

Classroom #6

Tuesday 4-7pm &
Thursday 3.50-6pm

Introduction to Science, Technology, and Society

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Seminar Description

This seminar features intensive reading and analysis of recent works in historical and social studies of science and technology. It is intended to introduce students to a sample of current topics and methods, and to prepare them for graduate work in the field of science and technology studies. Classes will take place on Tuesdays from 6 to 9pm and Thursdays from 3.30 to 6pm. The schedule has been designed to create a series of staggered sessions (see the class schedule below). The language of the class is English.

Seminar Requirements

All students will be responsible for doing the assigned reading before each session of the seminar. A personal response paper of 1 to 5 pages is expected every week where the class meets on the day before the seminar: you are free to organize it however you want (either weaving the different approaches of the books or focusing more centrally on one question, possibly tying it to questions you tackle in your research). I will not necessarily read your response papers, but I might to check how you engage the readings in writing. You want to think of these response papers as readings notes, ways to keep track of your encounters with these books and articles. In addition, students will take turns leading a session of the seminar by presenting more background on readings (including the author's trajectory and the book's reception), and presenting questions for discussion based on book reviews and other relevant sources.

There are also two more formal writing assignments: a book review (4-5 double-spaced pages) of a book from a designated list (due on **October 18 2012**), and a final essay (15-20 double-spaced pages, due on **December 20 2012**). Both assignments will be sent to professor Lepinay, either by email or by leaving a physical copy in his office. It is important to communicate early on with professor Lepinay about the books and topics you want to cover. For the final essay, students could select at least three books from the syllabus, read other works by the same authors along with contrasting works on the same topic by other authors, and situate the main books within the wider literature.

Given the discontinuous schedule and in the spirit of articulating the readings to the sense of observation and description that we have to cultivate, students will have to write a short critical note (500 to 1000 words) on a blog every week the class does not

formally meet. These notes will be shared with the class as a whole. They are meant to force you to engage the daily and the mundane. They are also useful exercises to make explicit your understanding – or lack thereof – of the texts we read.

One of the key skills that STS scholars must cultivate is the ability to read large amounts of material quickly. This seminar is designed to help you practice this crucial skill. Reading loads will be heavy for each session. You should practice ‘active reading’ (or ‘aggressive skimming’). As you read, it will be helpful to keep several questions in mind: Can you summarize the author’s main thesis or argument? What kinds of examples are brought forth to bolster the main thesis? Upon what kinds of sources does the author draw? How does the main argument fit into the broader literature on the subject or within the field? Reading to answer these questions will be more important than dwelling on particular details within a given study.

Class participation is not an option. You can speak in Russian at first if you do not feel confident and comfortable enough. The joint objective of the course - along with understanding the readings and using them fruitfully towards your own research – is to get all of you up to speed with academic English.

Seminar Schedule

04/09 - introduction – Map of STS (England/France-Netherlands/US)

06/09 - Classic Approaches in Philosophy and History of Science

Popper, Karl. 1934. *The Logic of Scientific Discovery*. Excerpts (“Scientific Method,” “Falsification versus Conventionalism.” In *The Philosophy of Science*, ed. R. Boyd, P. Gasper, and J.D. Trout. Cambridge: MIT Press, 1991. pp. 99-122.

Fleck, Ludwig. 1935. Epistemological conclusions from the established history of a concept. In *Genesis and Development of a Scientific Fact*. Chicago: University of Chicago Press, 1981. pp. xxvii-xxviii, 1-51.

Merton, Robert K. The ethos of science (1942), The reward system of science (1957), and The Matthew Effect, II (1988). In *On Social Structure and Science* ed. P. Sztompka. Chicago: University of Chicago Press, 1996. pp. 267-276, 286-304, 318-336.

Kuhn, Thomas. 1962. The nature and necessity of scientific revolutions. In *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press. pp. 92- 110.

Feyerabend, Paul. 1975. *Against Method: Outline of an Anarchistic Theory of Knowledge*. New York: Verso, 1978. pp. vii-xiii, 1-13.

