

## **Sociology 5111 FA: Problems and Issues in Sociology**

Instructor: Dr. Antony Puddephatt  
Class Location: SN 1044  
Class Time: Wednesdays, 2:30-5:30

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### **Introduction to the Course:**

Many consider sociology to be a science of the social world. That is, sociologists are supposed to collect facts, data, and evidence to build or test theories that shed light on, and foster knowledge about, society. As a result of this scientific approach (broadly defined), sociologists are trusted to cut through stereotypes and misconceptions about society, and uncover features and patterns in the social world that may be unbeknownst to the lay public. But what is this thing called science? How do we tell whether or not to trust scientific claims, or the methods and background knowledge used to generate these claims?

Part of the problem is that science itself is a deeply social and cultural activity that has been constructed over the years by human beings (historically, men). Science does not exist in a social vacuum, but operates in institutional structures, systems of norms and rules, and fields of status and competition whereby actors struggle for scarce resources, career recognition, and social prestige. Science connects to other social institutions in the economy, politics, the military, and religion. Further, the actual “doing” of science is a social and cultural process as well. Scientific actors do not conduct research in isolation, but act collectively in concrete settings, within constructed worlds of technical instruments and well-established research practices that make use of taken-for-granted knowledge. The myriad social and physical interactions that go on in these settings leave little doubt that science is inherently social. As we will see, the question starts to become “should our definition of the social be reconstituted,” based on the major findings of how knowledge is produced within scientific practice. This course is intended to explore issues surrounding the social production of scientific knowledge, considering competing perspectives and well-grounded empirical studies on this question as we encounter them. I hope that by critically examining the practices and institutional parameters of science, we will learn how to better consider key ontological and epistemological questions regarding the production of knowledge in our own discipline.

Since you are required to write a major essay on a theme relevant to the sociology of knowledge, science, or technology, you might keep some of these major journals in mind in order to search for potential topics: *Social Studies of Science*; *Science, Technology, and Human Values*; *Social Epistemology*; *Science, Technology, and Society*; *Science as Culture*; *Handbook of Science and Technology Studies* (several editions). Not an exhaustive list, but gets you started!

### **Mark Breakdown:**

- |                         |     |
|-------------------------|-----|
| 1. Paper Proposal       | 10% |
| 2. Major Essay          | 50% |
| 3. Seminar Presentation | 20% |
| 4. Participation        | 20% |

## **Explanation of Assignments**

### **1. Paper Proposal (Due September 28)**

Since you are likely new to the sociology of knowledge, science and technology, and we have a fairly short term, I think it is a good idea to force you to get thinking about a topic for your major paper early on. This proposal should be a 5-10 page essay that introduces your essay topic, and describes the logic of your inquiry, with reference to a tentative bibliography of academic work on the subject, and, if applicable, any primary research sources you plan to use. This exercise is meant to get a conversation going to ensure you choose a good, manageable essay topic, and to try and indicate my standards for presenting your work in written form. The proposal is not expected to be “perfect” or “bullet-proof,” especially since you are new to the area.

### **2. Major Essay (Due end of term)**

This essay should be a topic of your own choosing, but should be linked in some central way to the sociology of knowledge, science or technology. There are a number of approaches/strategies you might take. Here are some basic formulas that might work:

- a. Synthesize the major contributions/insights of a major theorist or school of thought related to S&TS
- b. Analyze a major debate on the field, and look for a way forward in the controversy by introducing a new perspective or novel argument
- c. Compare and contrast two similar theorists/schools of thought to note their analytical similarities/differences, and point to their potential to complement one another when applied together
- d. Provide a review of a central issue in S&TS (public engagement in science, gender inequities in science, how to define expertise, social constructionism vs. actor network theory, etc).
- e. Use the tools of the sociology of science to analyze a current issue in the media that is related to science or technology in some way (GM foods, environmental debates, controversies in nutritional or pharmaceutical research, emerging ethical issues in new science and technology developments, etc).

Please plan to clear your project with me in a personal meeting, or via email. I might be able to steer you toward good sources, offer general advice, and suggest ways to reshape your paper to make it more manageable or focused. The paper should be a minimum of 20 pages (references included), double spaced, times new roman 12 point font. Referencing should fall in line with ASA format (see department webpage for info or ask me about it).

