of objectivity'
Feb 28	Objectivity 2. Chapter 6 of Douglas, <i>Science, Policy, and the Value-Free Ideal</i> Section 3 of Douglas, 'The irreducible complexity of objectivity'

Mar 5	Flawed and sexist theories 1. Pp. 3–17 of Kourany, <i>Philosophy of Science after Feminism</i> 1st short term paper due at 11am
Mar 7	Flawed and sexist theories 2. Lloyd, ‘Pre-theoretical assumptions in evolutionary explanations of female sexuality’ Pp. 127–136 of Schiebinger, <i>Has Feminism Changed Science?</i>
Mar 12	Flawed and sexist theories 3. Wylie and Hankinson Nelson, ‘Coming to terms with the values of science: insights from feminist science scholarship’
Mar 14	Epistemic and social values 1. Longino, ‘Cognitive and non-cognitive values in science: rethinking the dichotomy’
Mar 19	Epistemic and social values 2. Anderson, ‘Knowledge, human interests, and objectivity in feminist epistemology’
Mar 21	Epistemic and social values 3. Rottschaefer, ‘Assessing the role of non-epistemic feminist values in scientific inquiry’
Mar 26	Socially responsible science 1. Chapter 3 of Kourany, <i>Philosophy of Science after Feminism</i>
Mar 28	Socially responsible science 2. Chapter 8 of Kitcher, <i>Science, Truth, and Democracy</i>
Apr 2	Socially responsible science 3. de Melo-Martín and Intemann, ‘Feminist resources for biomedical research: lessons from the HPV vaccines’
Apr 4	Socially relevant phil. of science 1. Fehr and Plaisance, ‘Socially relevant philosophy of science: an introduction’ [Heather Douglas talk at 3:30pm]
Apr 9	Socially relevant phil. of science 2. Tuana, ‘Leading with ethics, aiming for policy: new opportunities for philosophy of science’
Apr 11	Socially relevant phil. of science 3. Pp. 118–125 of Kourany, <i>Philosophy of Science after Feminism</i> [Janet Kourany talk at 3:30pm]

Apr 22 Long term paper / 2nd short term paper due at noon

H. Bibliography of readings

Anderson, Elizabeth (1995) Knowledge, human interests, and objectivity in feminist epistemology. *Philosophical Topics* 23: 27-58.

Bloor, David (1974) *Knowledge and Social Imagery*. London: Routledge.

Brigandt, Ingo (in press) Intelligent design and the nature of science: philosophical and pedagogical points. In K. Kampourakis (Ed.), *The Philosophy of Biology: A Companion for Educators*. Berlin: Springer.

Chalmers, Alan F. (1990) *Science and Its Fabrication*. Minneapolis: University of Minnesota Press.

- Daston, Lorraine & Galison, Peter (1992) The image of objectivity. *Representations* 40: 81-128.
- de Melo-Martín, Inmaculada & Intemann, Kristen (2011) Feminist resources for biomedical research: lessons from the HPV vaccines. *Hypatia* 26: 79-101.
- Douglas, Heather (2004) The irreducible complexity of objectivity. *Synthese* 138: 453-473.
- Douglas, Heather (2009) *Science, Policy, and the Value-Free Ideal*. Pittsburgh: University of Pittsburgh Press.
- Fehr, Carla & Plaisance, Kathryn (2010) Socially relevant philosophy of science: an introduction. *Synthese* 177: 301-316.
- Jeffrey, Richard C. (1956) Valuation and acceptance of scientific hypotheses. *Philosophy of Science* 23: 237-246.
- Kincaid, Harold (2007) Contextualist morals and science. In H. Kincaid, J. Dupré & A. Wylie (Eds.), *Value-Free Science? Ideals and Illusions* (pp. 218-238). Oxford: Oxford University Press.
- Kitcher, Philip (2001) *Science, Truth, and Democracy*. Oxford: Oxford University Press.
- Kourany, Janet (2010) *Philosophy of Science after Feminism*. Oxford: Oxford University Press.
- Lacey, Hugh (1999) *Is Science Value Free? Values and Scientific Understanding*. London: Routledge.
- Levi, Isaac (1960) Must the scientist make value judgments? *The Journal of Philosophy* 57: 345-357.
- Lloyd, Elisabeth A. (1993) Pre-theoretical assumptions in evolutionary explanations of female sexuality. *Philosophical Studies* 69: 139-153.
- Longino, Helen E. (1996) Cognitive and non-cognitive values in science: rethinking the dichotomy. In L. Hankinson Nelson & J. Nelson (Eds.), *Feminism, Science and the Philosophy of Science* (pp. 39-58). Dordrecht: Kluwer.
- Longino, Helen E. (2002) *The Fate of Knowledge*. Princeton: Princeton University Press.
- McMullin, Ernan (1982) Values in science. *PSA: Proceedings of the Biennial Meeting of the Philosophy of Science Association 1982* (Volume Two, Symposia and Invited Papers): 3-28.
- Reichenbach, Hans (1938) *Experience and Prediction: An Analysis of the Foundations and the Structure of Knowledge*. Chicago: University of Chicago Press.
- Rottschaefer, William A. (2003) Assessing the role of non-epistemic feminist values in scientific inquiry. *Behavior and Philosophy* 31: 225-249.
- Rudner, Richard (1953) The scientist *qua* scientist makes value judgments. *Philosophy of Science* 20: 1-6.
- Schiebinger, Londa (1999) *Has Feminism Changed Science?* Cambridge, MA: Harvard University Press.
- Tuana, Nancy (2010) Leading with ethics, aiming for policy: new opportunities for philosophy of science. *Synthese* 177: 471-492.
- Wylie, Alison & Hankinson Nelson, Lynn (2007) Coming to terms with the values of science: insights from feminist science scholarship. In H. Kincaid, J. Dupré & A. Wylie (Eds.), *Value-Free Science? Ideals and Illusions* (pp. 58-86). Oxford: Oxford University Press.