

ESPM 256: Science, Technology & the Politics of Nature

Spring 2011
Wednesdays 2-5
207 Mulford Hall
3 Units

INSTRUCTOR

David Winickoff, Associate Professor of Bioethics and Society
Office Hours: Thursdays 3:45 – 5:30, or by appointment
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COURSE DESCRIPTION

This graduate seminar will introduce the methods and theories of Science and Technology Studies (STS) in order to explore the relationship of science, technology, law and politics in the domains of environment and health. The course will focus some attention on the tension between technocracy and democracy in natural resource law and environmental regulation, and the role of biotechnology in reshaping the natural and political order. The course will equip graduate students in the social sciences, law, life sciences and public policy with theoretical and practical tools for analyzing complex problems at the science, technology and society interface.

REQUIRED BOOKS

Available at the Cal Student Bookstore
These should also be on 2-hour reserve at Biosciences Library

Sheila Jasanoff, *The Fifth Branch* (Harvard 1990)

James Scott, *Seeing Like a State* (Yale 1998)

RECOMMENDED BOOKS

Michael Lynch, Olga Amsterdamska, and Ed Hackett (Eds.) *The Handbook of Science and Technology Studies* (Cambridge, MA: MIT Press, 2008).

Mario Biagioli, *The Science Studies Reader*

Sheila Jasanoff (Ed.), *States of Knowledge: The Co-production of Science and Social Order* (Routledge 2004)

Ian Hacking, *The Social Construction of What?* (Harvard 2000)

REQUIRED COURSE READER:

Will be available at Ned's Bookstore on Bancroft or online at www.odinreaders.com

***** You are responsible for printing out and bringing to class all online materials. *****

GRADING

Weekly Response Papers (1 pg. each)	15%
Lead class session (first hour)	10%
Participation in class discussion	15%
Written Paper	60%

Written Paper Option I: Two Short Papers (limit 8-10 pages)

In this option, one paper will be due the week before Spring Break, the other on the last day of class. The two papers should engage directly with critical questions and themes from the readings in the course. Papers may wish to address in a more extended way, questions posed for each week of reading, and may focus on a week of particular interest, or of particular relevance to your planned dissertation. Or, papers may compare across two or more weeks of reading. You may also take an author from the course that seems most interesting, and do a paper on that author's larger body of work. For instance, a paper might focus on the writing of Bruno Latour, and address his works from the course as well as other books and articles he has written. I'm pretty flexible here. First paper due on March 16. Second paper due on April 27. If no paper is turned in before Spring Break, this option is no longer available.

Written Paper Option II: Long Paper (limit 20 pages)

This option requires you to analyze a problem, case or controversy in the field of environment or health (broadly construed) where: science/technical knowledge has become publicly contested; where it is likely to become so; where experts play a central role, but may have come under fire; where science must interact closely policy makers; where there are tacit value conflicts underlying what seem to be technical issues, or technoscience is exerting tacit governance of various kinds. For example, you might choose the BP Spill and look at the technical reports in a social context; analyze the politics and impact of the recent report on synthetic biology by the President's bioethics commission; or proposals to govern of new technology of industry (e.g., synbio, geoengineering, direct-to-consumer genetics, etc.) Start narrow with the conflict, narrating it in detail, and work outwards in your analysis. Use the work we have studied to illuminate the controversy, and explore whether the controversy helps us understand (or develop) the theory. I encourage you to select cases that are relevant to your dissertation projects, but this is not required.

I will ask for a title, an abstract, and a first draft at different points in the semester. The final paper is due on April 27.

KEY DATES

- March 9** Long Paper titles due March 9
March 16 Short Paper #1 due
March 30 Long Paper abstract and outline due
April 13 First draft of Long Paper due
April 27 Oral presentations, Long Paper due, Short Paper #2

Jan. 19

Intro and Overview

- 1.1 Tim Loughheed, "Outside Looking In: Understanding the Role of Science in Regulation," *Environmental Health Perspectives* 117;3 (2009): A105-A110
- 1.2 Alvin Weinberg, "Science and Transcience," *Minerva*, 10;2 (1972): 209- 222.

I. FOUNDATIONS: NATURE, SCIENCE, POWER

Jan. 26

Making Modern Science

- 2.1 Bruno Latour, *Science in Action* (Harvard 1988), 1-100
- 2.2 S. Shapin and S. Schaffer, *Leviathan and the Air-Pump* (Princeton: Princeton University Press, 1985), Ch. 1 "Understanding Experiment," 3-21, Ch. 2 "Seeing and Believing" 22-79

Recommended:

Raymond Williams, selections from *Keywords*, 2nd ed., (NY: Oxford U.P., 1985 [1976]) "Nature," pp. 219-224, "Science," pp. 276-80; "Technology," pp. 315-16.

