

# **SOCI 532: Science, Technology, Politics**

## **Department of Sociology, Spring 2013**

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Class: Thursday 2:00-5:00, Sociology Seminar Room (HSH, second floor)

Office Hours: Wednesday 3:20-5:00 or by appointment (HSH 207)

## **Course Description and Objectives**

This course provides an introduction to Science and Technology Studies (STS). STS is a rapidly growing and increasingly influential subfield that spans across the social sciences and the humanities. Methodological and substantive innovations from STS invigorate diverse subfields such as economic sociology, gender studies, political sociology, race and ethnicity, to name just a few.

STS explores the complex interaction between science, technology and society. Instead of asking whether particular scientific claims are true or false, or whether science is good or bad, STS researchers study how social, political, cultural, and material conditions shape scientific work and how science, in turn, shapes society. On the one hand, STS researchers explore the process through which scientists, and their allies, make facts. On the other hand, STS scholars examine how the facts and artifacts produced by scientists affect our life: how scientific knowledge changes our self-perception and how it affects social relations. Investigations along these lines call for a radical rethinking of the concept of “social construction” that is relevant for researchers in diverse fields.

This seminar will be concerned not only with scientists and their work but trace the development of the field and how it affects adjacent subfields. In the first part of the seminar, we will explore questions pertaining to the specificity of science as a social institution: the nature of scientific facts, the autonomy of the scientific field, and the possibility of objective inquiry. This part will help us understand the unique status of scientific facts, in comparison with other (religious, political, popular) truth claims. Equipped with a better understanding of the process of fact-making, the second part of the seminar focuses on studies that branch out of STS and influence other disciplines in the social sciences. The topics that we will explore in this half of the seminar include: human cognition, materiality and agency, expert knowledge and state building, economics and the shaping of the economy, simulations and war-making, race and ethnicity, and the production of kinds of people.

## **Requirements and Expectations**

Seminars work best when people are interested and are confident that they can speak up and contribute to a discussion. I take it for granted that you are interested in (at least most of) the topics we cover and expect that you attend each meeting, read the relevant material in advance, and participate actively in discussions. I will do my best to catalyze

discussions, clarify obscure and ambiguous points when needed, and sometimes flesh out links between readings and across fields.

In addition to attendance, reading and participation, you will be required to complete the following tasks:

- 1) Each week, after the second, one student will be required to prepare a brief memo. The memo should include quick overview of the themes covered in the readings and identify key concepts. In addition, the memo will include a list of outstanding questions for discussion. These memos will be emailed to the rest of the class by noon of Wednesday before we meet and serve as a basis for our discussion.
- 2) A final paper for this class which can take different forms. One option is to write a brief research paper. This option is relevant if you have some prior acquaintance with the field and, perhaps, an idea for study. Alternatively, you can write a research proposal or a grant application that will serve as a starting point for research beyond this seminar. Finally, you can also submit an analytical literature review that explores particular topic of interest to you (in a way that makes a meaningful connection to the materials we study). Either way, the goal of the final paper is to advance *your* studies. So, please consult me early on in the semester, and we will find the best way to advance your research. In the final meeting of the semester, you will present your work to the rest of the class.

The materials covered in this course are not easy and developing a research proposal on materials that you just now encounter is a daunting task. Please use my office hours as frequently as possible so that together we can make it happen.

### **Statement for Students with Disabilities**

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.–5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776.

### **Statement on Academic Integrity**

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. *Scampus*, the Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A: <http://www.usc.edu/dept/publications/SCAMPUS/gov/>. Students will be referred to the Office of Student Judicial Affairs and Community Standards for further

review, should there be any suspicion of academic dishonesty. The Review process can be found at: <http://www.usc.edu/student-affairs/SJACS/>.

