Anthropology 128A Introduction to Science Studies
Winter 2004

Class meeting times: Monday, Wednesday and Friday, 12-12.50 p.m., Room no. SE2 1306

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Course Description

Science is a dense site of practices, norms and values that shapes what it means to be human in the contemporary era. Interwoven with the character of scientific knowledge is the character of the ideas that can be thought and not thought, the diseases that will be treated and not treated, the lives that can be lived and not lived. Yet, for reasons that we will explore, science, objectivity and knowledge have proved resistant to critical analysis. In this course you will be introduced to those thinkers who have withstood this resistance and have enabled us to ask:

What is science?
How should we approach the question What is science?
Who is a scientist?
Who is an expert?
What is the role of scientific expertise in a democracy?
What is Gender?
What is Race?
What is Class?
What is Power?
What, if anything, do gender, race, class and power have to do with science?

While we cannot fully answer these huge questions in one quarter (if ever!), we will explore how scholars in science studies have explored such questions. Sometimes these scholars (who come from a variety of disciplinary backgrounds) arrive at different and contradictory answers. You can expect controversy. You can also expect to interrogate some of your most fundamental assumptions about knowledge and science.

Required texts (available at the book store and on reserve at Langson Library).

- Biagioli, Mario, ed. *The Science Studies Reader* (Routledge: New York, 1999). **(SSR)**
- *Course packet* (available through Mozena Publishing, 1-800-444-TEXT (8398)). **(CP)**

Class time:

Class will usually start with announcements and attendance. The majority of the time will be devoted to structured discussion. Our first task will typically be to identify the questions for the day; I will often have my own suggestions.

You should come prepared to the class by having read the texts for the day, taken notes on your impressions and questions, written any assignments, and considered topics for discussion. REGULAR ATTENDANCE IS REQUIRED. The more you cut class, the lower your grade will be.

Written assignments:

Although this course is meant to explore a certain content, it is also meant to help you read critically, and write and communicate effectively. Therefore, assignments for the course include weekly presentations, a midterm essay exam and a final collaborative written project.

Presentations: Every Friday starting Week 3, *five* people will have to present the readings of the week gone by to the class. The primary function of these presentations is to give you the chance to summarize the readings for your classmates, and bring up issues that you think are essential take-homes from the readings, or worthy of further discussion and consideration over the duration of the course. The format of the presentations will be collaborative, informal and interactive. I will divide the class into groups of 5 each. Each group of 5 can, on the week they are due to present, decide the format of the presentation as they see fit. For instance, each presenter could take responsibility for a particular reading. Each person will have 5-7 minutes to make their individual presentation. It is a good idea for the 5 presenters to meet and discuss their presentations beforehand, to ensure that the presentations don't simply repeat each other, but rather are able to build upon and be in conversation with one another. The presentations are worth 20% of your grade.

In the presentations, each presenter's task is first and foremost to show the class how you have come to understand something important from the week's readings. The presentation should show how the reading(s) you're talking about make(s) meaning, raise(s) certain questions, and challenges concepts crucial to the course. It should not simply be a summary of the text, or just an evaluation. But you can draw out connections to larger issues raised by the text. It often helps if you can connect your comments to specific passages in the text.

Presentations will be every Friday, starting in Week 3 and continuing through the end of the quarter. In addition, a presentation assignment will be handed out Monday of Week 2, and presentations for that assignment will occur on the Wednesday and Friday of Week 2 (see syllabus).

Midterm exam

You will receive a take home exam on 2/20 and it is due on 2/27. Details to follow.

Final project

I will hand out details of the final project on 2/13. Final projects are due *on the last day of class,* Friday March 19.

Mundane assignment requirements

The midterm and final projects must be typed and must have your name and the date against the top right margin on the first page; they must be stapled and double-spaced, with page numbers and reasonable margins. Please do not use a title page. Use a standard style of citation such as Chicago, MLA, or APA. Papers that are handwritten, late, or too short will receive no grade. You are required to complete all assigned work to receive credit. Incompletes are for students confronting emergencies; if you have one, please let me know so we can figure something out.