Feb. 2

Getting Real: Objectivity and the Representation of Nature

- 3.1 William Cronon, "A Place for Stories," *Journal of American History* 78;4 (1992): 1347-76
- 3.2 Ian Hacking, *Social Construction of What?* (end of Ch. 2, Ch. 3. "What About the Natural Sciences?"), 59-99

- 3.3 Donna Haraway, "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," *Feminist Studies* 14;3 (1988): 575-599
- 3.4 David Demeritt, "The Construction of Global Warming" *Annals of the Association of American Geographers*, 91;2 (2001): 307-337

Recommended:

Franklin Ginn and David Demeritt, "Nature: A Contested Concept" (book chapter)
 L. Daston, "Objectivity and the Escape from Perspective," reprinted in Biagioli, *The Science Studies Reader*

<p>Feb. 9 Natural Law</p>

- 4.1 L. Daston and R. Vidal, "Introduction," in L. Daston and F. Vidal eds., *The Moral Authority of Nature* (Chicago 2004): 1-20
- 4.2 H.L.A. Hart, *The Concept of Law*, "Natural Law," 185-193
- 4.3 John Locke, *Second Treatise of Government*, Bk. 2, Ch. 2, "Of the State of Nature" [website]
- 4.4 Helmut Puff, "Nature on Trial: Acts 'Against Nature' in the Law Courts of Early Modern Germany and Switzerland," in L. Daston and F. Vidal eds., *The Moral Authority of Nature* (Chicago 2004): 232-253.
- 4.5 Francis Fukuyama, *Our Posthuman Future*, Ch.7, "Human Rights," 105-128.

<p>Feb. 16 Ruling Categories and Kinds</p>
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- 5.1 Ian Hacking, *Social Construction of What*, (Ch. 5 "Kind-Making: The Case of Child Abuse"): 125-162
- 5.2 M. Foucault, "Preface" in *The Order of Things: An Archaeology of the Human Sciences*, (Routledge 2002) xv-xx.
- 5.3 G.C. Bowker and S.L. Star, *Sorting Things Out: Classification and Its Consequences* (MIT 2000), Ch. 6 ("The Case of Race Classification and Reclassification Under Apartheid") 195-225.
- 5.4 James Scott, *Seeing Like A State*, 11-83

Recommended:

Feb. 23

Nature/Technoscience Hybridity

- 6.1 Donna Harraway, “A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century,” in *Simians, Cyborgs and Women: The Reinvention of Nature* (Routledge 1991): 149-181.
- 6.2 B. Latour, *We Have Never Been Modern* (Harvard University 1993), Chs. 1-2, 1-45. [Google online]
- 6.3 Sheila Jasanoff, “Ordering Knowledge, Ordering Society, in Jasanoff ed., *States of Knowledge: The Co-Production of Science and Social Order* (Routledge 2005): 13-45.

Recommended:

Richard White, *The Organic Machine: The Remaking of the Columbia River* (1995), Ch. 2, “Putting the River to Work,” pp. 30-58.

Paul Rabinow, “From Artificiality to Enlightenment”

N. Katherine Hayles, *How We Became Posthuman*

March 2

Biopower

- 7.1 Foucault, “Biopower,” in *Foucault Reader*, ed. Paul Rabinow, 258-289
- 7.2 Warwick Anderson, *Colonial Pathologies* (Duke 2006), Ch. 1-2, [“American Military Medicine Faces West” and “The Military Basis of Colonial Health”] 12-73
- 7.3 James Scott, *Seeing Like a State*, Ch 4, “The High-Modernist City,” 103-146; Ch. 8, “Taming Nature: An Agriculture of Legibility and Simplicity,” 262-306
- 7.4 Paul Rabinow and Nicolas Rose, “Thoughts in the Concept of Biopower Today” (Working Paper, 2003).

Recommended:

Stephen Legg, “Foucault’s Population Geographies: Classifications, Biopolitics and Government Spaces,” *Population, Space and Place* 11: 137-156 (2005)

II. REGULATING NATURE

March 9

Environmental Controversies

Long Paper titles due

- 8.1 Dorothy Nelkin, "Science Controversies: The Dynamics of Public Disputes in the United States," *Handbook of Science and Technology Studies* (Sage 1995), 444-456
- 8.2 M. Callon, "Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St. Brieuc Bay," in J. Law, ed., *Power, Action, and Belief: A New Sociology of Knowledge?* (Routledge 1986) 196-233
- 8.3 T. Porter, *Trust in Numbers* (Princeton 1995), Ch. 7 ("U.S. Army Engineers and the Rise of Cost-Benefit Analysis"), 148-189
- 8.4 Sheila Jasanoff, *Science at the Bar* (Harvard 1996), (Ch. 6 "Toxic Torts and the Politics of Causation"): 114-137
- 8.5 Justin Gillis and Leslie Kaufman, Oil Spill Calculations Stir Debate on Damage, *NY Times* (August 4, 2010) <<http://www.nytimes.com/2010/08/05/us/05oil.html>>

