

Sheila Jasanoff (sheila_jasanoff@harvard.edu)
Office: KSG, L354; Phone: 495-7902
Office hours: Mon. 1:30-3:30 P.M.
Assistant: Lauren Schiff, 5-5636

124 Mt. Auburn Street, Suite 100
Wed. 2:10-4:00 P.M.

SCIENCE, POWER AND POLITICS (I)*
STP 291, History of Science 285a (Fall 2007)

This is the first semester of a year-long graduate seminar on the major contributions of the field of science and technology studies (STS) to understanding the relationships of science, technology, and political power in democratic societies. The fall semester (STP-291) is devoted to reading, analyzing, and critically integrating works by scholars in STS and related fields who have addressed such topics as the nature of scientific authority, science's relations with the state, science and democracy, scientific and technical controversies, and the politics of technology. The spring semester (STP-292) is designed as an advanced research seminar in which students will read further current works in STS and also complete and present a major piece of research and writing.

In the fall semester, we explore how the modern state's capacity to produce and use scientific knowledge influences, and is influenced by, the production and maintenance of political order. Beginning with standard models of science and politics, such as the "republic of science," the syllabus develops an alternate framework that sees these two spheres of action not as cognitively and culturally distinct but as engaged in a constant process of exchange and mutual stabilization. For this purpose, the course combines theoretical ideas and empirical examples from STS, both historical and contemporary, with approaches from social and political theory. Particular attention is paid to the cultural resources used in the simultaneous production of scientific and political authority. These include technologies of visual representation, quantitative analysis, standardization, material stabilization, persuasion, and dispute resolution, as well as associated ideas of objectivity, rationality, credibility, legality, accountability, and reliability. Seeing power as immanent, the course takes special notice of the techniques and discourses through which actors in modern polities frame and manage their perceptions of the world, in the process of framing new issues for political action. Illustrative topics include maps, museums, elections, risk, intelligence tests, and genetics.

**Either STP-291 or STP-292 may be taken as a separate course for credit, but only for extremely compelling reasons, with the instructor's permission.*

Readings

Required books for the course are on reserve in the Kennedy School library, ground floor of Littauer. Articles and book chapters are available in pdf format at the course web site.

Recommended: S. Jasanoff, ed., *States of Knowledge: The Co-Production of Science and Social Order* (London: Routledge, 2004) [paperback edition].

Requirements

Students in STP-291 I (Fall) are expected to write weekly reading responses and lead class discussion approximately twice during the semester. The latter task involves preparing written notes and questions for class use and, depending on class size, may be done in collaboration with others responsible for a given session. A final written exercise will be required of credit students, in a form to be negotiated with the instructor. Auditors may attend with the instructor's permission only if they participate actively in class, including leading discussion, but they will be excused from the final written exercise.

SYLLABUS

September 19: Introductions and Overview

What does the field of Science and Technology Studies (STS) contribute to the study of policy, politics, and power? How do the organization and materials of the course reflect perspectives from STS, and how do these relate to work in other fields? What major themes does the course develop, and what are the expectations from students? Also class self-introductions, explaining people's interest in the course.

Suggested:

- A. Gore, *The Assault on Reason* (New York: Penguin, 2007), Ch. 1 ("The Politics of Fear"), pp. 23-44.
- S. Abrams, "Seven Deadly Sins on Collision Course with Market Forces," *Harvard Gazette*, December 18, 2006,
<http://www.news.harvard.edu/gazette/2007/02.01/99-leonard.html>

September 26: STS Analytic Frameworks – Contingency and Interpretive Flexibility

What does the field of STS have to do with the analysis of political power? What is at stake in questioning "realist" views of scientific knowledge? How have different disciplines tackled the theme of contingency (or context-dependence), and how can we relate these writings to one another? How can we explain why artifacts and ideas can be constructed and yet be seen as parts of nature, as if they are not social? Put differently, how should we problematize stability, in ideas and things, and how do our answers to that problem bear on the study of politics and power?