## Readings

There are 6 required books for the course:

- Abu El-Haj, Nadia. 2012. *The Genealogical Science: The Search for Jewish Origins and the Politics of Epistemology*. Chicago: The University of Chicago Press.
- Biagioli, Mario. 1998. *The Science Studies Reader*. New York: Routledge.
- Eyal, Gil, Brendan Hart, Emine Onculer, Neta Oren, and Natasha Rossi. 2010. *The Autism Matrix*. Cambridge: Polity.
- Fourcade, Marion. 2009. *Economists and Societies: Discipline and Profession in the United States, Britain and France, 1890s-1990*. Princeton: Princeton University Press
- Latour, Bruno. 1987. *Science in Action* Cambridge: Harvard University Press.
- Kuhn, Thomas. 1962. *The Structure of Scientific Revolutions*. Chicago: Chicago University Press.

Other readings are available online either on JSTOR or on blackboard.

\* Indicates required readings. The other items are recommended.

## Course outline and readings

**Week 1** – January 17: Introduction—what is science and technology studies, why is it relevant for sociologists?

### **Part I. Mapping Science and Technology studies**

**Week 2** – January 24: Prehistory of science studies

\* Popper, Karl. 1959. *The Logic of Scientific Discovery*. London: Tavistock. (Selected chapters)

\* Merton, Robert. K. 1973. *The Sociology of Science: Theoretical and Empirical Investigations*. Chicago: The University of Chicago Press. Chapter 13 “The normative structure of science.” Pp. 267-278 and chapter 20 “The Mathew Effect in Science” Pp. 439-459.

\* Cole, Jonathan and Harriet Zuckerman 1985. “The emergence of scientific specialty: the self-exemplifying case of the sociology of science.” Pp. 139-174 in *The Idea of Social Structure: Papers in Honor of Robert K. Merton*, edited by Lewis Coser. New York: Harcourt Press.

Knorr-Cetina, Karin. 1991. "Merton's sociology of science: the first and the last sociology of science?" *Contemporary Sociology* 20(4): 522-526.

### **Week 3 – January 31: The Structure of Scientific Revolutions**

\* Kuhn, Thomas. 1962. *The Structure of Scientific Revolutions*. Chicago: Chicago University Press. (Use 2nd and 3rd editions with postscript)

Fuller, Steve. 1992. "Being there with Thomas Kuhn: A parable for postmodern times." *History and Theory* 31: 241-275.

Rouse, Joseph. 1987. "Science as Practice: Two readings of Thomas Kuhn." Pp. 26-40 in *Power and Knowledge: Towards a Political Philosophy of Science*, edited by Roger Rouse. Ithaca: Cornell University Press.

### **Week 4 – February 7: The Sociology of scientific knowledge (Edinburgh School)**

\* Bloor, David. 1976. *Knowledge and Social Imagery*. Chicago: University of Chicago Press. (Chapters 1-3).

\* Collins, Harry. 1985. *Changing Order: Replication and Induction in Scientific Practice*. London: Sage. (Chapters 2-4).

Bourdieu, Pierre. 1975. "The specificity of the scientific field and the social conditions of the progress of reason." *Social Science Information*, 14: 19-47 (also available in Biagioli's book).

### **Week 5 – February 14: Feminist Critique of Science**

\* Haraway, Donna J. 1996. "Modest witness: Feminist diffractions in science studies." Pp. 428-442, in *The Disunity of Science: Boundaries, Contexts, and Power*, edited by Peter Galison and David Stump. Stanford: Stanford University Press.

\* Haraway, Donna J. 1998. "Situated knowledge: the science question in Feminism and the privilege of partial perspective." Pp. 172-188 in *The Science Studies Reader*, edited by Mario Biagioli. London: Routledge.

\* Wylie, Alison. 1998. "The engendering of archeology: refiguring feminist science studies." Pp. 553-568 in *The Science Studies Reader*, edited by Mario Biagioli. London: Routledge.

### **Week 6 – February 21: Actor-Network Theory**

\* Latour, Bruno. (1987). *Science in Action*. Cambridge: Harvard University Press.