Participation

If you attend class regularly, do the reading, contribute to class discussion and complete high quality presentations, you should expect an A for participation. Students who do not do one or more of these things should expect a lower grade.

Papers

I will use the following criteria for grading papers:

- An A means the paper is coherent. An A paper negotiates the issues it discusses with clarity and precision and demonstrates thoughtfulness. It has a strong, consistent sense in terms of structure, transitions and tone. It is also well defined with proper citations, clear use of direct quotes, etc.
- A B means that while overall the paper is coherent, in spots it gets confused, often because of contradictions in logic or lack of support for statements; this usually means the paper seems less thoughtful. A B paper demonstrates less clarity than an A paper. It addresses the assignment and exhibits some sense in terms of structure, transitions, and tone, but it may in a few spots be inconsistent or imprecise.
- A C paper is difficult to understand. It may address the assignment generally but doesn't seem to have specific focus, thesis or purpose. There are usually many inconsistencies of tone, organization or logic, all of which prevent the reader from being able to make sense of the paper.
- A D means that the paper is hard to understand at all. This usually happens because the paper doesn't address the assignment or the texts in any clear or coherent way.

Course grades

Presentations:	20%
Midterm:	30%
Final project:	40%
Attendance + class participation:	10%

Last but not least:

We will regularly discuss sensitive and important issues concerning sexuality, race, gender, national identity and more. We will be direct and open in our classroom discussions as we attempt to build a small, fragile classroom community. I expect everyone to treat everyone else in it with respect and appreciation for both similarities and differences. This means listening carefully to what is said and taking personal responsibility for one's response.

(**CP** = course packet)
(**SSR** = the *Science Studies Reader*)

Part I: The Problem of Knowledge: One Introduction

The readings in this section provide one (and only one!) way into the lively debates in science studies about the character of knowledge and the institution most associated with its production, science. Many of the texts we read in this section will be invoked, critiqued, and built upon by scholars whose work we consider in subsequent sections of this course.

1/9 Introduction

Getting to know each other, division into presentation groups, syllabus.

1/12 A Brief History of Science Studies

No readings. First assignment handed out.

1/14 Futures of American Science

First presentation assignment due; 10 people present.

1/16 Futures of American Science

10 people present.

1/19 Martin Luther King Jr. day: no classes

1/21 Situated Knowledges

- Haraway, Donna. "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective". SSR 172-188.

1/23 Class presentations and discussion

1/26 The Emergence of Science in American Culture and Society

- "Future of American Science". 1883. *Science* 1 (1): 1-3 (First editorial in *Science*). CP.
- Rosenberg, Charles E. 1997 (1976). *No Other Gods: On Science and American Social Thought*. Baltimore and London: Johns Hopkins University Press. ix-21. (Preface to the first and second edition, plus Chapter 1). CP.

1/28 Trouble in the House of Rationality: When the "Social" Meets Knowledge

- Merton., Robert K. 1973. "Science and the Social Order". In *The Sociology of Science*, Norman W. Storer, ed. Chicago: The University of Chicago Press. 254-266. (Essay written in 1938). CP.
- Mannheim, Karl. 1985 (1936). *Ideology and Utopia: An Introduction to the Sociology of Knowledge*. New York: Harvest / HBJ. x-13. CP.

1/30 Class presentations and discussion

2/2 The Emergence of a Critical Sociology of Knowledge: Mannheim and the Concept of Ideology

- Mannheim, Karl. 1985 (1936). *Ideology and Utopia: An Introduction to the Sociology of Knowledge*. New York: Harvest / HBJ. 55-87, 264-66. CP.

2/4 In Defense of Science

- Merton, Robert K. 1973. "The Normative Structure of Science". In *The Sociology of Science*, Norman W. Storer, ed. Chicago: The University of Chicago Press. 267-280. (Essay written in 1942). CP.

2/6 Class presentations and discussion

2/9 Kuhn: A Revolution?

- Kuhn, Thomas. 1970 (1962). *The Structure of Scientific Revolutions, Second Edition*. Chicago: University of Chicago Press. v-22, 160-181,191-210. CP.