- W.B.Gallie, "Essentially Contested Concepts," *Proceedings of the Aristotelian Society*, 56:167-198 (1956).
- D. Bloor, *Knowledge and Social Imagery* (Chicago: University of Chicago Press, 1991 [1976]), Ch. 1 ("The Strong Programme in the Sociology of Knowledge"), pp. 3-23.
- T.F. Gieryn, "The Boundaries of Science," in S. Jasanoff et al., eds., *Handbook of Science and Technology Studies* (Thousand Oaks, CA: Sage Publications, 1995), pp. 393-443.
- 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?* (London: Routledge and Kegan Paul, 1986), pp. 196-233.
- W. Bijker, T. Pinch and T. Hughes, eds., *The Social Construction of Technological Systems*, Ch. 1 ("The Social Construction of Facts and Artifacts"), pp. 17-50.
- I. Hacking, *The Social Construction of What?* (Cambridge, MA: Harvard University Press, 1999), Ch. 2 ("Too Many Metaphors"), pp. 35-62.

Suggested:

- P. Kitcher, *Science, Truth, and Democracy* (Oxford: Oxford University Press, 2001), Ch. 4 ("The World as We Make It"), pp. 43-53.
- L. Winner, "Upon Opening the Black Box and Finding It Empty: Social Constructivism and the Philosophy of Technology," *Science, Technology, and Human Values* 18:362-378 (1993).

October 3: Science – A Model Polity?

Is science a culture, a distinct organizational form, an interest group, or a model political system? How do we know? Using what criteria? Does it matter to the way we think about politics?

- R. Macleod, "Science and Democracy: Historical Reflections on Present Discontents," *Minerva* 35:369-384 (1997).
- M. Polanyi, "The Republic of Science," *Minerva* 1:54-73 (1962).
- R.K. Merton, "The Normative Structure of Science," in R.K. Merton, *The Sociology of Science: Theoretical and Empirical Investigations* (Chicago: University of Chicago Press, 1973), pp. 267-278.
- M.J. Mulkey, "Norms and Ideology in Science," *Social Science Information* 15:637-656 (1976).
- S. Fuller, *The Governance of Science: Ideology and the Future of the Open Society* (Buckingham: Open University Press, 2000), Ch. 1 ("Science as the Open Society"), pp. 7-27.
- C. Mooney, *The Republican War on Science* (New York: Basic Books, 2005), Ch. 2 ("Political Science 101"), pp. 14-24.
- D. Haraway, *Simians, Cyborgs and Women* (London: Routledge, 1991), Ch. 9 ("Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective"), pp. 183-201.
- S. Visvanathan, *A Carnival for Science* (Delhi: Oxford University Press, 1997), Ch. 2 ("On the Annals of the Laboratory State"), pp. 15-47.

Suggested:

- D.K. Price, *The Scientific Estate* (Cambridge, MA: Harvard University Press, 1965), Ch. 1 ("Escape to the Endless Frontier"), pp. 1-20.
- D.H. Guston, *Between Politics and Science* (New York: Cambridge University Press, 2000), Ch. 2 ("Understanding the Social Contract for Science"), pp. 37-63.

October 10: Modern Constitutions -- The Co-Production of Science and Politics

How does the constitution of knowledge relate to political constitution-making and the constitution of states? How do states constitute themselves as knowledgeable and as capable of deploying knowledge for public purposes? How do knowledge and knowledge-based technologies function to advance or impede the expression of democratic values?

- S. Shapin and S. Schaffer, *Leviathan and the Air-Pump* (Princeton: Princeton University Press, 1985), Ch. 8 ("The Polity of Science: Conclusions"), pp. 332-344.
- Y. Ezrahi, *The Descent of Icarus* (Cambridge, MA: Harvard University Press, 1990), Chs. 1, 2, pp. 9-66.
- B. Latour, *We Have Never Been Modern* (Cambridge: Harvard University Press, 1993), Chs. 1-3, pp. 1-90.
- H. Nowotny, P. Scott and M. Gibbons, *Re-Thinking Science: Knowledge and the Public in an Age of Uncertainty* (Cambridge: Polity, 2001), Ch. 3 ("The Co-Evolution of Society and Science"), pp. 30-49.
- B. Anderson, *Imagined Communities* (London: Verso, 1983), Ch. 6 ("Official Nationalism"), pp. 83-111.
- J. Guillemin, *Biological Weapons* (New York: Columbia University Press, 2005), "Introduction," pp. 1-19.
- S. Jasanoff, "In a Constitutional Moment: Science and Social Order at the Millennium," in B. Joerges and H. Nowotny, eds., *Social Studies of Science and Technology*:

Looking Back, Ahead, Yearbook of the Sociology of the Sciences (Dordrecht: Kluwer, 2003), pp. 155-180.

S. Jasanoff, ed., *States of Knowledge: The Co-Production of Science and Social Order* (London: Routledge, 2004), Ch. 2 (“Ordering Knowledge, Ordering Society”), pp. 13-45.

Suggested:

D.K. Price, *The Scientific Estate*, Ch. 6 (“Constitutional Relativity”), pp. 163-207.

D.S. Greenberg, *Science, Money, and Politics: Political Triumph and Ethical Erosion* (Chicago: University of Chicago Press, 2001), Ch. 3 (“Vannevar Bush and the Myth of Creation”), pp. 41-58.

October 17: Citizens in the Knowledge State

How is the very idea of citizenship conceptualized in contemporary knowledge societies? How if at all do epistemic considerations feature in theoretical analyses of citizenship? What opportunities exist for active intervention by citizens in the knowledge-making practices of modern states? Who can participate in such interventions? Who is excluded? How does political culture matter in the production of knowledgeable citizens?

E.F. Keller, *Reflections on Gender in Science* (New Haven: Yale University Press, 1985), pp. 75-94.

D. Sarewitz, *Frontiers of Illusion: Science, Technology, and the Politics of Progress* (Philadelphia: Temple University Press, 1996), Ch. 4 (“The Myth of Accountability”), pp. 51-69.

J. Carson, “The Science of Merit and the Merit of Science: Mental Order and Social Order in Early 20th Century France and America,” in Jasanoff, *States of Knowledge*, pp. 181-205.

J.E. Reardon, “The Human Genome Diversity Project: A Case Study in Co-Production,” *Social Studies of Science* 3:357-388 (2001).

S. Sperling, “Managing Potential Selves: Stem Cells, Immigrants, and German Identity,” *Science and Public Policy* 39(2):139-149 (2004).

S. Visvanathan, “Knowledge, Justice and Democracy,” in M. Leach, I. Scoones and B. Wynne, eds., *Science and Citizens* (London: Zed Books, 2005), pp. 83-94.

S. Jasanoff, *Designs on Nature: Science and Democracy in Europe and the United States* (Princeton, NJ: Princeton University Press, 2005), Ch. 10 (“Civic Epistemology”), pp. 247-271.

October 24: Constitutive Visions

How does seeing influence the making of a communal political space and the legitimation of the rules that bind polities together? How does the interpretive flexibility of seeing get disciplined to make points of view that we consider “objective”? How are particular “witness” standpoints authorized? In other words, whose sight matters to the state and in other public realms?

M. Foucault, *The Order of Things* (New York: Vintage, 1973), pp. 3-16.

S. Alpers, “Interpretation without Representation, or, The Viewing of *Las Meninas*,” *Representations* 1 (1983), pp. 30-42 [available through JSTOR].

M. Foucault, *Discipline and Punish* (New York: Vintage, 1979), Part III, Ch. 3 (“Panopticism”), pp. 195-228.

B. Anderson, *Imagined Communities*, Chs. 2, 3, pp. 9-46.

J.C. Scott, *Seeing Like a State* (New Haven: Yale University Press, 1998), pp. 1-146.