### **3. Seminar Presentation**

One week of your choosing, you are responsible for leading discussion on the course readings. Your job is to ensure that the class participates in discussion, and answers questions, about the key ideas of the work for that week. Handouts, audio-visual aids, etc are optional. The main thing you will be graded on is the coverage of the major ideas, and your ability to “make the class work” in encouraging active participation in this regard.

#### **4. Participation**

Because this is a seminar class, participation is very important. This grade evaluates your preparedness for class, and your ability to demonstrate knowledge of the key ideas of the readings, and to provide insightful comments/analysis in this regard.

#### **Course Schedule:**

##### **September 14: Introduction to the Course**

##### **September 21: Introductory Readings: What is the Sociology of Science?**

1. Puddephatt, Antony and Neil McLaughlin. 2007. "The Sociology of Knowledge," pp 239-248 in C. Bryant and D. Peck (eds.) *21<sup>st</sup> Century Sociology: A Reference Handbook*. Thousand Oaks, CA: Sage.
2. Mulkay, Michael. 1979. "The Customary Sociological View of Science," pp 1-26 in M. Mulkay's *Science and the Sociology of Knowledge*. London, UK: George Allen and Unwin.
3. Pinch, Trevor. 2007. "The Sociology of Science and Technology," pp 266-276 in C. Bryant and D. Peck (eds.) *21<sup>st</sup> Century Sociology: A Reference Handbook*. Thousand Oaks, CA: Sage.

##### **September 28: Kuhn vs. Popper**

1. Popper, Karl. 1999. "Selections from the Logic of Scientific Discovery," pp 99-119 in Boyd, Gasper and Trout (eds.) *The Philosophy of Science*, Cambridge, MA: MIT Press.
2. Kuhn, Thomas. 1999. "Scientific Revolutions," pp 139-157 in Boyd, Gasper and Trout (eds.) *The Philosophy of Science*, Cambridge, MA: MIT Press.
3. Fuller, Steve. 2004. "Kuhn and Popper: A Case of Mistaken Identities," pp 12-19 in *Kuhn vs. Popper: The Struggle for the Soul of Science*. New York, NY: Columbia University Press.

\*\*\*\*\* ESSAY PROPOSAL DUE!! \*\*\*\*\*

##### **October 5: Robert Merton, Pioneer in the Sociology of Science**

Merton, Robert. 1973. *The Sociology of Science: Theoretical and Empirical Investigations*. Chicago: University of Chicago Press.

1. "The Puritan Spur to Science," pp 228-253,
2. "The Normative Structure of Science," pp 267-280, and
3. "The Mathew Effect in Science" pp 439-459

##### **October 12: Ambivalence, Ideology, and Boundaries in Science**

1. Mitroff, Ian. 1974. "Norms and Counter-Norms in a Select Group of the Apollo Moon Scientists: A Case Study of the Ambivalence of Scientists," *American Sociological Review*, 39: 579-595.
2. Mulkay, Michael. 1976. "Norms and Ideology in Science," *Social Science Information*, 15(4-5): 637-656.

3. Gieryn, Thomas. 1983. "Boundary Work and the Demarcation of Science from Nonscience: Strains and Interests in the Professional Ideologies of Scientists," *American Sociological Review*, 48(6): 781-795.

### **October 19: Laboratory Studies and the Constructivist Approach to Science**

1. Lynch, Michael. 1993. "The Rise of the New Sociology of Scientific Knowledge," pp 71-116 in M. Lynch's *Scientific Practice and Ordinary Action: Ethnomethodology and Social Studies of Science*. Cambridge, MA: Cambridge University Press. ON RESERVE
2. Knorr-Cetina, Karin. 2001. "Laboratory Studies: The Cultural Approach to the Study of Science," pp 140-166 in S. Jasanoff et. al. (eds.) *Handbook of Science and Technology Studies*. Thousand Oaks, CA: Sage. ON RESERVE
3. Park Doing. 2008. "Give me a Laboratory and I will Raise a Discipline: The Past, Present and Future Politics of Laboratory Studies in STS," pp 279-296 in Hackett et al (eds.) *The Handbook of Science and Technology Studies, 3<sup>rd</sup> Edition*. Cambridge, MA: MIT Press. ON RESERVE

### **October 26: Tacit Knowledge, The Experimenter's Regress, and Scientific Politics**

1. Collins, Harry M. 1974. "The TEA Set: Tacit Knowledge and Scientific Networks," *Science Studies*, 4: 165-186.
2. Collins, Harry M. 1985. "Detecting Gravitational Radiation: The Experimenter's Regress," pp 79-111 in H.M. Collins' *Changing Order: Replication and Induction in Scientific Practice*. Chicago, IL: University of Chicago Press. ON RESERVE
3. Miall, Charlene and Andrew Miall. 2002. "The Exxon Factor: The Roles of Corporate and Academic Science in the Emergence and Legitimation of a New Global Model of Sequence Stratigraphy," *The Sociological Quarterly*, 43(2): 307-334.

