

ANTHROPOLOGY 455/655: INTRODUCTION TO SCIENCE AND TECHNOLOGY STUDIES

Spring 2004
Room SH560
Wednesday 2-5

Instructors:

- Christopher Kelty ckelty@rice.edu, SH580

Introduction:

This class is an introduction to the field of “Science and Technology Studies.” The premise of this class is that science and technology are an integral part of contemporary societies — just as culture, politics and economics are built in to contemporary science. Science, technology and society may therefore be analyzed together, using methods and theories of the social sciences and humanities. Students will be introduced to the fundamentals of this interdisciplinary field by reading research and theoretical works drawn from anthropology, history, sociology and philosophy; some of the major innovations in the field will be studied in depth. The class will simultaneously analyze examples and problems that illustrate how to apply these works to the contemporary world. Examples will span a wide range of disciplines from computer science to biomedicine, but no prior scientific knowledge or technical expertise is assumed. The goal is for students to become skilled at analyzing science and technology from a social and cultural standpoint, and to cross some of the assumed and traditional boundaries between scientists, humanists and social scientists.

Open to advanced undergraduates and graduate students.

Requirements: Students are required to attend all classes, complete all reading assignments, and participate in discussion. Each student will be responsible for presenting on some portion of the readings and responding to those presented by others.

Required Texts (at the Bookstore):

- Bruno Latour, *Science in Action*, Cambridge MA: Harvard University Press, 1986.
- Steven Shapin and Simon Shaffer, *Leviathan and the Air Pump*, Princeton: Princeton University Press, 1985.
- Cori P. Hayden, *When Nature Goes Public: The Making and Unmaking of Bioprospecting in Mexico*, Princeton: Princeton University Press, 2003.
- Annemarie Mol *The Body Multiple: Ontology in Medical Practice*, Durham, N.C.: Duke University Press, 2002.
- Michel Callon, *Laws of the Market*, London: Blackwell, 1998.

1 Society in Science

- Jan. 14 Introduction
Case study, Intro.
- Jan. 21: Science Made and Science in the Making
Required:
1. Bruno Latour, *Science in Action*, Cambridge, MA: Harvard University Press, 1986.
Additional/Supplementary:
Bruno Latour, "Postmodern? No, simply amodern! Steps toward an anthropology of science," *Stud. Hist. Phil. Sci.* Vol. 21, No. 1 pp. 145-171.
Bruno Latour, "What Rules of Methods for the New Scientific Experiments", keynote speech, 13th Darmstadt Colloquium, March 2001 at <http://www.ensmp.fr/latour/artpop/P-95%20Darmstadt.html>
- Jan. 28: Actor Network Theory and Beyond
Required:
Annemarie Mol *The Body Multiple*
Additional/Supplementary:
<http://www.comp.lancs.ac.uk/sociology/ant.html>

2 Science in Society

- Feb. 4: Risks, expertise and credibility. Iceland as Example.
Required:
 - 1) Michael Fortun, "Mediated speculations in the genomics futures markets," *New Genetics and Society*, 20:139-156, 2001.
 - 2) Skuli Sigurdsson, "Yin-yang genetics, or the HSD deCODE controversy," *New Genetics and Society*, 20: 103-117, 2001.
 - 3) Michael Specter, "Decoding Iceland," 40-51, *New Yorker Magazine*, January 18, 1999.
 - 4) Paul Rabinow and Gisli Plásson "The Icelandic Genome Debate," *Trends in Biotechnology*, vol 19, no. 5.
 - 5) Paul Rabinow and Gisli Pálsson "The Human Genome Project in Iceland," *Anthropology Today*, vol. 15, no. 5.**Additional/Supplementary:**
Journals: *Social Studies of Science*, *Science Technology and Human Values*, *New Genetics and Society*

3 Technology in Science

- Feb 11: The three technologies of science and politics

Required:

1. Steven Shapin and Simon Shaffer, *Leviathan and the Air Pump*, Princeton: Princeton University Press, 1985 pp. 1-80.
2. Steven, Shapin, *The Social History of Truth: civility and science in seventeenth-century England*, Chicago : University of Chicago Press, 1994, Introduction, Chapter 1

Additional/Supplementary:

3. Bruno Latour “Drawing Things Together,” in Michael Lynch and Steve Woolgar ed. *Representation in Scientific Practice*, Cambridge, MA: MIT Press, 1990.

- Feb. 18 Literary Technologies I (representation)

Required:

1. Michael Lynch and JohnLaw, “Pictures, Texts, and Objects: The literary language game of bird-watching,” in *The Science Studies Reader*, ed. Mario Biagioli, New York: Routledge, 1999.
2. Hans-Jörg Rheinberger, “Graphemic Spaces” in *Inscribing Science*, ed Timothy Lenoir, Stanford, Stanford University Press, 1998.

Additional/Supplementary:

Peter Galison & Lorraine Daston, “The Image of Objectivity,” *Representations* 40 Fall 1992: 81-128.

Svetlana Alpers, *The art of describing : Dutch art in the seventeenth century*, Chicago : University of Chicago Press, 1983.

