

ANTH 257

Cultures of Science, Science as Culture

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Office Hours:
Wednesdays 5-8 PM

Course Description:

Since the late 1980s, the study of science and technology on the part of social scientists has slowly been gathering momentum. Approaches have varied, from the history and philosophy of science to the empirical studies of sociologists and anthropologists, but their concerns are largely shared: The social construction of objectivity and rationality, social divisions in the practice and foundations of science, and the roles of non-human and material actors in science and society. However, the question might be asked: What does anthropology (and ethnography in particular) have to add to these debates? What makes the *anthropology* of science particular, and how has this particularity been informed by the discipline of anthropology? This course will consider a number of early and contemporary ethnographies of science, medicine and technology alongside contributions by philosophers of science in order to pose this question and seek answers.

Our guideposts in the consideration of these disciplinary questions will be twofold: How do cultural expectations shape the pursuit and implementation of science?, and How do anthropological methods test and get tested by the social structure of science? To these ends, we will consider a number of ethnographies that focus on the intersection of culture, society, science and nature, from contemporary bioprospecting and the negotiation of indigenous intellectual rights to the management of post-testing nuclear environments in the U.S. Moreover, we will consider a number of ethnographies which push at traditional anthropological methodologies of fixed-location research; the rise of multi-sited ethnography has dovetailed with the anthropological study of science, and we will explore these overlaps through studies of genetic research and testing, the spread of medical knowledge through society, and the roles of scientists in society.

Please note: The course is by no means a comprehensive introduction to the field of Science and Technology Studies (STS). Rather, as mentioned in the description, its focus is primarily the anthropology of science. If students are seeking a course in STS that addresses more fully the contributions of the history and philosophy of science, please seek out courses offered by Donna Haraway (History of Consciousness) and Karen Barad (Feminist Studies).

Reading List:

Required texts and the course pack are available at the Literary Guillotine (204 Locust St, Santa Cruz). Readings from the course pack are noted in the syllabus with [CP] and are available through ERez; readings noted with [AS] are available through Anthrosource <<http://oca.ucsc.edu/login?url=http://www.anthrosource.net/>>.

- Hayden, Cori. 2003. *When Nature Goes Public: The Making and Un-Making of Bioprospecting in Mexico*. Princeton: Princeton University Press.
- Helmreich, Stefan. 2009. *Alien Ocean: Anthropological Voyages in Microbial Seas*. Berkeley: University of California Press.
- Knorr-Cetina, Karin. 1999. *Epistemic Cultures: How the Sciences Make Knowledge*. Cambridge: Harvard University Press.
- Latour, Bruno. 1987. *Science in Action: How to Follow Scientists and Engineers Through Society*. Cambridge, MA: Harvard University Press.
- Latour, Bruno, and Steve Woolgar. 1986 [1979]. *Laboratory Life: The Construction of Scientific Facts*. Princeton, NJ: Princeton University Press.
- Lowe, Celia. 2006. *Wild Profusion: Biodiversity Conservation in an Indonesian Archipelago*. Princeton: Princeton University Press.
- Martin, Emily. 1994. *Flexible Bodies: Tracking Immunity in American Culture -- From the Days of Polio to the Age of AIDS*. Boston: Beacon.
- Masco, Joseph. 2006. *The Nuclear Borderlands: The Manhattan Project in Post-Cold War New Mexico*. Princeton: Princeton University Press.
- Rajan, Kaushik Sunder. 2006. *Biocapital: The Constitution of Postgenomic Life*. Durham, NC: Duke University Press.
- Rapp, Rayna. 1999. *Testing Women, Testing the Fetus: A Social History of Amniocentesis in America*. New York: Routledge.
- Taussig, Karen-Sue. 2008. *Ordinary Genomes: Normalizing the Future through Genetic Research and Practice*. Durham: Duke University Press.
- Traweek, Sharon. 1988. *Beamtimes and Lifetimes: The World of High Energy Physicists*. Cambridge, MA: Harvard University Press.

Grading & Assignments:

Attendance, Participation & Presentation (25%) – Students are expected to attend all classes with the required material having been read. Two absences are allowed; each absence beyond the second will reduce the student's final grade by 5%. Students are required to bring 2 discussion questions to class for each meeting. These discussion questions must be synthetic and bring together concerns between disparate texts. Each week's worth of discussion questions is worth 2% (18% total) and must be turned in at the beginning of each class period. Additionally, students will lead class discussions of the texts (in pairs or trios as determined by enrollment, and with each group leading one week's discussion); this presentation is worth 7% and is treated as pass/fail. These presentations should move beyond summaries and pose discussion questions, review critiques and compare the week's material with previous texts considered in class.