- Shapin and Schaffer, *Leviathan*, Ch. 2 (“Seeing and Believing”), pp. 22-79.
 Ezrahi, *Descent of Icarus*, Chs. 3, 4, pp. 67-127.
 D. Haraway, *Primate Visions* (New York: Routledge, 1989), Ch. 3 (“Teddy Bear Patriarchy”), pp. 26-58.

Suggested:

- L. Daston and P. Galison, “The Image of Objectivity,” *Representations* 40 (1992), pp. 81-128.
 M. Hardt and A. Negri, *Empire* (Cambridge, MA: Harvard University Press, 2000), Ch. 2 (“Biopolitical Production”), pp. 22-41.

October 31: The Politics of Stabilization – Networks, Materiality, and Power

How does materiality affect the state’s exercise of power? How, in particular, does capital matter, and is it useful to think of knowledge as a form of capital? How should we think about the exercise of epistemic and technological power across borders, especially when we consider the interpretive flexibility of knowledge and its embodied forms?

- P. Bourdieu, “The Forms of Capital,” in J.G. Richardson, ed., *Handbook of Theory and Research for the Sociology of Education* (New York: Greenwood Press, 1986), pp. 241-258.
 R.D. Putnam, “Bowling Alone: America’s Declining Social Capital,” *Journal of Democracy* 6(1) (1995), pp. 65-78,
<http://muse.jhu.edu.ezp1.harvard.edu/journals/jod/v006/6.1putnam.html>.
 B. Latour, “Drawing Things Together,” in M. Lynch and S. Woolgar, eds. *Representation in Scientific Practice* (Cambridge, MA: MIT Press, 1990), pp. 19-68.
 L. Winner, “Do Artifacts Have Politics,” in *The Whale and the Reactor* (Chicago: University of Chicago Press, 1986), pp. 19-39.
 B. Joerges, “Do Politics Have Artefacts,” *Social Studies of Science* 29 (1999), pp. 411-431.
 [S. Woolgar and G. Cooper, “Do Artefacts Have Ambivalence,” *Social Studies of Science* 29 (1999), pp. 433-447.]
 A. Mol and J. Law, “Regions, Networks and Fluids: Anaemia and Social Topology,” *Social Studies of Science* 24 (1994), pp. 641-671.
 C. Thompson, “Co-Producing CITES and the African Elephant,” in Jasanoff, *States of Knowledge*, Ch. 4, pp. 67-86.

Suggested:

- P.M. Haas, “Do Regimes Matter? Epistemic Communities and Mediterranean Pollution Control,” *International Organization* 43:377-403 (1989).
 S. Jasanoff, “Science and Norms in International Environmental Regimes,” in F.O. Hampson and J. Reppy, eds., *Earthly Goods: Environmental Change and Social Justice* (Ithaca, NY: Cornell University Press), pp. 173-197.

November 7: Objectivity – The Public Display of Reason

Reason in public life does not consist merely of justifying official decisions with reference to pre-existing principles in designated political fora. Rather, reason results from active performances, enactments, and embodiments of agreed-upon forms of rationality in varied cultural domains, not all of which are recognizably “political.” What are some of the most prominent strategies for displaying public reason in contemporary political systems? How do they integrate knowledge with power?

- P. Galison, "Aufbau/Bauhaus: Logical Positivism and Architectural Modernism," *Critical Inquiry* 16(4) (1990), pp. 709-752.
- Y. Ezrahi, *Descent of Icarus*, Ch. 6 ("Machines and Images of Order"), pp. 149-166.
- B. Anderson, *Imagined Communities*, Ch. 10 ("Census, Map, Museum").
- T.F. Gieryn, "Balancing Acts: Science, *Enola Gay* and History Wars at the Smithsonian," in S. Macdonald, *The Politics of Display* (London: Routledge, 1998), pp. 197-227.
- J. Kahn, *Budgeting Democracy* (Ithaca, NY: Cornell University Press, 1997), Ch. 4 ("Budget Publicity and Citizenship in the Metropolis"), pp. 93-119.
- S. Hilgartner, *Science on Stage: Expert Advice as Public Drama* (Stanford, CA: Stanford University Press, 2000), Introduction, pp. 3-41.
- S. Jasanoff, "The Eye of Everyman: Witnessing DNA in the Simpson Trial," *Social Studies of Science* 28(5-6):713-740 (1998).
- Y. Ezrahi, "Science and the Political Imagination in Contemporary Democracies," in Jasanoff, ed., *States of Knowledge*, pp. 254-273.
- Suggested:**
- I. Buruma, *Wages of Guilt* (London: Vintage, 1995), Part III ("Memorials, Museums and Monuments").

