

SYLLABUS

History of Science 907, Spring 2005

History of Technology

Topic: Postwar Technology and Its Critics

2:25-5:00 Thu, 6105 Social Science

Professor:	Eric Schatzberg	Office Hrs:	10-11 Thu. or by appt.
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Description:

This graduate reading seminar will examine critiques of the post-WWII techno-scientific order, from Hiroshima to roughly 1980. Under "critiques" I include the words and deeds of technical experts, public intellectuals, and social activists who questioned various aspects of technology. The "techno-scientific order" encompasses technology in all its forms, from the abstract to the specific, including structures of consumption, use as well as production. The seminar's approach is historical but interdisciplinary, suitable for students working in STS as well as those in general history. The focus of the seminar will be American, but students with European or non-Western interests are welcome. No prior background is required, but some familiarity with issues in history of science, history of technology or STS would be helpful.

The course topics are roughly chronological in order. Readings include a mix of primary and secondary sources. For some of our topics, the historiography is not well developed, so we will focus on primary sources in those weeks.

Requirements:

- 1) Participating significantly in every class meeting. Unless a student is ill, I expect everyone to have done the readings with enough care to participate intelligently in discussion.
- 2) Serving as lead discussant for the seminar meeting once during the semester. Lead discussants are required to post to the class email list a brief analysis of the readings along with discussion questions. This posting is due the evening before the seminar meeting. The lead discussant will also begin the discussion.
- 3) Writing a 12-20 page paper on a topic and period related to the seminar. This paper can be of three types, depending on your educational needs and the expectations in your discipline.
 - a) a historiographic essay (also called a literature survey). This genre provides a critical evaluation of a body of secondary literature related to a particular topic, taking account of various approaches and interpretations, and how these have changed over time.
 - b) a research prospectus (akin to a grant proposal) that defines a historiographic problem and provides a specific plan to investigate this problem. The research prospectus requires work in both primary and secondary sources. Essentially it defines a project of original research that you would undertake for, say, a chapter of a dissertation or a one-semester independent research paper. The project should be constructed so that it would result in a publishable paper, if carried to completion.
 - c) a short research paper, based mainly on primary sources. If you have a well defined research problem, you can jump right into primary sources to produce a traditional narrative research paper.
- 4) A 20-minute formal presentation summarizing the results of your paper. This presentation should be equivalent to what an academic would give at a "works-in-progress" session of a scholarly conference.

Email Class List:

I have set up an email list for this course at "histsci-907@lists.students.wisc.edu." Postings to this list will automatically be distributed to everyone registered for the course. You **must** put HS907 at the start of the subject line when you send email to the list. Avoid attachments. If you must use attachments, put your name in the file name.

Grades

Grading in this graduate seminar reflects my subjective judgment about the quality of your work and your scholarly potential. I value creative insight, independent thinking, thoughtful analysis of the readings, evidence of thorough preparation, clear prose, and consistent participation in discussions.

Course Books and Packet:

The following books will be available (by next week, I hope) from the Rainbow Bookstore Cooperative, 426 West Gilman Street (off State St.), 257-6050, open 10-6 MWF, 10-8 TuTh, 12-5 SaSu.

Richard H. Pells, *The Liberal Mind in a Conservative Age*, 2nd ed. (Middleton, Conn.: Wesleyan University Press, 1989);

Rachel Carson, *Silent Spring*. (Boston: Mariner Books, 2002 [1962]).

A course packet for the other required readings will be available for purchase from the History of Science department office, 7143 Social Science (262-1406); office hours 8:00 am to 3:00 pm. Note that **NO REFUNDS** are provided.

All readings will be on reserve at College Library.

Religious Holidays and ADA Notice:

You can take off any religious holidays you want, as long as you make up the work.

If you have a disability that might adversely affect your performance in this course, let me know and I'll do my best to accommodate you. For more information, contact the McBurney Disability Resource Center, 263-2741.

Freaking Out:

Graduate students are subject to a tremendous amount of stress. If you feel like things are getting a bit too weird, either for personal or academic reasons, please let me know, and also contact the Counseling and Consultation Service, part of the University Health Service, 905 University Avenue, 265-5600. For more information, see <http://www.uhs.wisc.edu>.