Edgerton, Samuel Y. *The Renaissance rediscovery of linear perspective*, New York : Basic Books, [1975].

Adrian Johns, *The Nature of Book*, Chicago, University of Chicago Press, 1998.

Journals: *Science in Context*, *Critical Inquiry*, *Common Knowledge*, *Studies in the History and Philosophy of Science*, *Representations*,

- Feb. 25 Literary Technologies II (narrative)

Required:

1. Gillian Beer, *Darwin's plots : evolutionary narrative in Darwin, George Eliot, and Nineteenth-Century fiction*, Boston : Routledge & Kegan Paul, 1983. Introduction and Chapters 1 and 2.

Additional/Supplementary:

Gillian Beer, *Open Fields: science in cultural encounter*, New York : Oxford University Press, 1996.

Serres, Michel, *Hermes—literature, science, philosophy*, edited by Josùe V. Harari and David F. Bell, Baltimore : Johns Hopkins University Press, 1982

Journal: *Configurations, Grey Room*

- Mar 3. “Spring” break.

- March 10. Social Technologies

Required:

1. Donna Haraway, “Teddy Bear Patriarchy” in *Primate visions : gender, race, and nature in the world of modern science*, New York:Routledge, 1989.

2. Donna Haraway “Modest_Witness@Second_Millennium.” in *Modest_Witness@Second_Millennium. FemaleMan(c)_Meets_OncoMouse(tm)*, New York: Routledge, 1997 pp. 23-49.

3. Weschler, Lawrence, *Mr. Wilson’s cabinet of wonder*, New York : Vintage Books, 1995.

(Shorter version: “Inhaling The Spore. Field trip to a museum of natural (un)history.” *Harper’s*. 289, no. 1732, (September 1994)

Additional/Supplementary:

Elizabeth Potter, *Gender and Boyle’s Gases*, Indiana University Press, 2001

- Mar 17: Material Technologies

Required:

Andrew Pickering, “Cybernetics and the Mangle: Ashby, Beer and Pask” at <http://www.soc.uiuc.edu/profile.asp?login=pickerin>

Lydia H. Liu, “Robinson Crusoe’s Earthenware Pot,” *Critical Inquiry* 25 Summer 1999:728-757.

Stefan Helmreich, “Trees and seas of information: Alien kinship and the biopolitics of gene transfer in marine biology and biotechnology”, *American Ethnologist*, 30(3) Aug. 2003.

Additional/Supplementary:

Galison, Peter, *Image and logic : a material culture of microphysics*, Chicago : University of Chicago Press, 1997

Kohler, Robert *Landscapes and labscapes : exploring the lab-field border in biology*, Chicago : University of Chicago Press, 2002

Kohler, Robert, *Lords of the fly : Drosophila genetics and the experimental life*, Chicago : University of Chicago Press, 1994

Shapin and Schaffer, *Leviathan and the Air Pump*, Chapter 6.

John Law *Aircraft Stories*, Durham : Duke University Press, 2002.

4 Order and Disorder

- March 24. Science and Political-Economic Orders

Required:

1. Shapin and Schaffer, *Leviathan and the Air Pump*. chs. 3 and 7-8. (Chapter 4 optional).
2. Introduction, *Science bought and sold : essays in the economics of science*, ed. Philip Mirowski and Esther-Mirjam Sent, Chicago, IL : University of Chicago Press, 2002

Optional:

Philip Mirowski, *Machine Dreams: How Economics Became a Cyborg Science*, Cambridge University Press, 2002. Chapter 4, “The Military, The Scientists and the Revised Rules of the Game”

- March 31: “Calculative Agencies:” An approach to studying markets and economists

1. Michel Callon, *Laws of the Market*, London: Blackwell, 1998. Esp. Introduction, Zelizer, Abolafia, Miller, Dumez and Jeunmaitre.

- April 7: Studies of Finance as Science Studies/Anthropology

1. Donald MacKenzie “Physics and Finance: S-Terms and Modern Finance as a Topic for Science Studies,” *Science, Technology, and Human Values* 26 (2001): 115-144.
2. Donald MacKenzie, “Long-Term Capital Management and the Sociology of Arbitrage,” *Economy and Society* 32 (2003): 349-380.
2. Caitlin Zaloom, “Ambiguous numbers: trading technologies and interpretation in financial markets” *American Ethnologist*, 30(2) May 2003. *Economy and Society*

- April 14: Case Study– bioprospecting in Mexico

Required:

Cori Hayden *When Nature Goes Public*

- April 21 Cont’d/Conclusion

Other Important Information:

Incompletes are not given.

Honor Code issues: For the assignments, group investigation and research is encouraged, but each assignment handed in must be the student’s own original work. In the case of group assignments, division of labor will be up to the students, and any necessary honor code guidelines will be provided.

Any student with a documented disability needing academic adjustments or accommodations is requested to speak with the instructor during the first two weeks of class. All discussions will remain confidential. Students with disabilities will need to also contact Disability Support Services in the Ley Student Center.