11/09 – The Strong Program in the Sociology of Knowledge (SSK)

Bloor, David. 1976. The Strong Programme in the sociology of knowledge. In *Knowledge and Social Imagery*, 2nd ed. Chicago: University of Chicago Press, 1991. pp. 3-23.

Collins, Harry M. 1985. *Changing Order: Replication and Induction in Scientific Practice*. London: Sage. Chapters 1-3.

Shapin, Steven. 1979. The politics of observation: cerebral anatomy and social interests in the Edinburgh phrenology disputes. In *On the Margins of Science: The Social Construction of Rejected Knowledge*, ed. R. Wallis. Keele: Keele University Press. pp. 139-178.

13/09- Rewriting Histories of Early Science

Shapin, Steven, and Simon Schaffer. 1985. *Leviathan and the Air-Pump: Hobbes, Boyle and the Experimental Life*. Princeton: Princeton University Press. Chapters 2, 4, 5, 8.

Shapiro, Barbara. 2000. *A Culture of Fact: England, 1550-1720*. Cornell: Cornell University Press. pp. 1-33, 105-167.

Biagioli, Mario. 1990. Galileo the emblem maker. *Isis* 81: 230-258.

18/09 - Laboratory Studies: Social Construction of Scientific Facts

Galison, Peter. 1987. *How Experiments End*. Chicago: University of Chicago Press. pp. 1-71.

Latour, Bruno, and Steve Woolgar. 1979. *Laboratory Life: The Construction of Scientific Facts*, 2nd. ed. Princeton: Princeton University Press, 1986.

Knorr-Cetina, Karin. 1995. Laboratory studies: The cultural approach to the study of science. In *Handbook of Science & Technology Studies*, ed. S. Jasanoff, D.E. Markle, J.C. Peterson, and T.J. Pinch. London: Sage. pp. 165-180.

Hacking, Ian. 1999. *Social Construction of What?* Cambridge: Harvard University Press. pp. 1-35, 125-162.

20/09 - Rethinking Agency: Actor Network Theory (ANT)

Latour, Bruno. 1983. Give me a laboratory and I will raise the world. In *Science Observed: Perspectives on the Social Study of Science*, ed. K.D. Knorr-Cetina and M. Mulkay. London: Sage. pp.141-170.

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*, ed. J. Law. London: Routledge. pp. 196-233.

John Law. 1986. On the methods of long-distance control: Vessels, navigation and the Portuguese route to India. In *Power, Action and Belief*. pp. 234-263.

Collins, H.M. and Steve Yearley. 1992. Epistemological chicken. In *Science as Practice and Culture*, ed. A. Pickering. Chicago: University of Chicago Press. pp. 301-326. Latour, Bruno, and Michel Callon. 1992. Don't throw the baby out with the Bath School! A reply to Collins and Yearly. In *Science as Practice and Culture*. pp. 343-368.

Pickering, Andrew. 1993. The mangle of practice: Agency and emergence in the sociology of science. *American Journal of Sociology* 99: 559-589.

25/09 - The Turn to Technology

Pinch, Trevor, and Wiebe Bijker. 1984. The social construction of facts and artifacts: Or, how the sociology of science and the sociology of technology might benefit each other. *Social Studies of Science* 14: 399-441.

Winner, Langdon. 1986. Do artifacts have politics? In *The Whale and the Reactor: A Search for Limits in an Age of High Technology*. Chicago: University of Chicago Press. pp. 19-39.

Hughes, Thomas P. 1987. The evolution of large technological systems. In *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*, ed. W.E. Bijker, T.P. Hughes, and T.J. Pinch. Cambridge: MIT Press, 1999. pp. 51-82.

MacKenzie, Donald. 1999. Missile accuracy: A case study in the social processes of technological change. In *The Social Construction of Technological Systems*. pp. 195-222.

27/09 - Social Construction of Technology (SCOT) and Beyond

Woolgar, Steve. 1991. The turn to technology in Social Studies of Science. *Science, Technology & Human Values* 16: 20-50.