Course Outline

Week 1 (1/20): Introduction – The Meaning of Technology

To grasp what critiques of technology mean, we need to understand how the concept of technology arose and took root in the decades before WWII.

Reading: Schatzberg, "*Technik Comes to America: The American Concept of Technology before World War II*," Aug. 23, 2004, draft article under review for *Technology and Culture*.

Please have this reading completed for the first meeting of the seminar.

Week 2 (1/27): A Defining Text

Lewis Mumford published the defining text in technology criticism in 1934. Despite some dated historiography, this book contains the germ of almost every postwar critique of technology, while also capturing the tension between utopian and dystopian perspectives.

Reading: Lewis Mumford, *Technics and Civilization* (New York: Harcourt Brace Jovanovitch, 1934). Read entire book, but skim chaps. 5 and 7.

Week 3 (2/3): Cold War Technology

Although continuities always outweigh ruptures in history, the postwar era represented a profound shift in the institutions of technology, particularly through the pervasive role of the national-security state. The archetype of this transformation was the Manhattan Project.

We will also discuss the research projects this week.

Readings: Thomas P. Hughes, "Manhattan Project," in *American Genesis: A Century of Invention and Technological Enthusiasm* (New York: Viking Penguin, 1989), 381-442;

Paul N. Edwards, *The Closed World: Computers and the Politics of Discourse in Cold War America* (Cambridge: MIT Press, 1996), 1-115 (chaps. 1-3);

Stuart W. Leslie, "Introduction," in *The Cold War and American Science: The Military-Industrial-Academic Complex at MIT and Stanford* (New York: Columbia University Press, 1993).

Week 4 (2/10): The Shadow of Hiroshima on Postwar American Thought

The American experience in WWII, which made the US by far the world's strongest economic, military and political power, also had a profound effect on American thought. In the early postwar years, the ambivalent legacy of Hiroshima pervaded the writings of American intellectuals.

Readings: Pells, *Liberal Mind*, 1-116 (chaps 1-2);

Paul Boyer, *By the Bomb's Early Light: American Thought and Culture at the Dawn of the Atomic Age*, repr. ed. (Chapel Hill: University of North Carolina Press, 1994), 3-130 (chaps 1-11).

Assignment: email me, by the evening before class, your best guess at a paper topic and the type of paper you plan to write.

Week 5 (2/17): Risk and Expertise, a Conceptual Framework

Some sociologists, most importantly Beck, have argued that the technological transformation of the atomic bomb marked the beginning of a fundamentally new social and cultural order, one in which the management of risk replaces the maximization of production. This week's readings provide a conceptual framework for understanding the role of risk in critiques of technology.

Readings: Ulrich Beck, *Risk Society: Toward a New Modernity* (London: Sage, 1992), 1-84, 153-182;

Brian Wynne, "May the Sheep Safely Graze? A Reflexive View of the Expert-Lay Knowledge Divide," chap. 2 in *Risk, Environment and Modernity: Towards a New Ecology*, ed. Scott Lash, Bronislaw Szerszynski and Brian Wynne (London: Sage, 1996), 45-83;

Carolyn R. Miller, "The Presumptions of Expertise: The Role of Ethos in Risk Analysis," *Configurations* 11 (2003): 163-202.

Week 6 (2/24): Expertise and the Fallout Debate

The debate over fallout in the late 1950s provided dissenting technical experts with an opportunity to air their view the public, directly challenging the claims made by experts linked to the Atomic Energy Commission. This debate became the basis of a political movement in the United States aimed at stopping nuclear testing. Fallout-related research, most of it secret, also helped create the postwar basis for the science of ecology.