Response Paper (25%) – Students will prepare a 5-7 page typed response paper to the first section's readings. The response papers should identify major themes and trends in the readings and offer a brief argument as to the veracity of these concepts. In other words, your response papers should take the form of a brief, *theoretically-informed* critique of the reading materials; your papers must have a thesis which you defend.

Final Paper (50% total, detailed in class schedule) – Students have three options for their final paper in this course, as outlined below.

Original Research Paper, Archival or Ethnographic: Drawing on research conducted over the course of the semester, based on archival (primary) sources or ethnographic & interview data, students are expected to turn in a 25-30 page (excluding bibliography) final paper. The paper must relate to the content of the course; its focus is left to the student's determination, but must be approved by the professor. Additionally, the paper must have a theoretically-informed argument which is defended by the paper's contents.

Annotated Bibliography: Based on a topic of the student's determination – and approved by the professor – an annotated bibliography of 35-50 items with a 12-16 page introduction may be prepared. Each item entry must be 300-500 words in length, and items may include books, chapters in edited volumes, journal articles, films & documentaries, and other primary and secondary sources (with the exclusion of encyclopedia entries, websites, and other synthetic resources). The introduction must identify dominant and minor elements in the literature, and is expected to serve as a theoretically-informed literature review.

Revised Research Paper: If the student has previously prepared a paper for another class (not coextensive with this semester), she or he may revise that paper as a final paper for this class. The paper must relate to the contents of this course, and the original version of the paper (with comments from the previously reviewing instructor) must be turned in when final paper abstracts are due. The page count for the revised version of the paper is +15-20 pages (excluding bibliography), with a ceiling of 40 pages (e.g. if the paper was previously 15 pages, its final version for this class must be 30-35 pages in length).

Policies:

No late work will be accepted for credit. All assignments must be turned in to receive a passing grade in the course.

Academic Integrity – Plagiarism of any sort will not be tolerated. Evidence of plagiarism will result in an immediate failing grade in the course and actions as dictated by university policy regarding academic integrity on graduate students. Please see <<http://library.ucsc.edu/science/instruction/CitingSources.pdf>> if you have any questions about what qualifies as plagiarism and strategies for avoiding such. For a description of the plagiarism review process, see <http://www.ucsc.edu/academics/academic_integrity/graduate_students/>.

Style Matters: All submitted work should follow the guidelines set forth in the American Anthropological Association's style guide (available at aaanet.org). All papers should be double-spaced, 12 point font, in Times New Roman, with 1 inch margins on all sides, and page numbers. Failure to meet these standards will result in a reduced grade.

Contacting Me: I **only** check my email between 8-11 AM on weekday mornings and during my office hours. I will always respond to emails within 24 hours, except for emails received on Fridays (which will be responded to on the following Monday). If you plan to stop by my office hours, please contact me ahead of time, either by email (mwolfmey@ucsc.edu) or at my office telephone number (458-2365).

Class Schedule:

Week One: Course Introduction

Discussion of Syllabus

Fischer, Michael M. J. 2007. Four Genealogies for a Recombinant Anthropology of Science and Technology. *Cultural Anthropology* 22 (4):539-615. [AS]

Franklin, Sarah. 1995. Science as Culture, Cultures of Science. *Annual Review of Anthropology* 24:163-184. [CP]

Week Two: Knowledge Cultures, Knowledge Politics

Keane, Webb. 2003. Semiotics and the Social Analysis of Material Things. *Language & Communication* 23:409-425. [CP]

Latour, Bruno, and Steve Woolgar. 1986 [1979]. *Laboratory Life: The Construction of Scientific Facts*. Princeton, NJ: Princeton University Press.

Latour, Bruno. 1999 [1993]. Give Me a Laboratory and I Will Raise the World. In *The Science Studies Reader*, edited by M. Biagioli. New York: Routledge. [CP]

Lynch, Michael. 1985. *Art and Artifact in Laboratory Science: A Study of Shop Work and Shop Talk in a Research Laboratory*. Boston: Routledge. [CP]

Week Three: Science, Facts & Fictions

Final Paper Abstract Due (5% of Final Paper Grade)

Knorr-Cetina, Karin. 1999. *Epistemic Cultures: How the Sciences Make Knowledge*. Cambridge: Harvard University Press.

Poovey, Mary. 1998. *A History of the Modern Fact: Problems of Knowledge in the Sciences of Wealth and Society*. Chicago: University of Chicago Press. [CP]

Traweek, Sharon. 1988. *Beamtimes and Lifetimes: The World of High Energy Physicists*. Cambridge, MA: Harvard University Press.