November 14: Rationality – The Politics of Numbers

Quantification is considered by many to be the most powerful technology for producing objectivity, and we rely on (ac)counting to establish the legitimacy of many kinds of political decisions. But how apolitical are numbers? How do they mediate politics?

- T. Skocpol, *Protecting Soldiers and Mothers: The Political Origins of Social Policy in the United States* (Cambridge, MA: Harvard University Press, 1992), Ch. 9 ("Statebuilding for Mothers and Babies"), pp. 480-524.
- T. Porter, *Trust in Numbers* (Princeton, NJ: Princeton University Press, 1995), Ch. 7 ("U.S. Army Engineers and the Rise of Cost-Benefit Analysis"), pp. 148-189.
- A. Desrosières, "How to Make Things Which Hold Together: Social Science, Statistics and the State," in P. Wagner, B. Wittrock, and R. Whitley, eds., *Discourses on Society: The Shaping of the Social Science Disciplines* (Dordrecht: Kluwer, 1991), pp. 195-218.
- M. Power, *The Audit Society* (Oxford: Oxford University Press, 1997), Ch. 5 ("Audit Knowledge and the Construction of Auditees"), pp. 91-121
- M. Strathern, "Introduction: New Accountabilities; "Afterword: Accountability and Ethnography," in Strathern, ed., *Audit cultures. Anthropological studies in accountability, ethics and the academy* [EASA series in Social Anthropology], (London: Routledge, 2000).
- M. Lynch et al., "Pandora's Ballot Box (Comments on the 2000 Presidential Election)," *Social Studies of Science* 31 (2001), pp. 417-441.

Suggested:

- J. van der Sluijs et al., "Anchoring Devices in Science for Policy," *Social Studies of Science* 28 (1998), pp. 291-323.
- S. Jasanoff, "Acceptable Evidence in a Pluralistic Society," in R. Hollander and D. Mayo, eds., *Acceptable Evidence: Science and Values in Hazard Management* (New York: Oxford University Press, 1991), pp. 29-47.

November 21: *** THANKSGIVING BREAK (NO CLASS) ***

November 28: The Politics of Normalization

Many social arrangements and political decisions hinge on determinations of what counts as normal: in identity, behavior, social relationships. How are these normalizing moves made in society, where do standards of normality come from, and how do they reflect the institutionalization and exercise of power? How do ideas of normality relate to judgments concerning sameness and difference?

- M. Foucault, *Discipline and Punish*, Part III, Ch. 2 (“The means of correct training”), pp. 170-194.
- I. Hacking, *Rewriting the Soul* (Princeton, NJ: Princeton University Press, 1995), Ch. 4 (“Child Abuse”), pp. 55-68.
- G.C. Bowker and S.L. Star, *Sorting Things Out: Classification and Its Consequences* (Cambridge, MA: MIT Press, 2000), Ch. 6 (“The Case of Race Classification and Reclassification Under Apartheid”), pp. 195-225.
- M. Minow, *Making All the Difference* (Ithaca, NY: Cornell University Press, 1990), Ch. 2 (“Sources of Difference”), pp. 49-78.
- S. Epstein, *Inclusion: The Politics of Difference in Medical Research* (Chicago: University of Chicago Press, 2007), Ch. 11 (“Sex Differences and the New Politics of Women’s Health”), pp. 233-257.
- J. Dumit, *Picturing Personhood: Brain Scans and Biomedical Identity* (Princeton: Princeton University Press, 2003), Ch. 4 (“Ways of Seeing Brains as Expert Images”), pp. 109-133.
- Roper v. Simmons*, 543 US 551 (2005) (Supreme Court decision banning capital punishment for under 18-year-olds), <http://www.law.cornell.edu/supct/html/03-633.ZS.html>

Suggested:

- Z. Bauman, *Modernity and Ambivalence* (Ithaca, NY: Cornell University Press, 1991), pp. 18-52.
- H. Gottweis, “German Politics of Genetic Engineering,” *Social Studies of Science* 25 (1995), pp. 195-235.