Readings: Allan M. Winkler, "Fear of Fallout," chap. 4 in *Life Under a Cloud: American Anxiety About the Atom*, 84-108, 228-233;

Robert A. Divine, *Blowing on the Wind: The Nuclear Test Ban Debate, 1954-1960* (New York: Oxford University Press, 1978), 3-83, 262-80 (chaps. 1-3, 10);

Linus Pauling, "Fact and Fable of Fallout," *The Nation* 186 (14 June 1958): 537-42;

J. Christopher Jolly, "Linus Pauling and the Scientific Debate over Fallout Hazards," *Endeavour* 26 (2002): 149-53;

Laura A. Bruno, "The Bequest of the Nuclear Battlefield: Science, Nature, and the Atom During the First Decade of the Cold War," *Historical Studies in the Physical and Biological Sciences* 33 (2003): 237-60.

Supplemental readings: Carolyn Kopp, "The Origins of the American Scientific Debate over Fallout Hazards," *Social Studies of Science* 9 (1979): 403-22; Spencer Weart, *Nuclear Fear: A History of Images* (1988), esp. chap. 11; Philip L. Fradkin, *Fallout: An American Nuclear Tragedy* (1989); A. Constandina Titus, *Bombs in the Backyard: Atomic Testing and American Politics* (1986); M. Susan Lindee, *Suffering Made Real: American Science and the Survivors at Hiroshima* (1994); Catherine Caufield, *Multiple Exposures: Chronicles of the Radiation Age* (1989); Howard Ball, *Justice Downwind: America's Atomic Testing Program in the 1950s* (1986); Richard G. Hewlett and Jack M. Holl, *Atoms for Peace and War, 1953-1961: Eisenhower and the Atomic Energy Commission* (1989); J. Christopher Jolly, "Thresholds of Uncertainty: Radiation and Responsibility in the Fallout Controversy," Ph.D. diss., Oregon State University, 2004.

Week 7 (3/3): Social Critics of the 1950s

Despite its reputation as a conservative age, the 1950s produced some of the best social criticism of the century. Although these critiques were rarely framed in terms of technology, they implicitly questioned the postwar technological order.

Readings: Pells, *Liberal Mind*, 117-261 (chaps. 3-4);

C. Wright Mills, *The Power Elite*, new ed. (New York: Oxford University Press, 2000 [1956]), 298-361, 428-31 (chaps. 13-15);

John Kenneth Galbraith, *The Affluent Society* (1958), 1-6, 152-160 (chaps. 1, 11).

Supplemental readings: Erich Fromm, *The Sane Society* (1956); William H. Whyte, *Organization Man* (1956); David Riesman, *The Lonely Crowd* (1950); Vance Packard, *The Hidden Persuaders* (1957), *The Status Seekers* (1959), *The Waste Makers* (1960).

Assignment: email me, by the evening before class, an annotated bibliography consisting of sources that you've actually looked at, with a one-sentence summary of each one indicating their relevance to your topic. Also include a restatement of your research topic.

Week 8 (3/10): Dissident Experts and Reformist Critics 1: Rachel Carson

This week and next focus on critics who attacked specific aspects of the postwar technological complex. Our analysis will focus on the way these critics appropriated and popularized scientific research on the problems of technology. Carson's *Silent Spring* is the single most influential work in this genre of technological criticism.

Reading: Rachel Carson, *Silent Spring*;

Michael B. Smith, "'Silence, Miss Carson!' Science, Gender, and the Reception of Silent Spring," *Feminist Studies* 27 (2001): 733-52.

Week 9 (3/17): Dissident Experts and Reformist Critics 2: Ralph Nader

Nader's *Unsafe at Any Speed* bears remarkable similarities to *Silent Spring*, particularly in its appropriation of expert knowledge to formulate a critique of experts.

Readings: Ralph Nader, *Unsafe at Any Speed: The Designed-In Dangers of the American Automobile* (New York: Grossman, 1965), vii-x, 65-118, 138-170, 189-281 (preface, chaps. 3, 5, 7-8);

Eric Schatzberg, "Undermining Technology from Within: Cold War Research on Automobile Safety," paper for workshop on Science as Politics in Mid-20th-Century America, University of Wisconsin-Madison, Sep. 19, 2003;

Lewis Mumford, "The American Way of Death," *New York Review of Books* 6 (April 28, 1966);

Jameson M. Wetmore, "Redefining Risks and Redistributing Responsibilities: Building Networks to Increase Automobile Safety," *Science, Technology and Human Values* 29 (2004): 377-405.