2/11 History and Sociology of Scientific Knowledge

- Bloor, David. 1976. *Knowledge and Social Imagery*. Chicago: University of Chicago Press. ix-x; 1-19. CP.
- Shapin, Steven and Simon Schaffer. 1985. *Leviathan and the Air-Pump: Hobbes, Boyle and the Experimental Life*. Princeton: Princeton University Press. 3-21; 332-344. CP.
- Shapin, Steven. 1988. "The House of Experiment in Seventeenth-Century England". SSR 479-504.

2/13 Class presentation and discussion

Final project assignment will be handed out.

2/16 President's Day. No classes.

2/18 "Science" and "society": Constructivist Approaches

- Latour, Bruno and Woolgar, Steve. *Laboratory Life*. Princeton: Princeton University Press. Introduction and Chapter 1. CP.
- Gieryn, Thomas. 1991. "Boundaries of Science". In *Handbook of Science and Technology Studies*, ed. Sheila Jasanoff, Gerald Markle, James Peterson and Trevor Pinch. Thousand Oaks: Sage. 393-443. CP.

2/20 Class presentation and discussion

Mid-terms will be handed out.

2/23 Actor-Network Theory

- Latour, Bruno. 1987. *Science in Action*. Cambridge: Harvard University Press. 1-17. CP.
- Callon, Michel. 1986. "Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St. Brieuc Bay". SSR 67-83.

2/25 Cultural Studies of Science

- Martin, Emily. 1998. "Anthropology and the Cultural Study of Science". *Science, Technology and Human Values*, 23: 1. 24-44. CP.

2/27 Class presentations and discussion

Mid-terms due.

Part II: Difference

One of the most basic findings of the pieces we have read so far is that definitions of "science", "the scientist" and "nature" vary across cultural, social and political settings.

In the light of this finding, some scholars began to ask fundamental questions about how the knowing subject should be understood, the object of knowledge defined, and the status of objectivity determined absent a unified view of science. In this section, we explore how scientists, historians, philosophers and sociologists have addressed these questions.

3/1 Who can be a Scientist?

- Potter, Elizabeth. 2001. *Gender and Boyle's Law of Gases*. Bloomington: Indiana University Press. 3-21. CP.
- Keller, Evelyn Fox. 1977. "The Anomaly of a Woman in Physics". In *Working It Out: 23 Women Writers, Artists, Scientists, and Scholars Talk About Their Lives and Work*. Ed. Sara Ruddick and Pamela Daniels. New York: Pantheon Books. 77-91. CP.

3/3 What Constitutes Objectivity? (Who Should Be a Scientist?)

- Harding, Sandra. 1997. "Women's Standpoints on Nature: What Makes Them Possible?" *Osiris* 12: 186-200. CP.

3/5 Class presentations and discussion

3/8 The Subject of Research?

- Brandt, Allan. 2000. "Racism and Research: The Case of the Tuskegee Syphilis Experiment", *Tuskegee's Truths*, ed. Susan Reverby, pp. 15-33.

Part III: Power: New and Old Themes

Science studies scholars have raised questions new and old about the definition and constitution of power. In this section we pay particular attention to what science studies scholarship can reveal about constitution of expertise, technologies of representation, embodiment, human agency, and structures of stratification, all conventional concerns of theorists and power.

3/10 Expertise and Democracy: The Role of "Experts"?

- Jasanoff, Sheila. *The Fifth Branch*. Cambridge: Harvard University Press. 1-19. CP.

3/12 Class presentations and discussion

3/15 Expertise and Democracy: The Redefinition of "Experts"?

- Epstein, Steven. 1996. *Impure Science*. Berkeley: University of California Press. [selection]. CP.
- Hammonds, Evelynn. 1987. "Race, Sex, AIDS: The Construction of "Other"". *Radical America* 20 (6). CP.

3/17 Bio-power

- Foucault, Michel. 1977. *Power / Knowledge.* New York: Pantheon Book. 109-133. CP.

3/19 Class presentations and discussion

Final projects due