Recommended:

Daniel Sarewitz, "How Science Makes Environmental Controversies Worse"

March 16

Experts in the Administrative Apparatus

Short Paper #1 due

- 9.1 Sheila Jasanoff, *The Fifth Branch: Science Advisors as Policymakers* (1990) [selections]
- 9.2 Mark Brown, "Three Ways to Politicize Bioethics," *The American Journal of Bioethics*, 9; 2: 43-54

March 23

***** Spring Break *****

March 30

Publics and Public Evidence

Long Paper abstracts and outline

- 10.1 Clark A. Miller, “New Civic Epistemologies of Quantification,” *Science Technology Human Values* 30 (2005): 403-432
- 10.2 Sheila Jasanoff, *Designs on Nature* (Princeton 2005), Ch 10 “Civic Epistemology” 247-271
- 10.3 Steve Rayner, “Democracy in the age of assessment: reflections on the roles of expertise and democracy in public-sector decision making,” *Science and Public Policy* 30;3 (2003): 163-170
- 10.4 Frank N. Laird, “Learning Contested Lessons: Participation Equity and Electric Utility Regulation,” *Review of Policy Research* 25;5 (2008): 429-448

Recommended:

Frank Fischer, *Citizens, Experts, and the Environment* (Duke 2003): 193-241

<p>April 6</p>

<p>Risk Discourse: Reason, Power, Culture</p>

- 11.1 Michael Thompson and Steve Rayner, “Risk and Governance Part I: The Discourses of Climate Change,” *Government and Opposition* 33;2: 139–166 (1998).
- 11.2 Cass Sunstein, *Risk and Reason: Safety, Law and the Environment* (Cambridge 2002) (Ch. 5 “Reducing Risks Rationally”): 99-132
- 11.3 Silvio O. Funtowicz and Jerome R. Ravetz, “Science for the Post-Normal Age,” *Futures* 25;7 (1993): 739-755
- 11.4 Daniel A. Farber (2009) “Confronting Uncertainty under NEPA,” *Issues in Legal Scholarship* 8;3 (2009) Available at: <http://www.bepress.com/ils/vol8/iss3/art3>

Recommended:

National Research Council, *Understanding Risk: Informing Decisions in a Democratic Society* (1996), Appendix A (167-198). Free online text at <http://www.nap.edu/catalog.php?record_id=5138#toc>

Wildavsky and Douglas, *Risk and Culture*

Alan Irwin, “The Risk Society Thesis,” in *Sociology and the Environment* (Polity 2001).

Rayner, “A cultural perspective on the structure and implementation of global environmental agreements”

Foucault, “Governmentality”

<p>April 13</p>

<p>Law, Science and Natural Resources: Keeping Out and Keeping In</p>

Long paper draft due

- 12.1 Holly Doremus, Listing Decisions Under the Endangered Species Act: Why Better Science Isn't Always Better Policy 75 Wash. U. L.Q. 1029.
<http://lawreview.wustl.edu/inprint/75-3/753-1.html>
- 12.2 *Western Watersheds Project v. U.S. Forest Service* (D. Idaho, Dec. 4, 2007)
- 12.3 Charis Thompson, "Co-producing CITES and the African Elephant," Ch. 4 in S. Jasanoff, ed., *States of Knowledge*: 67-86.
- 12.4 David Delaney, *Law and Nature* (Cambridge 2003), (Ch. 8 "Wild Justice and the Endangerment of Meaning: Law and Endangered Species"): 192-212

April 20

Engineering Economy, Ecology

- 13.1 David Ekbladh, "Mr. TVA: Grass-Roots Development, David Lilienthal, and the Rise and Fall of the Tennessee Valley Authority as a Symbol for U.S. Overseas Development, 1933-1973," *Diplomatic History* 26;3 (2002): 335-374
- 13.2 M. Goldman, "The Birth of a Discipline: Producing Authoritative Green Knowledge, World Bank Style," *Ethnography* 2;2 (2001): 191-217
- 13.3 Rebecca Lave et al., "Privatizing Stream Restoration in the US," *Social Studies of Science* 40;5 (2010): 677-703
- 13.4 Richard Norgaard, "Ecosystem Services: From Eye-Opening Metaphor to Complexity Blinder," *Ecological Economics* 69 (2010): 1219-1227

April 27

Presentations

Oral presentations due

Short paper #2 due

Long paper due