\* Latour, B. (1998). "Give me a laboratory and I will raise the world." Pp. 258-275 in *the Science Studies Reader*, edited by Mario Biagioli. New York: Routledge.

Latour, Bruno. And Steve, Woolgar. 1979. *Laboratory Life: The Social Construction of Scientific Facts*. London: Sage Publications.

Latour, Bruno. 1991. "Technology is society made durable." Pp. 103-131, In John Law (Ed.) *A Sociology of Monsters: Essays on Power, Technology and Domination*. London: Routledge.

Latour, Bruno. 1999. "One more turn after the social turn." Pp. 276-289 in *The Science Studies Reader*, edited by Mario Biagioli. London: Routledge.

Callon, Michel and Law, John. 1982. "On interests and their transformation: enrolment and counter-enrolment." *Social Studies of Science*, 12: 615-25.

Pickering, Andrew. 1998. "The mangle of practice: agency and emergence in the sociology of science." Pp. 372-393 in *The Science Studies Reader* edited by Mario Biagioli. New York: Routledge.

Collins, Harry and Steven Yearly. 1992. "Epistemological chicken." Pp. 301-326 in *Science as Practice and Culture* edited by Andrew Pickering. Chicago: Chicago University Press,

Callon, Michel and Bruno Latour. 1992. "Don't throw the baby out with the bath school!" Pp. 343-368 in *Science as Practice and Culture*, edited by Andrew Pickering. Chicago: Chicago University Press.

#### **Week 7 – February 28: Incommensurability, Translation, and Cooperation in Science**

\* Callon, Michel. (1999). "Some elements of sociology of translation: domestication of the scallops and the fishermen of St. Brieuc Bay." Pp. 67-83, in *The Science Studies Reader*, edited by Mario Biagioli. New York: Routledge.

\* Galison, Peter. (1999). "Trading zone: coordinating action and belief." Pp. 137-160 in *The Science Studies Reader*, edited by Mario Biagioli. New York: Routledge.

\* Star, Susan Leigh and Griesemer, R. James. (1989). "Institutional ecology, 'translations' and boundary objects: amateurs and professionals in Berkeley's Museum of Vertebrate Zoology, 1907-1939." *Social Studies of Science*, 19, 387-420 [also in Biagioli's reader].

Abbott, Andrew. 1995. "Things of Boundaries." *Social Research*, 62(4): 857-881.

Galison, Peter. 1996. "Computer simulations and the trading zone." Pp. 118-157 in *The Disunity of Science: Boundaries, Contexts, and Power* edited by Peter Galison and David J. Stump. Stanford: Stanford University Press.

Latour, Bruno. 1988. "The Prince for Machines as well as for Machinations." Pp. 20-43 in *Technology and Social Process*, edited by Brian. Elliott. Edinburgh: Edinburgh University Press.

Knorr Cetina, Karin 1997. "Sociality with objects: social relations in postsocial knowledge societies." *Theory, Culture, and Society*, 14(4): 1-30.

**Note: research proposal is due in class.**

## **Part II: STS in the Wild**

### **Week 8 –March 7: Distributed Cognition and Situated Action**

\* Suchman, Lucy. 2007. *Plan and Situated Actions: The Problem of Human-Machine Communication, Second Edition*. New York: Cambridge University Press (selection).

\* Huchins, Edward. 1995. "How a cockpit remembers its speeds." *Cognitive Science* 19, 265-288.

Huchins, Edward. 1995. *Cognition in the Wild*. Cambridge: MIT Press.

### **Week 9 – March 14: Rule of Experts: Science and Sovereign Action**

\* Mitchell, Timothy. 2002. *Rule of Experts: Egypt, Technopolitics, Modernity*. Berkeley: University of California Press. (Selected chapters)

\* Eyal, Gil. 2006. *The Disenchantment of the Orient: Expertise in Arab Affairs and the Israeli State*. Stanford: Stanford University Press. (Selected chapters)

Carroll, Patrick. 1996. "Science, Power, Bodies: The Mobilization of Nature as State Formation." *Journal of Historical Sociology*, 9(2): 139-167.