Winner, Langdon. 1993. Upon opening the black box and finding it empty: Social constructivism and the philosophy of technology. *Science Technology and Human Values* 18: 362-378.

Wyatt, Sally. 2008. Technological determinism is dead; Long live technological determinism. In *The Handbook of Science and Technology Studies*, 3rd ed., ed. E.J. Hackett, O. Amsterdamska, M. Lynch, and J. Wajcman. Cambridge: MIT Press. pp. 165-

180.

Akrich, Madeleine. 1992. The de-description of technical objects. In *Shaping Technology / Building Society*, ed. W. Bijker and J. Law. Cambridge: MIT Press. pp. 205-224.

Latour, Bruno. 1992. Where are the missing masses? The sociology of a few mundane artifacts. In *Shaping technology / Building Society*. pp. 225-258.

Bijker, Wiebe. 1993. Do not despair: There is life after constructivism. *Science Technology and Human Values* 18: 113-138.

02/10 - Science as Practice: Objectivity, Visualization, Representation

Lynch, Michael. 1985. Discipline and the material form of images: An analysis of scientific visibility. *Social Studies of Science* 15: 37-66.

Daston, Lorraine, and Peter Galison. 2007. *Objectivity*. Cambridge: Zone Books. pp. 9-53, 371.

Kaiser, David. 2000. Stick-figure realism: Conventions, reification, and the persistence of Feynman Diagrams, 1948-1964. *Representations* 70: 49-86.

Bruno Latour. 1986. Visualization and cognition: Thinking with eyes and hands. *Knowledge & Society* 6: 1-40.

Galison, Peter. 1997. Trading zone: Coordinating action and belief. In *The Science Studies Reader*, ed. M. Biagioli. London: Routledge, 1999. pp. 137-160.

Mol, Anne-Marie. 2002. *The Body Multiple: Ontology in Medical Practice*. Durham: Duke University Press. pp. 1-86, 151-184.

Law, John, and Lynch, Michael. 1988. Lists, field guides, and the descriptive organization of seeing: Birdwatching as an exemplary observational activity. *Human Studies* 11: 271-303.

18/10 – First Paper due (email Professor Lepinay)

30/10 - Feminist Perspectives

Keller, Evelyn Fox. 1985. Baconian science: The arts of mastery and obedience. In *Reflections on Gender and Science*. New Haven: Yale University Press. pp. 33- 42.

Keller, Evelyn Fox. 1992. Gender and science: An update. In *Secrets of Life / Secrets of Death: Essays on Language, Gender, and Science*. New York: Routledge. pp. 15-36.

Harding, Sandra. 1991. What is feminist epistemology. In *Whose Knowledge? Whose Science? Thinking from Women's Lives*. Ithaca: Cornell University Press.

Haraway, Donna. 1991. Situated knowledges: The science question in feminism and the privilege of partial perspective. In *Simians, Cyborgs, and Women: The Reinvention of Nature*. New York: Routledge. pp. 183-202.

Sismondo, Sergio. 1995. The scientific domains of feminist standpoints. *Perspectives on Science* 3: 49-65.

Barad, Karen. 1999. Agential realism: Feminist interventions in understanding scientific practices. In *The Science Studies Reader*, ed. M. Biagioli. London: Routledge, 1999. pp. 1-11.

01/11 - Biotechnological Reconfigurations of Kinship

Haraway, Donna. 1995. Universal donors in a vampire culture, or it's all in the family: Biological kinship categories in the twentieth-century United States. In *Uncommon Ground: Toward Reinventing Nature*, ed. W. Cronon. New York: Norton. pp. 321-366.

Thompson, Charis. 2001. Strategic naturalizing: Kinship in an infertility clinic. In *Relative Values: Reconfiguring Kinship Studies*, ed. S. Franklin and S. McKinnon. Durham: Duke University Press. pp. 175-202.

Franklin, Sarah. 2007. Sex. In *Dolly Mixtures: The Remaking of Genealogy*. Durham: Duke University Press. pp. 19-45.