Week Four: Scientists at Work, Science as Society

Final Paper Bibliography Due (5% of Final Paper Grade)

Callon, Michel. 1986. Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St. Brieuc Bay. In *Power, Action, and Belief: A New Sociology of Knowledge*, edited by J. Law. New York: Routledge. [CP]

Latour, Bruno. 1987. *Science in Action: How to Follow Scientists and Engineers Through Society*. Cambridge, MA: Harvard University Press.

Martin, Emily. 1997. Anthropology and the Cultural Study of Science: From Citadels to String Figures. In *Anthropological Locations: Boundaries and Grounds of a Field Science*, edited by A. Gupta and J. Ferguson. Berkeley: University of California. [CP]

Week Five: Science, Medicine & Society

Final Paper Outline Due (5% of Final Paper Grade)

- Martin, Emily. 1994. *Flexible Bodies: Tracking Immunity in American Culture -- From the Days of Polio to the Age of AIDS*. Boston: Beacon.
- Rapp, Rayna. 1999. *Testing Women, Testing the Fetus: A Social History of Amniocentesis in America*. New York: Routledge.
- Rapp, Rayna, and Faye Ginsburg. 2001. Enabling Disability: Rewriting Kinship, Reimagining Citizenship. *Public Culture* 13 (3):533-556. [CP]

Week Six: Science & Normalization

- Canguilhem, Georges. 1991 [1966]. *The Normal and the Pathological*. Translated by C. R. Fawcett. New York: Zone Books. [CP]
- Heath, Deborah, Rayna Rapp, and Karen-Sue Taussig. 2005. Genetic Citizenship. In *A Companion to the Anthropology of Politics*, edited by D. Nugent and J. Vincent. Malden, MA: Blackwell Publishers. [CP]
- Rapp, Rayna, Deborah Heath, and Karen-Sue Taussig. 2001. Genealogical Dis-Ease: Where Hereditary Abnormality, Biomedical Explanation, and Family Responsibility Meet. In *Relative Values: Reconfiguring Kinship Studies*, edited by S. Franklin and S. McKinnon. Durham: Duke University Press. [CP]
- Taussig, Karen-Sue. 2008. *Ordinary Genomes: Normalizing the Future through Genetic Research and Practice*. Durham: Duke University Press.

Week Seven: Science & Colonialism

Response Paper Due

- Arnold, David. 1993. *Colonizing the Body: State Medicine and Epidemic Disease in Nineteenth-Century India*. Berkeley: University of California Press. [CP]
- Mitchell, Timothy. 2002. *Rule of Experts: Egypt, Techno-Politics, Modernity*. Berkeley: University of California Press. [CP]
- Prakash, Gyan. 1992. Science "Gone Native" in Colonial India. *Representations* 40:153-178. [CP]
- Rajan, Kaushik Sunder. 2006. *Biocapital: The Constitution of Postgenomic Life*. Durham, NC: Duke University Press.

Week Eight: Science, Collaboration, & Capital

- Hayden, Cori. 2003. *When Nature Goes Public: The Making and Un-Making of Bioprospecting in Mexico*. Princeton: Princeton University Press.
- Lowe, Celia. 2006. *Wild Profusion: Biodiversity Conservation in an Indonesian Archipelago*. Princeton: Princeton University Press.
- Strathern, Marilyn. 2006. Intellectual Property and Rights: An Anthropological Perspective. In *Handbook of Material Culture*, edited by C. Tilley, W. Keane, S. Kuechler-Fogden and M. Rowlands. Thousand Oaks: Sage. [CP]

Week Nine: Science, Animals & Life Itself

Rough Draft of Final Paper Due

Feely-Harnik, Gillian. 2001. The Ethnography of Creation: Lewis Henry Morgan and the American Beaver. In *Relative Values: Reconfiguring Kinship Studies*, edited by S. Franklin and S. McKinnon. Durham: Duke University Press. [CP]

Feely-Harnik, Gillian. 2007. "An Experiment on a Gigantic Scale": Darwin and the Domestication of Pigeons. In *Where the Wild Things are Now: Domestication Reconsidered*, edited by M. Mullin and R. Cassidy. New York: Berg. [CP]

Helmreich, Stefan. 2009. *Alien Ocean: Anthropological Voyages in Microbial Seas*. Berkeley: University of California Press.

Week Ten: Crises of Science

Peer Reviews Due (10% of Final Paper Grade)

Masco, Joseph. 2006. *The Nuclear Borderlands: The Manhattan Project in Post-Cold War New Mexico*. Princeton: Princeton University Press.

Final Exam Week

Final Paper Due (25% of Final Paper Grade) by Midnight of Final Exam Day