Edney, Mathew. 1997. *Mapping an Empire: The Geographical Construction of British India, 1765-1843*. Chicago: The University of Chicago Press.

Carroll, Patrick. 1996. *Science, Culture, and Modern State Formation*. Berkeley: University of California Press.

### **Week 10 – Spring Recess: no Class**

### **Week 11 – March 28: Delivering the Economy: Performativity and its limits**

\* Callon, Michel. 1998. "The Embeddedness of economic markets in economics." Pp. 1-57 in *Laws of the Market*, edited by Michel Callon. London: Routledge.

\* Bockman, Johanna. Eyal, Gil. (2002). "Eastern Europe as a laboratory for economic knowledge: the transnational roots of neoliberalism." *American Journal of Sociology*, 108:2: 310-352.

\* MacKenzie, Donald and Yuval Millo. 2003. "Constructing a market, performing theory: the historical sociology of a financial derivatives exchange." *American Journal of Sociology* 109:1, 107-145.

Callon, Michel, and Fabian Muniesa. 2005. "Economic markets as calculative collective devices." *Organization studies* 26(8): 1229-1250.

**Week 12** – April 4: Economics and the making of Global Markets

\* Fourcade, Marion. 2009. *Economists and Societies: Discipline and Profession in the United States, Britain and France, 1890s-1990*. Princeton: Princeton University Press.

\* Knorr Cetina, Karin and Urs Bruegger. 2002. "Global microstructures: the virtual societies of financial markets." *American Journal of Sociology* 107(4): 905-950.

**Week 13** – April 11: Simulations, Medicine, and War Making

\* Lenoir, Tim. 2000. "All but war is a simulation." *Configurations* 8, 289-335.

\* Irwin, Anne 2005. "The problem of reality in military training exercises." Pp. 93-133 in *New Directions in Military Sociology*, edited by Eric Quellet. Willowdale: de Sitter.

\* Helmreich, Stefan. 1998. *Silicon Second Nature: Culturing Artificial Life in a Digital World*. Berkeley: California University Press. (Selected chapters)

Brown, Sheila. 2003. "From the 'death of the real' to the reality of death: *How* did the Gulf war take place." *Journal of Crime, Conflict and the Media* 1(1): 55-71.

Edwards, Paul. 1996. *The Closed World: Computers and the Politics of Discourse in cold War America*. Cambridge: MIT Press.

Hayles, Katherine N. 1996. "Simulated nature and natural simulations: rethinking the relation between the beholder and the world." Pp. 409-426 in *Uncommon Ground: Rethinking the Human Place in Nature*, edited by William Cronon. New York: W.W. Norton & Company.

Hoffman, Steve G. 2006. "How to punch someone in the face and stay friends: an inductive theory of simulation." *Sociological Theory* 24, 170-193.

Hoffman, Steve G. 2007. "Simulation as a social process in organizations." *Sociology Compass* 1:2, 613-636.

**Week 14** – April 18: Making up people I.

\* Hacking, Ian. 1995. *Rewriting Soul: Multiple Personality Disorder and the Science of Memory*. Princeton: Princeton University Press. (Selected chapters)

\* Eyal, Gil, Brendan Hart, Emine Onculer, Neta Oren, and Natasha Rossi. 2010. *The Autism Matrix*. Cambridge: Polity.

**Week 15** – April 25: Making Up People II:

\* Abu El-Haj, Nadia. 2012. *The Genealogical Science: The Search for Jewish Origins and the Politics of Epistemology*. Chicago: The University of Chicago Press.

\*Navon, Daniel and Uri Shwed. 2012. "The chromosome 22q11.2 deletion: from the unification of biomedical fields to a new kind of genetic condition." *Social Science and Medicine*, 75(9): 1633-1641.

**Week 16** – April 25: Final presentations