Helmreich, Stefan. 2003. Trees and seas of Information: Alien kinship and biopolitics of gene transfer in marine biology and biotechnology. *American Ethnologist* 30: 340-358.

06/11 - Global Technoscience

Anderson, Warwick, and Vincanne Adams. 2008. Pramoedya's chickens: Postcolonial studies of technoscience. In *The Handbook of Science and Technology Studies*, 3rd ed., ed. E.J. Hackett, O. Amsterdamska, M. Lynch, and J. Wajcman. Cambridge: MIT Press. pp. 181-204.

Grove, Richard. 1995. Indigenous knowledge and the significance of southwest India for Portuguese and Dutch constructions of tropical nature. In *Green Imperialism*. New York: Oxford University Press. pp. 73-94.

Hayden, Cori. 2003. From market to market: Bioprospecting's idioms of inclusion. *American Ethnologist* 30: 359-371.

Fischer, Michael M.J. 2001. In the science zone: The Yanomami and the fight for representation. *Anthropology Today* 17(4): 9-14, and 17(5): 16-19.

Petryna, Adriana. 2005. Ethical variability: Drug development and globalizing clinical trials. *American Ethnologist* 32: 183-197.

Traweek, Sharon. 2005. Generating high-energy physics in Japan: Moral imperatives of a future pluperfect. In *Pedagogy and the Practice of Science: Historical and Contemporary Perspectives*, ed. D. Kaiser. Cambridge: MIT Press. pp. 357-392.

08/11 - Expertise

Wynne, Brian. 1996. May the sheep safely graze? A reflexive view of the expert- lay knowledge divide. In *Risk, Environment and Modernity: Towards a New Ecology*, ed. S. Lash, B. Szerzynski, and B. Wynne. London: Sage. pp. 45-83.

Collins, H.M., and Robert Evans. 2002. The Third Wave of science studies: Studies of expertise and experience. *Social Studies of Science* 32: 235-296.

Jasanoff, Sheila. 2003. Breaking the waves in science studies: Comment on H.M. Collins and Robert Evans 'The Third Wave of Science Studies.' *Social Studies of Science* 33: 389-400.

Wynne, Brian. 2003. Seasick on the Third Wave? Subverting the hegemony of propositionalism. *Social Studies of Science* 33: 401-417.

Rip, Arie. 2003. Constructing expertise: In a Third Wave of science studies? *Social Studies of Science* 33: 419-434.

Collins, Harry, and Robert Evans. 2003. King Canute meets the Beach Boys: Responses to the Third Wave. *Social Studies of Science* 33: 435-452.

04/12 - Risk

Castel, Robert. 1991. From dangerousness to risk. In *The Foucault Effect: Studies in Governmentality*, ed. G. Burchell, C. Gordon, and P. Miller. pp. 281-298.

Beck, Ulrich. 1986. *Risk Society: Towards a New Modernity*, trans. M. Ritter. London: Sage, 1992. pp. 9-16.

Beck, Ulrich. 1999. *Risk Society* revisited: Theory, politics, critiques, and research programmes. In *World Risk Society*. Cambridge: Polity Press. pp. 133-152.

Giddens, Anthony. 1991. Fate, risk and security. In *Modernity and Self-Identity: Self and Society in the Late Modern Age*. Stanford: Stanford University Press. pp. 109-142.

Jasanoff, Sheila. 1994. Introduction. In *Learning from Disaster: Risk Management After Bhopal*, ed. S. Jasanoff. Philadelphia: University of Pennsylvania Press. pp. 1-21.

Jasanoff, Sheila. 1999. The songlines of risk. *Environmental Values* 8: 135-152.

Lakoff, Andrew. 2007. Preparing for the next emergency. *Public Culture* (Special Issue: The Social Life of Risk) 19: 247-271.

06/12 – Miscellaneous Topics

11/12 – Miscellaneous Topics

13/12 – Miscellaneous Topics

20/12 – Paper due (email Professor Lepinay)