December 5: Discourses of Reason

Politics in complex societies is the art of living with irresolvable conflicts and irreducible uncertainties – cognitive, moral, social. How do politics make judgments that most citizens are willing to accept as binding, if not legitimate? How do technical discourses (not just science but also law and ethics) reduce uncertainty in the political realm? Why do they sometimes fail?

- S. Shapin, “Cordelia’s Love: Credibility and the Social Studies of Science,” *Perspectives on Science* 3 (1995), pp. 255-275.
- M. Hajer, *The Politics of Environmental Discourse* (Oxford: Oxford University Press, 1995), Ch. 2 (“Discourse Analysis”), pp. 42-72.
- M. Lynch, “The Discursive Production of Uncertainty,” *Social Studies of Science* 28: 829-867 (1998).
- B. Wynne, “Misunderstood Misunderstandings: Social Identities and Public Uptake of Science,” in A. Irwin and B. Wynne, eds., *Misunderstanding Science? The Public Reconstruction of Science and Technology* (Cambridge: Cambridge University Press, 1996), pp. 19-46.
- M. Kusch, “Towards a Political Philosophy of Risk,” in T. Lewens, ed., *Risk: Philosophical Perspectives* (London: Routledge, 2007), pp.131-155.

- C. Cohn, "Nuclear Language and How We Learned to Pat the Bomb," *Bulletin of the Atomic Scientists* 43(5):17-24 (June 1987).
- J. Evans, "Between Technocracy and Democratic Legitimation: A Proposed Compromise Position for Common Morality Public Bioethics," *Journal of Medicine and Philosophy* 31(3):213-234 (2006).
- Jasanoff, *Designs on Nature*, Ch. 7 ("Ethical Sense and Sensibility"), pp. 171-202.
- Suggested:**
- L. Eden, *The Whole World on Fire: Organizations, Knowledge, and Nuclear Weapons Devastation* (Ithaca, NY: Cornell University Press, 2004), Ch. 9 ("The Physics and Politics of Mass Fire"), pp. 221-252.

December 12: Rethinking Democracy through STS

How should we retheorize our ideas of democracy in a world saturated with S&T? Who is the "demos" or the "public"? How can its voice(s) be adequately represented? What is the role of experts? Must the idea of politics be expanded to include sites beyond the nation state? Which ones, and with what implications and consequences?

- B. Latour, "Where Are the Missing Masses? The Sociology of a Few Mundane Artifacts," in W.E. Bijker and J. Law, eds., *Shaping Technology/Building Society* (Cambridge, MA: MIT Press, 1992), pp. 225-258.
- B. Latour, *Politics of Nature: How to Bring the Sciences Into Democracy* (Cambridge, MA: Harvard University Press, 2004), Ch. 2 ("How to Bring the Collective Together").
- V. Rabeharisoa and M. Callon, "Patients and Scientists: French Muscular Dystrophy Research," in Jasanoff, ed., *States of Knowledge*, Ch. 9, pp. 142-160.
- B. Wynne, "Reflexing Complexity: Post-genomic Knowledge and Reductionist Returns in Public Science," *Theory, Culture & Society* 22(5):67-94 (2005).
- Jasanoff, *Designs on Nature*, Ch. 3 ("A Question of Europe"), pp. 68-93; Ch. 11 ("Republics of Science"), pp. 272-292.
- J. Wilsdon and R. Willis, *See-Through Science* (London: Demos, 2004).
- Suggested:**
- C.D. Stone, *Should Trees Have Standing?* (Oceana Publications, 1996).