Spring Break

Week 10 (3/31): Critiques of Technology in Popular Culture

Despite the official propaganda celebrating technological progress, anxieties about technologies pervaded postwar popular culture, particularly in science fiction.

Readings: Kristina Zarleno, "Civilian Threat, the Suburban Citadel, and Atomic Age American Women," *Signs* 24 (1999): 925-58;

Anton K. Kozlovic, "Technophobic Themes in Pre-1990 Computer Films," *Science as Culture* 12 (Sep. 2003): 341-72;

M. Keith Booker, "Politics in the American Science Fiction Novel, 1946-1964: Science Fiction as Social Criticism," chap. 1 in *Monsters, Mushroom Clouds, and the Cold War: American Science Fiction and the Roots of Postmodernism, 1946-1964* (Westport, CT: Greenwood press, 2001), 27-63;

Margot A. Hendrikson, "Judgment Day: Dr. Strangelove's Cultural Revolution," chap. 8 in *Dr. Strangelove's America: Society and Culture in the Atomic Age* (Berkeley: University of California Press, 1997), 303-44; 426-30.

A screening of Kubrick's *Dr. Strangelove* will be arranged.

Assignment: email me, by the evening before class, a provisional statement of the argument you plan to make in your paper, along with a brief outline indicating the major sections of your paper and an updated annotated bibliography.

Week 11 (4/7): The Radical Critique of Technology in the 1960s

The 1960s saw the rise of a new discourse that was explicitly critical of modern technology in general. This critique found echoes in the rhetoric of the New Left and the counterculture.

Readings: Students for a Democratic Society, *The Port Huron Statement, 1962* (Chicago: Charles H. Kerr, 1990), 6-36;

Jacques Ellul, "The Technological Order," *Technology and Culture* 4 (1962): 394-421;

Lewis Mumford, "Technics and the Nature of Man," *Technology and Culture* 7 (1966): 303-17;

Herbert Marcuse, *One-Dimensional Man: Studies in the Ideology of Advanced Industrial Society* (Boston: Beacon Press, 1964), ix-xvii, 1-18, 144-69, 225-57 (Introduction, chaps. 1, 6, 9-10);

George Lichtheim, "The Threat of History [review of *One Dimensional Man*]," *New York Review of Books* 2 (Feb. 20, 1964);

Angela Davis, "Marcuse's Legacies," 1999;

Paul Goodman, "Can Technology Be Humane," *NYRB* 13 (Nov. 20, 1969).

Week 12 (4/14): Technological Alternatives

Beginning in the late 1960s, some critics began offering visions for an alternative technological order, based on changes that could often be implemented without a revolutionary overthrow of the existing technological complex.

Readings: Murray Bookchin, "Towards a Liberatory Technology," in *Post-Scarcity Anarchism* (Berkeley: Ramparts Press, 1971), 85-139;

E. F. Schumacher, *This I Believe and Other Essays* (Foxhole, Dartington Totnes, Devon: Green Books, 1997), 10-18, 35-43, 55-63, 67-83, 87-116, 130-42;

Amory B. Lovins, "Energy Strategy: The Road Not Taken," *Foreign Affairs* 55 (Oct. 1976): 65-96;

Andrew Kirk, "Machines of Loving Grace: Alternative Technology, Environment and the Counterculture," in *Imagine Nation: The American Counterculture of the 1960s and '70s*, ed. Peter Braunstein and Michael William Doyle (New York: Routledge, 2002), 353-79.

Week 13 (4/21): Presentations, Round 1

We will have four or five 20-minute presentations in each of the last three weeks. This is also a good time to meet with me to discuss your papers.

Assignment: If you are not doing a presentation, work hard on your papers.

Week 14 (4/28): Presentations, Round 2

We will have four or five 20-minute presentations in each of the last three weeks.

Assignment: If you are not doing a presentation, work hard on your papers.

Week 15 (5/5): Presentations, Round 3

We will have four or five 20-minute presentations in each of the last three weeks.

Assignment: If you are not doing a presentation, work hard on your papers.

5/12, 5:00 pm (Thursday): Final Papers Due