### **November 2: Actants, Hybrids, and Collectives**

1. Latour, Bruno. 1993. *We Have Never Been Modern*. Boston, MA: Harvard University Press. \*\*\* Warning! Challenging read! \*\*\*

### **November 9: Broadening the Scope: Institutional Studies of Science**

1. Fuchs, Stephan. 1993. "A Sociological Theory of Scientific Change," *Social Forces*, 71(4): 933-953.
2. Gibbons, Michael, Camille Limoges, Helga Nowotny, Simon Schwartzman, Peter Scott, and Martin Trow. 1994. "Evolution of Knowledge Production," pp 17-45 in Gibbons et al. *The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies*. London, UK: Sage.
3. Frickel, Scott and Neil Gross. 2005. "A General Theory of Scientific/Intellectual Movements," *American Sociological Review*, 70(2): 204-233.

### **November 16: Feminist Critiques of Science**

1. Harding, Sandra. 2001. "Feminist Standpoint Epistemology," pp 145-168 in Muriel Lederman and Ingrid Bartsch (eds.) *The Gender and Science Reader*. New York, NY: Routledge. (ON RESERVE)

2. Haraway, Donna. 2001. "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," pp 169-188 in Muriel Lederman and Ingrid Bartsch (eds.) *The Gender and Science Reader*. New York, NY: Routledge. (ON RESERVE)
3. Fox, Mary Frank. 2010. "Women and Men Faculty in Academic Science and Engineering: Social-Organizational Indicators and Implications," *American Behavioral Scientist*, 53(7): 997-1012.

**November 23: Critical and Reflexive Analyses of Science**

1. Bourdieu, Pierre. 2004. *Science of Science and Reflexivity*. Chicago, IL: University of Chicago Press.

**November 30: Nature, the Environment and Climate Change**

1. Yearley, Steven. 2008. "Nature and the Environment in Science and Technology Studies" pp 921-947 in Hackett et al (eds.) *The Handbook of Science and Technology Studies*, 3<sup>rd</sup> Edition. Cambridge, MA: MIT Press. ON RESERVE
2. Jasanoff, Shiela. 2010. "A New Climate for Society," *Theory, Culture and Society*, 27(2-3), 233-253.
3. Masco, Joseph. 2010. "Bad Weather: On Planetary Crisis," *Social Studies of Science*, 40(1): 7-40.

# Lakehead University Regulations:

## IX Academic Dishonesty

The University takes a most serious view of offences against academic honesty such as plagiarism, cheating and impersonation. Penalties for dealing with such offences will be strictly enforced.

A copy of the "Code of Student Behaviour and Disciplinary Procedures" including sections on plagiarism and other forms of misconduct may be obtained from the Office of the Registrar.

The following rules shall govern the treatment of candidates who have been found guilty of attempting to obtain academic credit dishonestly.

- (a) The minimum penalty for a candidate found guilty of plagiarism, or of cheating on any part of a course will be a zero for the work concerned.
- (b) A candidate found guilty of cheating on a formal examination or a test, or of serious or repeated plagiarism, or of unofficially obtaining a copy of an examination paper before the examination is scheduled to be written, will receive zero for the course and may be expelled from the University.

Students disciplined under the Code of Student Behaviour and Disciplinary Procedures may appeal their case through the Judicial Panel.

Note: "Plagiarism" shall be deemed to include:

1. Plagiarism of ideas as where an idea of an author or speaker is incorporated into the body of an assignment as though it were the writer's idea, i.e. no credit is given the person through referencing or footnoting or endnoting.
2. Plagiarism of words occurs when phrases, sentences, tables or illustrations of an author or speaker are incorporated into the body of a writer's own, i.e. no quotations or indentations (depending on the format followed) are present but referencing or footnoting or endnoting is given.
3. Plagiarism of ideas and words as where words and an idea(s) of an author or speaker are incorporated into the body of a written assignment as though they were the writer's own words and ideas, i.e. no quotations or indentations (depending on format followed) are present and no referencing or footnoting or endnoting is given.